Museums and Visitors on the Web

A comparative study of visitor engagement on social media in Dutch and Turkish museums

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Introduction

The recent financial crisis (2008 to present) has changed existing dynamics in the world of business and politics. Affected countries all seem to agree that budget cuts are necessary to avoid economic depression, and have almost in unison targeted budgets in the cultural sector. Especially in countries such as the Netherlands, where the state subsidizes a range of activities within the cultural sector (though never 100%), the notion that has become dominant is that the cultural sector needs to be able to survive without or on significantly fewer subsidies, i.e. that it has to find ways to be self-sustaining.

Becoming self-sustaining might sound straightforward: more own income is needed, thus more ticket sales, thus more marketing and audience development, which requires more and smarter use new technologies and the ability to attract new audiences. It is under this framework of thought that a large majority of cultural organizations have welcomed social media platforms and their potential for new audiences. Setting up accounts on the most popular social media platforms such as Facebook has the potential for cultural organizations to use it as an additional marketing environment, advertising upcoming events, putting up pictures from past events, and surveying their online audiences by the built-in statistics tools of these platforms. In addition, the organizations have a tool ready for them to survey their online audience, ask for their opinion, organize ticket give-aways, or start discussions about a subject related to their organization.

Museums are no exception to this phenomenon. Similar to other cultural institutions, museums have embraced social media and can be found on a variety of social media from the more popular Facebook and Twitter platforms to the more specialized ones such as FlickR or Instagram. Museums need to set aside part of their budget, time and personnel to be able to stay active on several social media applications in addition to their traditional marketing platforms (such as regular website and print advertising), which is justified by the two motives mentioned above: marketing to broader audiences and new audience (visitor) development.

The question remains, however, whether these social media platforms actually achieve any of the goals which initially led the museums to adopting them. The most important question is naturally whether museums actually get new visitors through their interaction on social media. However, the question that should precede this is whether museums actually manage to interact with visitors on social media at all. It is expected that these social media tools can easily serve as marketing platforms for advertising already existing activities and material. But it requires more resources to use social media platforms to reach out to new visitors or engage with them, as well as engage existing visitors to become more involved.

Additionally, the overlapping field of museums and social media is an interesting one, when the core concepts are compared. Museums have a reputation for being the authority; they collect and exhibit in a taste-formative fashion for current and future generations and the curators and art experts are the ultimate authority on authenticity, exhibitions and collections. On the other end of the spectrum, social media is researched and talked about consistently tied to the concept of democratizing the web, echoing its participatory culture. It is therefore compelling to look at how museums function on social media and how they deal with the concept of being the authority on a democratizing platform such as Web 2.0.

From this starting point, the general question that arose was '*What does social media use of museums tell us about innovation and entrepreneurship in museums?'* How does funding affect the adoption and use of social media? Do smaller museums adopt social media faster than larger museums? Or do only larger museums have the resources to engage with visitors on social media applications? Is the location of the museum important for innovation and its entrepreneurial activities?

In order to identify some trends pertaining to these intriguing questions, this thesis will focus on two distinct urban settings, Amsterdam and Istanbul, and their levels of engagement with visitors on social media. Attention is paid to how different characteristics of museums impact their visitor engagement on social media.

On the one hand, it is said that the Netherlands is the number one most digitally connected country in Europe[1] and its museums are no exception. However, to what extent they take advantage of the opportunities these new media offer is unclear. On the other hand, Turkey, with a relatively young museum sector, is still developing and exploring such platforms. It is interesting to see the similarities and differences of adoption and use of social media between one established, western high-tech society and one developing middle-income country, which is growing very rapidly, both with high levels of presence on social media. With this chosen focus, trends of museums in different type of economic setting will also become visible.

In addition to the tension between the museum as an authority and the museum on the democratized social media, an important subfield of this research is entrepreneurship in museums. As museums face new technologies, new frontiers, they are expected to make use of these opportunities, take risks and behave entrepreneurial to get ahead of other museums. In the 21st century when the limited free time of individuals needs to be shared by many cultural and recreational activities, it is possible to say that entrepreneurial ways to attract audiences may be imperative for museums. While social media activities of museums make a very small portion of those ways, it still provides an insight into innovation within the museum sector.

Whether small museums are more innovative than larger museums by adopting new technologies faster and using this for competition against larger museums would shed light on how to support innovation in the cultural sector. Whether full state funding hinders entrepreneurship by taking away all incentive from museums to improve and innovate would drastically change the way governments look at complete funding of cultural institutions. In this environment of budget cuts and financial instability, it is of crucial importance to point out how different museum characteristics affect the innovation cycles of the museum. These results would be valuable for museums not only in the two focus locations but globally and can provide a framework for future cultural policy.

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[1] comScore Research Press Release:
http://www.comscore.com/Press_Events/Press_Releases/2011/4/The_Netherlands_Ranks_number_one_Worldwide_in_Penetration_for_Twitter_and_LinkedIn

As the focus of this thesis falls into two separate domains, the following chapters will serve as theoretical introductions to bring these two main concepts together: museums and social media. The first part will look into economics of museums, mostly drawing from cultural economics theory, followed by a look into what is meant with social media, which draws heavily from media studies and communication studies. The third part will combine the two concepts together to look at social media in museums, which is researched in a variety of fields such as media studies, museum studies, communication studies as well as informatics. The hypotheses formulated in the Methodology chapter bring the focus on entrepreneurship and investigate the relationship between entrepreneurship and museums under the framework of social media adoption and use.

I. Museums

'Social media and museums' is becoming a fashionable topic in research; mostly from a museum studies or media studies perspective. In order to look at this phenomenon from the standpoint of cultural economics, one has to take a step back and focus on the main institution: the museum. The first part of this thesis will take a closer look at the economics of museums using theory developed over the past decades in cultural economics on the subject. Part I includes the definition of the museum, followed by the economics of museums and what is distinctive about these institutions. It will conclude with brief overviews of the two museum sectors in focus.

1.1 The Museum – a definition

The International Council of Museums (ICOM) defines museums as follows:

> "A museum is 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, 2007)

The international museum community adopted this definition in 2007. As the world changes, the definition of the museum has also evolved accordingly; one can imagine that developments in technology and financial stability in the world might already require revisions. But even more importantly, the definition is very open. Art museums, which are what primarily comes to mind at the mention of museums, are only a fraction of the body of institutions that fit this definition. Different museum types can be identified using four criteria: content, size, age and institutional form (Frey & Meier, 2006).

When it comes to content, the types include but are not limited to art museums. Types of museums are defined by the nature of their collections. While larger museums may fit into several categories, smaller museums may be much more specialized than the overall categories might suggest. The following categories are in accordance with the

categorization of the American Association of Museums Directory[2]: aquarium/botanic garden/zoo, archaeology museum, art museum, children/youth museum, ethnology museum, historic house or site, history museum, natural history/anthropology museum and science and technology museum. Museums can specialize further; military history museums, aviation/ air and space museums fall under the broader category of history museums, whereas modern art museums fall under art museums. Below is a brief description of each type of museums, which will be used in the descriptions of the research samples under the Methodology Chapter (IV).

Aquarium/Botanic Garden/Zoos: Botanic Gardens and zoos are usually not seen as museums, but they are considered to be "living museums". These museums have similar purposes to other museums such as education, study and research and preservation of collections. One of the examples to this type of museum is the National Zoo in the United States, which is part of the Smithsonian Institute. The Smithsonian Zoo's collection includes about 400 species (and 2000 animals) and the zoo cooperates with the Smithsonian Conservation Biology Institute, whose mission is to conserve species and train conservationists.

Archaeology Museums: Archaeology museums display a collection of archaeological artefacts. These museums can be open-air museums displaying the ruins of an archaeological site (such as the ancient city of Ephesus) or display archaeological findings inside a museum building. One of the well-known examples to this type of museum is the Pergamon Museum in Berlin, Germany, which hosts excavated, original sized and reconstructed versions of the Pergamon Altar (Turkey) in the museum among others. The Acropolis of Athens is another well-known example for the open-air archaeological site.

Art Museums: Art museums display art objects, usually from visual arts such as paintings, sculptures and prints. Art museums have a long lasting history ranging from European cabinets of curiosities, towards private collection of art to showcase power such as the Medicis in Italy, to the modern idea of the museum as the public exhibition

[2] American Association of Museums Member Directory: http://iweb.aam-us.org/Membership/MemberDirectorySearch.aspx

space (Artun, 2006). Art museums can specialize further such as modern art museums, contemporary art, photography, etc. The Louvre museum is a world-known example of an art museum.

Children and Youth Museums: Children and youth museums focus on the informal education of younger audiences. Children's museums tend to have a different understanding to collections and exhibitions than regular museums and have a hands-on approach to interest children and youth to museums and to art. One of the largest children's museum is the Children's Museum of Indianapolis in the United States, with around 100,000 artefacts in its collection, 14 exhibitions and a lab where children can work with scientists.

Historic House or Site Museums: Historic houses and site started to be preserved towards the end of the 19th century and make up a large portion of museums in some countries. These type of museums include different types of sites such as royal palaces or monuments. While some of the houses could be kept with their original furniture and accessories, which make up the collection of the house, other museums need to acquire collections related to the house or site itself. In contrast to other museums, the building is part of the collection in these museums. Frederiksborg Palace is a Danish example of a historic palace, which is open as a museum, hosting several rooms with the original furniture and others rooms including portraits a national portrait gallery.

History Museums: History museums cover the history of a certain subject or geographical area. Military history museums, aviation history museums fall under this category, as well as the historic house of a poet. The collections can consist of different type of objects ranging from paintings, objects, artefacts to documents and photographs. The Musical Instrument Museum in Brussels is an example of a history museum, detailing the historical development of musical instruments over the ages with its collection of 8000 instruments.

Natural History Museums/Anthropology Museums: Dubbed as one category under the American Association of Museums, Natural History Museums focus on nature and culture. The collections are preserved objects from the natural world and the exhibitions

aim to educate the visitors on natural history and anthropology. Natural History Museum in London is one of the most famous centres of research in natural history, specializing in taxonomy and conservation. It also houses the National History Museum library.

Science and Technology Museums: Science and Technology museums focus on the history of development of scientific and technological breakthroughs and have different type of collections depending on the focus of the museum: the collections tend to have prototypes or copies of inventions, or versions of technological or scientific marvels, which show how these work to the visitor. Cite des Sciences et de l'Industrie in Paris and Science Museum in London were the two most visited science museums in 2010-2011.

These main categories of museums give an overview of the different type of museums that exist in most countries. The type of the museum has an impact not only on the institutional organization of the museum but also on the size, funding opportunities, needs and its relationship with entrepreneurship. However, it is only one of the characteristics within the definition of museums.

The definition of museums does not explicitly mention each characteristic of the museum. However, there are several important characteristics, which can be used to categorize museums. One of those characteristics is size. One can talk about museums catering to a specific community in small cities to superstar museums[3] such as the Louvre in Paris, which receive millions of visitors annually, and have world-renowned collections (Johnson, 2003). The size of the museum not only has an impact on the economics of each museum (in terms of personnel and financial support necessary), but also on its location (economic impact).

In addition to size, another important characteristic is the institutional form. While most museums operate as non-profit organizations, some museums (mostly in Europe) are financed fully by the state. While fully state-funded museums is a rarity in Western Europe and the United States, it is more common in less developed museum sectors, where national treasures are under state protection. In addition to state museums, other

[3] Superstar museum is a term made popular by Frey. In Frey (1998), these museums are described in detailed. Briefly, these museums are the must-go tourist attractions that attract large number of visitors, which have world-famous painters and paintings in their collections.

funding schemes exist for museums, such as privately owned museums and foundation museums. These

Last but not least, age is another characteristic. There are long-established museums such as the British Museum or the Louvre with historic buildings and long-lasting history, which are regarded as national treasures themselves as well as younger museums with modern architecture.

Despite the differences of age, size, fame and institutional form of museums, these all work towards the same purpose, identified in the ICOM definition: "… acquires, conserves, researches, communicates and exhibits…" (2007). Another important part of the ICOM definition is the purpose of these responsibilities: education, study and enjoyment. This is also echoed in the Museum Manifesto of Noble (1970) in the five basic responsibilities of every museum: (1) to collect, (2) to conserve, (3) to study, (4) to interpret and (5) to exhibit (Noble quoted in Frey & Steiner (2010)). Before going in-depth into the economics of museums, it is important to take a closer look into the responsibilities of the museum to better understand how these make a difference in the economics of these institutions.

1.1.2 Main responsibilities of Museums

This sub-chapter will give a detailed overview of the main responsibilities of museums as defined by ICOM. The first responsibility of the museum is to collect and to acquire. The collection is the most valuable asset of any museum (Frey & Meier, 2006). The (exhibited) collection is in many cases the main reason for museum visits. This leads to every museum continuing to collect, and in some cases to exchange works of art or sell certain works of art to acquire others. This exchange phenomenon called deaccessioning is frowned upon by many museum professionals. (Deaccessioning will be discussed in detailed under *Economics of Museums*.) Even without the exchange of the collection, the museum collects objects and works of art, which fall under its expertise, with the mission to collect whatever will be important for future generations as well as current generations. This leads to museums collecting continuously with the intention to format the taste of future generations of visitors.

As the museum improves and expands its collection, it also needs to ensure that the previously collected and displayed works are in good order. Collected objects and works of art decay over time, and the museum is responsible to delay this process and to conserve these. There are many reasons for the deterioration of the works and objects, be it from sitting in the museum storage or from being in exhibition halls. Conservation, preservation and restoration processes are done continuously by professional restorators within the museums' staff. Although conservation is mainly associated with art museums, anthropological objects as well as scientific objects also need to be preserved and kept in good condition.

With the increasing amount of collected items, it is important that the museum can verify the origin and importance of each object in the collection, not only to justify these acquisitions, but also to be able to display these objects according to their characteristics. Thus each museum has to invest in personnel to research and to study a newly acquired object or painting as well as re-evaluate an object based on new information arising from research. Most museums also embark on research themselves regarding their subject or field in addition to researching focussed on the collection.

Although not the first, the most visible responsibility of the museum is to exhibit (part of) its collection. One of the most common ways of presenting the acquired knowledge and the collection of the museum is through exhibitions. While older and larger museums tend to have one permanent exhibition in addition to temporary exhibitions in different parts of the museum, museums can also choose to have temporary exhibitions only, displaying parts of their collection at a given time under a given theme. Overall, only a very small percentage of the whole museum collection is on display in most museums.

Related to exhibiting the works within its collection, the museum is also expected to communicate and to interpret its research and study related to its area of focus. The museum communicates all their findings and knowledge through exhibitions and publications. This communication can be done via guided tours, audio guides, written explanations next to the paintings or brochures, publications, blogs or podcasts. The knowledge is also interpreted by curators who put together different objects and paintings under one theme or subject. This results in curators being an authority figure in the

museum and the art world, as their interpretation is what gets communicated to the public.

Other key concepts related to the mission of museums are educating the public and maximizing access (Johnson, 1998). All these different components of the definition of a museum affect how museums operate, and how economists analyze museums. The following section will look at museums from a cultural economist perspective.

1.2 The Economics of Museums

The economics of museums has been an interesting topic throughout the development of the field of cultural economics. First of all, economic principles that apply to any unit of production can be applied to museums; these include but are not limited to the concepts of demand and supply, cost functions and nature of output. Moreover, the museum can be regarded as an individual actor behaving a certain way to maximize their utility. This section will review existing literature on the economics of museums, which use the methodologies mentioned above.

1.2.1 Demand and Supply in Museums

In order to understand how museums operate, how they make decisions (and eventually how new media platforms such as social media applications fit in to the museum work), a closer look at demand and supply of museum services is necessary.

Demand for museum services can be categorized into two separate types: private demand for these services by museum visitors, and social demand for these services by the public (visiting or not). According to Frey (2006) for the individual visitor, there are several factors that determine demand for a museum. These are the admission fee, the opportunity cost of time (not only the opportunity cost of time spent visiting a museum, but also ease and duration of transportation as well as availability and quality of related services), price of alternative activities and the income and education level of the visitor. In the cases of 'superstar museums', the demand of the private visitor differs, as the visitors are unwilling to substitute lower talent for higher (or a cheaper substitute with the superstar) (Frey, 1998).

The second type of demand for museum services is the social demand, which is related to the positive external effects that arise from a museum's activities. These non-user values are:

- the option value (of the possibility of visiting at any other time in the future),
- the existence value (of knowing that a museum exists even without any plans to visit in the future),
- the bequest value (of knowing that future generations will be able to enjoy the museum if they wish),
- the prestige value (of knowing that the museum is highly valued outside their community (e.g. internationally)),
- and the education value (of knowing that the museum contributes to the sense of culture of visitors and non-visitors alike) (Frey, 2006).

On the supply side of museum services, both Johnson (2003) and Frey (2006) pay attention to the special cost structure of museums, especially to the high fixed costs. These high fixed costs include the building, the permanent collection and the exhibits, high-skilled staff (e.g. curators and restorators), insurance and technical support to the collection. The variable costs are a much lower percentage compared to the fixed costs that the museum occurs.

Another important distinction of the museum is the marginal cost of the extra visitor. As the cost of an exhibition does not depend on the number of visitors, the marginal cost of an extra visitor is close to zero. The marginal cost may become problematic for superstar museums or museums with blockbuster exhibitions[4] due to congestion.

In addition to these, museums also suffer from high opportunity costs (Frey 2006). The greatest asset of the museum is the collection, what is both in exhibits and in storage. The

[4] Blockbuster exhibitions are those exhibitions that are designed to attract the largest number of audiences either due to world-famous artists that are featured or due to popular themes.

works in storage as well as the building incur the opportunity cost of return that would be generated by alternative use. However, it is now regarded as common that most museums are bound – by state rules or donation agreements – to keep their collections and not allowed to sell some works in order to acquire others. The selling off of works in the existing collection is called deaccessioning, and while it is a bigger challenge for art museums, it is generally frowned upon.

1.2.2 The Museum as a Multiple Output Firm

As the definition of the museum also manifests, museums are multiple output firms: conservation of works in the collection, documentation of works, methods and research findings as well as publications of exhibitions, display of the collection, education of the audience, entertainment and even shopping are considered outputs of museums (Johnson & Thomas, 1998:75). Through the display of the collection services such as education and aesthetic enjoyment are produced and complimentary services such as the museum café and shop add to the visitors' experience. In addition, as Fernandez-Bianco and Prieto-Rodriguez add, museums produce "preservation services for their own collection and expertise offered to other museums, and research on the collection and on its context." (2011:248)

However, not all parts of this production are acknowledged by the general public. What is most visible to the outside world is the part of the collection on display and the museum café and shop. The conservation of the existing collection (as well as any acquisitions to the collection) mostly happen out of the public eye and is intended for consumption by future generations (Johnson, 2003:315).

As a multiple output firm, the museum has a production function. This takes into account all the activities of the museum, including the various input and output. Frey (2006) uses a cost function defined by Jackson (1988), which establishes total operating cost as a function of total attendance, wage rate paid per worker, and cost of capital, which is measured as the ratio of expenditures to contributions. (2006: 1025) In this function, expenditures include activities such as development, membership and advertising and contributions cover those from private and public sources. However, Peacock and Godfrey (1997) argue that it is hard to determine a production function for the museum,

as output is so varied and each output requires a "different input mixes" (1997: 370) Safe to say that there is no one overarching production function for a given museum and the function depends highly on the age, size, type and institutional form as well as the activities defined by its mission and activities.

1.2.3 Nature of Output

Museums various output have public good aspects (non-rival and non-excludable), which affect the decision making of museums as well as cultural policy bodies. For example, the research findings of museums are public goods; these have the non-excludable (everyone can have access to these findings) as well as non-rival (one individual's access or use does not limit another individual's use) characteristics (Johnson, 2003:315). On the other hand, visitor experience is non-rival (with the exception of congestion in superstar exhibitions), but can be excludable by enforcing entrance fees. Their output can also be described as a merit good, as the educational activities contribute to a better-educated and informed public. (2003:319)

Comparing museums with other multiple output firms, it is interesting to see the difference in the nature of the output. Not only do museums have public good aspects, their products are not always tangible or open to public. As explained above, while some of the outputs are very visible to the public, others such as the conservation of the non-exhibited works and research done by the museum staff are less visible outputs. On the other hand, the museum's more visible outputs such as the exhibitions can result in values that transcend the visitors and become a national pride for visitors and non-visitors alike.

1.2.4 Institutional form and behaviour

As mentioned earlier, one of the ways to look at the economics of museums is to observe them as an individual actor attempting to maximize its utility. One of the criteria for different types of museums, which directly affect the economic behaviour of museums, is the institutional form. The most common institutional form for museums in Europe and in the United States is the non-profit form (Frey, 2006). But even under the umbrella of the non-profit organization, the funding schemes of the museum impact the decision-making

processes. Frey (2006) recognizes three different types of institutional forms with this aspect: public, private and museums dependent on donations.

Public museums are those that are funded exclusively by the government and by public grants. This is usually justified through the positive and educational externalities of museums discussed earlier. In these cases, any deficit incurred by the museum is covered by public money, which removes any incentive to avoid deficits. Exclusive public funding also displaces the pressure for more visitors, which causes the museum to neglect related services such as the museum shop or the museum café. Deaccessioning is mostly not an option for public museums.

The second type of institutional form is the private museum. These museums in many cases are owned by foundations or backed by wealthy families, and their survival depends on own-income and on donations. In these cases, additional profit made by income or donations are put aside to be reinvested into the organization in the future. As the museums are not exclusively covered for their deficits they work with market forces, which focus the museum to get more visitors (and turn more visitors into repeat-visitors) and to create a high-value visitor experience. This leads to better-developed related services (renting space in the museum as well as the museum shop or café), as well as planning more blockbuster exhibitions to attract visitors. Deaccessioning is a possibility, as the collection is also regarded with market forces.

The last type of museum in this regard is the donation dependent museum. In these cases, the decision-making process as well as museum policy is heavily influenced by donors. Donations may come with conditions regarding how it can be used. Even when they come unattached, the museum is accountable to prove that the donations are used wisely. It keeps the museum focused on attracting more visitors, but more importantly attracting more donors.

In the following two subchapters, more attention will be given to the specifics of the Dutch and Turkish museums to create an overview of the museum sectors to set the foundations of this research.

1.3 The Dutch Museum Sector

As expressed in the introduction of this thesis, the research question focuses on the similarities and differences in audience participation in social media among Dutch and Turkish museums. To be able to compare the museums' activities and interaction in the virtual world, the museum sectors of each country need to be briefly presented. This subchapter will give a short overview of the Dutch cultural policy and the museum sector.

The Netherlands is a small Western European constitutional monarchy, which originally acquired its wealth to its Golden Age through overseas trade in the 17th century. Until the 1600s, the Netherlands had no tradition of patronage (Ministry of Education, Culture and Science, 2009: 23). Some commissions to architects, painters and sculptors were given to artists by 'stadtholders', but on a modest scale (idem). The first public museum in the Netherlands was founded by one of the stadholders in 1780 when he opened up his collection to the public. However, state patronage and subsidies did not become common until the twentieth century.

The French rule between 1795 and 1813 influenced the development of a cultural policy and the idea of government being involved in the cultural sector. The government got more involved and developed stronger cultural policy and involvement of the government. So much so that "a strong tradition of private patronage has helped the national museums develop since the beginning of the nineteenth century". By the twentieth century, the Dutch government had developed a generous museum subsidy system (Bodenstein, 2011:595). This resulted in over a hundred new museums to arise between 1920 and 1940 and continued as a well-subsidized sector through the 1960s when the Dutch government operated similar to a welfare state (Ministry of Education, Culture and Science, 2009:34). One of the most known examples of this support is the Rijksmuseum in Amsterdam, which had been a state museum until the 80s.

However, this type of cultural policy was questioned with the economic crisis of the 1980s, and several policies changed. Firstly, in 1985 the Museum Policy Document *Notitie Museumbeleid* changed the policy to cover the losses of all museums even when they were not owned by the state. Effective 1987, the government only covered the losses

of selected museums with national collections (Ministry of Education, Culture and Science, 2011:98). Moreover, the Deltaplan – for the modernization of collection management of Dutch museums for better efficiency – was introduced in 1992 (Bodenstein, 2011). The Deltaplan introduced the idea of the Dutch Collection. Through this concept, the collections and buildings of national museums went under state ownership, while the museums became legal entities in their own right (2011:99). Under this law, former national museums (such as Van Gogh Museum and the Rijksmuseum in Amsterdam) became foundations under the responsibility of the Ministry of Education, Culture and Science OCW.

The cultural policy towards museums has gone back and forth since then, in 2005, the state went back to a general system of subsidies (Bodenstein, 2011) and in 2007 the outline to cultural policy *Kunst van Leven: Hoofdlijnen Cultuurbeleid* was introduced which took 30 museums with national collections under the category "eligible for continuous funding" rather than having them apply every four years.

According to the Central Bureau of Statistics, the total number of museums in the Netherlands in 2007 was 773[5].

1.4 The Turkish Museum Sector

Turkey, with its population of 70 million and a quickly developing economy, has been slowly workings its way up on the art world radar. Although it has a very rich history reaching back to the beginnings of the Ottoman Empire, and even before to Alexandria, its museological history has not even been close to match its history. Museological developments did not develop until the middle of 19th century, which has resulted in many important objects have been smuggled outside of Turkey. Some are still in display in Western European museums.

The establishment of museums in Turkey can be categorized under two headings: museums for protection of important collections and objects and museums as "a contemporary institution as an indicator of westernization" (Özkasım & Ögel, 2005).

[5] Data taken from Centraal Bureau voor de Statistiek : http://statline.cbs.nl/StatWeb/publication/?VW=T&DM=SLNL&PA=7433MUS&LA=NL

While earlier museum initiatives were organized to protect works of art or collections, later on with the founding of the republic museums were seen as important institutions of the Western European cultural world and their existence were taken as indicators of Westernization and modernity (ibid.).

The first museological initiatives started in 1846, though constant moves and management changes made it impossible to create a museum open to the public (Milliyet, 2010, 14 Oct). In 1868, the Royal Museum (*Müzehane-i Hümayun)* was established under the Ministry of Education, and displayed other antique collections symbolizing the wealth of the empire (Uraz, 2006).

Most of these initiatives following these were the conversation of old historical sites and buildings into museums (e.g. Topkapı Palace) in a bid to modernize the Ottoman Empire and its cultural scene. Towards the end of the 19the century, the first initiative was separated into two museums: the Military History Museum and the Archaeology Museum. After the foundation of the Republic of Turkey, museology gained importance and museums were approached with a more modern understanding. However, the opening of many public museums after the Republic and their state has not been kept up.

However, with the economic developments and many other factors, there has been a rise in private museum initiatives starting from the 1990s. Private museums are defined by the Law for Preservation of Cultural and Natural Artifacts (No. 2863), set in 1983, as "museums which are not managed by the Ministry of Culture (former Ministry) but dependent to the supervision of the ministry" (Uraz, 2006). While this definition includes museums under other ministries and of corporations, the real rise in number of museums of foundations has been impressive. As of 2004, there were 176 public museums dependent to the Ministry of Culture and Tourism and 97 private museums, which are independent from the directorate of the Ministry (ibid.).

II. Social Media

Before diving into the realm of social media and museums, a short overview is necessary to understand what is meant with social media and why it has become such a phenomenon. This section will not go into an extensive discussion of the nature of the World Wide Web, rather it will give an overview of the history of Web 2.0 and emergence of social media and focus on the principles of Web 2.0, which make social media such a phenomenon for users as well as organizations. For a more extensive discussion on the technical developments leading to Web 2.0, readers can refer to other informatics sources, including Lawrence Lessig's *The Future of Ideas* (2001).

2.1 The Emergence of Social Media

The emergence of social media has been made available through the emergence of its two key foundations: the Web 2.0 and user-generated content. According to Kaplan and Haenlein (2010), one can define Web 2.0 as the platform for the evolution of social media. Web 2.0 follows (unsurprisingly) Web 1.0, and is considered to be "a new way to utilize the World Wide Web." (Kaplan & Haenlein, 2010:61) The term was made popular by Tim O'Reilly who created the Web 2.0 Conference and subsequently published an article where he laid out the principle differences between Web 2.0 and 1.0 (O'Reilly, 2005). The main difference of Web 2.0 was and is the continuous modification of applications by users rather than the creation and publication by one individual. This has given rise to Wikis (deriving from the social encyclopedia Wikipedia (see Glossary)) and to YouTube.

A second important concept for social media is user-generated content (UGC). Kaplan & Haenlein call user-generated content "the sum of all ways in which people make use of Social Media." (2010:61) The concept describes user created content which is publicly available online. A definition is provided by the OECD with three requirements: "User-Generated Content is defined by three requirements:

(1) Publication requirement: the content generated by the user must be published, either to a publicly available website (e.g. Wikipedia) or to a forum where a limited group has access to it (e.g. Facebook).

(2) Creation requirement: Users must add their own value to the generated content, merely copying and pasting somebody else's work (sharing a video, for example) is not considered UGC, but writing a blog-post, sharing one's photos on Flickr or creates a fan video on YouTube fits under the UGC.

(3) Creation of outside of professional routines and practices: Work created for commercial purposes does not fit the definition of the UGC, it has to be created outside of the professional sphere. (OECD, 2007)

User-generated content is the underlying factor of all the above-mentioned platforms. Wikipedia is an encyclopaedia prepared by users for users (with editors making sure information is accurate and objective), blogs, Google Plus, Twitter and Facebook enable users to share their thoughts and their work, even if most of the time what is posted is just daily musings or personal updates. Especially newly arrived platforms such as Instagram and Pinterest are UGC-heavy and becoming popular very quickly. They also provide opportunities for museums to present lesser-known items of their collection or communicate upcoming or ongoing projects visually.

Whereas Web 2.0 is the technological foundation, social media enables the creation and sharing of user-generated content based on this foundation (Kaplan & Haenlein, 2010). All web-based applications that operate within the ideological frame of Web 2.0, which enable user-generated content, fall under social media. Kaplan and Haenline (2010) define six categories of social media: collaborative projects such as Wikipedia and delicio.us, blogs and micro-blogging sites such as Twitter, content communities such as YouTube and FlickR, social networking sites such as Facebook and Google+, virtual game worlds, and virtual social worlds

2.2 Characteristics of Web 2.0 and Social Media

Web 2.0 is a term that was created to explain the change in which the internet and the characteristics that shaped how it was used to create and/or consume content had changed from Web 1.0. It may be perceived as a catchphrase and dismissed as hype, but it is indeed important to understand the principles behind it. O'Reilly (2005) lists seven aspects of the Web 2.0, of which three are important and relevant to this research. The

first is the idea of the collective intelligence. Web 2.0 and social media is not a vacuum; a website only exists if it is hyperlinked by others, ranks high on Google search results. E-commerce websites such as Amazon or eBay are successful not only because a lot of people make purchases through them, but the same consumers also write reviews, rank items and influence other users, create a community outside of the (but connected to) the organization. The culture of Web 2.0 relies on all users, and their participation: the collective opinion of amateur professionals creates a more reliable assessment than those of one or two experts. This phenomenon is also dubbed the *wisdom of crowds* (Surowiecki, 2004).

The second characteristic of the Web 2.0 is that most platforms are heavily data-driven. (O'Reilly, 2005) Data is one of the most important assets and currencies of the Web 2.0. Applications such as Google search engine, websites such as Amazon and eBay rely on special databases, and collect personalized data from searches, previous purchases as well as demographics. Social media platforms such as Facebook are scrutinized for collecting user data and using this to attract third parties.

A rich user experience is the third characteristics of the Web 2.0. These experiences are created through not only easy to use, user-friendly interfaces or websites (such as Gmail revolutionalizing free email services), but also through seeing the user as a co-developer (O'Reilly, 2005). This is echoed by Ellis and Kelly (2007): Web 2.0, and social media, "put **users** and not **the organisation** at the centre of the equation" (original emphasis).

Another concept that has arisen with social media is the *participatory culture.* Participatory culture is defined by Jenkins et al. (2009) as "a culture with relatively low barriers to artistic expression and civic engagement, strong support for creating and sharing one's creations, and some type of informal mentorship whereby what is known by the most experienced is passed along to novices." Additionally, in the participatory culture, participants feel that their contributions matter in one form or another. Participants also care about what other participants think of their contributions, thus creating a kind of social connection. The key is that not all participants have to contribute, but all have to feel free to do so. (2009:7)

Jenkins et al. continue to define forms of participatory culture:

> **Affiliations** - memberships, formal and informal, in online communities centered around various forms of media, such as Friendster, Facebook, message boards, metagaming, game clans, or MySpace).
>
> **Expressions** - producing new creative forms, such as digital sampling, skinning and modding[6], fan video-making, fan fiction writing, zines[7], mash-ups[8]).
>
> **Collaborative Problem-solving** - working together in teams, formal and informal, to complete tasks and develop new knowledge (such as through Wikipedia, alternative reality gaming, spoiling).
>
> **Circulations** - Shaping the flow of media (such as podcasting, blogging). (2009:3)

These forms and principles of participatory culture apply to social media platforms and applications, and to all users as well as all institutions that use these platforms. Institutions who aim to utilize social media to its full potential need to keep the above-mentioned principles and forms in mind when setting up social media accounts and drafting their strategies.

2.3 Overview of social media platforms

Before taking a closer look into existing research on museums and how they can utilize social media, a short overview of different social media platforms is beneficial. In this section, each social media platform relevant for the purposes of this research will be introduced. Information on other important social media platforms mentioned in this research can be found in the Glossary.

---

6 'Skinning and modding' are the practices of modifying the appearance or function of existing software.

7 A 'zine' is an abbreviation of fanzine, or magazine and refers to small circulation publication of texts and images.

8 A 'mash-up' is a song or composition created by blending two or more pre-recorded songs.

Museums can utilize many of the social media applications mentions earlier in the categorization of Kaplan & Haenlein. Below a few of these platforms will be explained in detail, as they will be the focus of the design of this research.

Facebook is the most popular social networking website at the time of this research and have been adopted in high rates by cultural organizations including museums. Not much can be done without an account on Facebook; only profiles of users who have no privacy settings can be viewed without being logged in. Users create profiles under their real names, add their friends, "like" (i.e. join, subscribe, see Glossary) pages (of musicians, TV shows, museums or pages created by other users) to follow their updates. Each user can write status updates, upload or share photos and videos, tag their friends in posts, play games developed to be played on Facebook, use external applications and message their friends.

Organizations such as museums can create Facebook Pages for their brand, which behaves similar to regular profiles, but have additional features such as statistics on 'fans' (users who follow the page by clicking on the Like button) and demographics of these users. Each post of a Facebook Page can be either liked, or shared or commented on by the fans of the page. Museums tend to share information about their upcoming exhibitions, newly acquired objects, lesser-known items from their collections as well as news related to their area of focus.

Figure 1: MoMA Facebook Account: A post with 168 'likes', 34 shares and 9 comments.

Twitter is a micro-blogging website, which is becoming more and more popular across different types of users, including museums. On Twitter, accounts of users can be accessed without logging in, but to "tweet", one must have an account. Each user can write updates and share others' updates (by retweeting – see glossary). Each update is limited to 140 characters, although additional websites and applications exist to be able to tweet longer (such as Twitlonger - http://www.twitlonger.com/). It is possible to create a

protected account, in which case the tweets of the user will only be visible to the accounts that the user follows/has given access to.

Figure 2: Tate (UK) Twitter Feed: A Tweet with Retweet and Favorite count and a Mention by @CGLawyers.

Museums use Twitter for a variety of purposes. Aside from advertising upcoming events and exhibitions, museums tweet about the objects in their collection, do promotional contest for free tickets or tweet historical facts such as Tate Modern tweeting about John Constable's birthday (Figure 2).

In addition to social networking platforms, museums also utilize content communities. One of these is YouTube – a content community for videos. On YouTube, users can watch uploaded videos without creating an account. Without an account, users can also share videos on other websites, embed videos to their own blogs or websites, and rate

videos (thumbs up or thumbs down). An account is needed to upload videos to the community and to comment on videos. Users with accounts can also subscribe to the channels of other users to easily follow each new video published by that user.

Museums use YouTube accounts to upload their videos of interviews with curators, experts and artists, as well as the development of their commissions. The videos are sometimes educational and occasionally fit under edutainment. Most of the videos are embedded on their websites, but can be separately viewed and followed on YouTube.

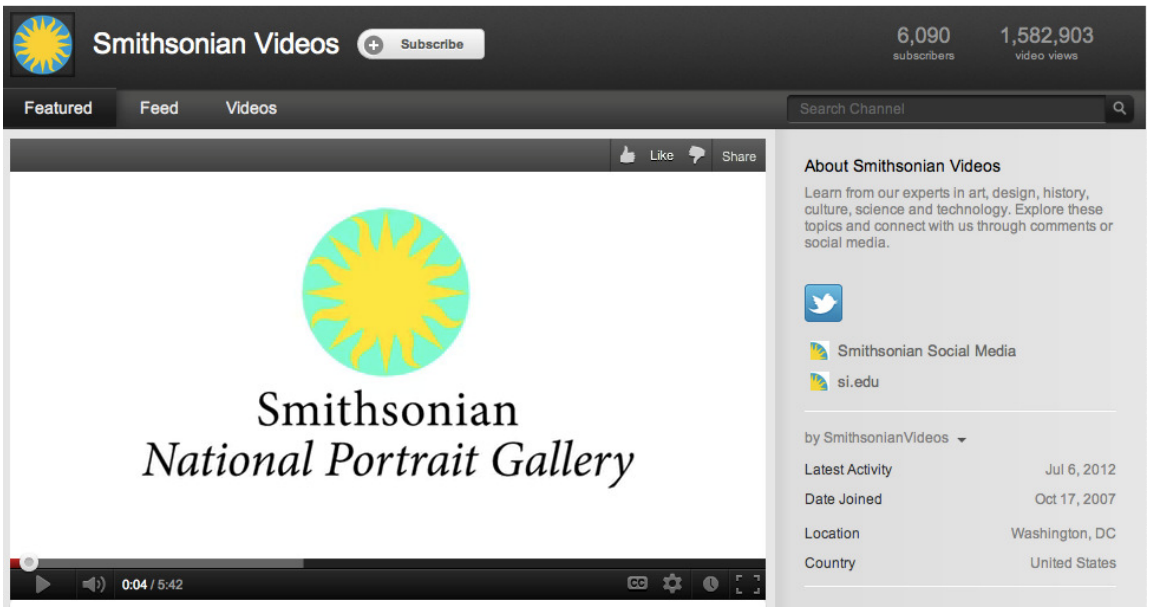

Figure 3: Smithsonian Institute Youtube Account with 6000 subscribers and 1.5 million views.

Another important content community that museums utilize is FlickR for photography. Similar to YouTube, users can search for photographs, browse profiles of users, groups and tags, and share photographs without creating an account. To upload photographs, to favourite photographs of other users, to friend other users and join groups and to comment, an account is necessary. Each photograph can be tagged by the user who uploaded it, which is then searchable under that tag to all users of FlickR and all visitors of the website. FlickR is heavily used by amateur experts who purchase FlickR pro to get more options (no upload limits etc.) and by enthusiast. For amateur experts, FlickR accounts are usually used as a portfolio. For museums, however, the use is diverse and there seems to be no standard. Some museums create a group for other users to upload

their pictures (from events or exhibitions) while others have their own accounts where they post photographs taken by their own photographers.

Though not included directly in this research, Instagram is a free photo-sharing application for mobile phones that is quickly becoming popular among users and museums. Similar to Twitter, users can follow each other's photos on Instagram, as well as comment to photos and like them. Each photo can be geo-tagged (similar to checking in to foursquare (See Glossary)) as well as cross posted to other platforms such as Twitter, Facebook and foursquare itself. Museums use Instagram to post photographs related to upcoming projects and exhibitions, including the building process of upcoming installations.

Figure 4: Brooklyn Museum posting a photo on a new project on Instagram.

Similar to Instagram, Pinterest is another upcoming social media application focusing on images. Pinterest is a photo sharing website which uses the pinboard style. Users can create an account; create boards and post pictures onto these boards. Users can follow other users (all of their posted photos) or single boards created by a user. Users can 'like' photos, as well as comment and 're-pin' – post the photo onto their own boards. Pinterest discourages self-promotion, and encourages sharing photos and images of others that users enjoy, but several museums have accounts wherein they show images of their own

collection and information on the items. Museums also create boards that are related to their area of focus, re-pinning related imagery from fellow Pinterest users.

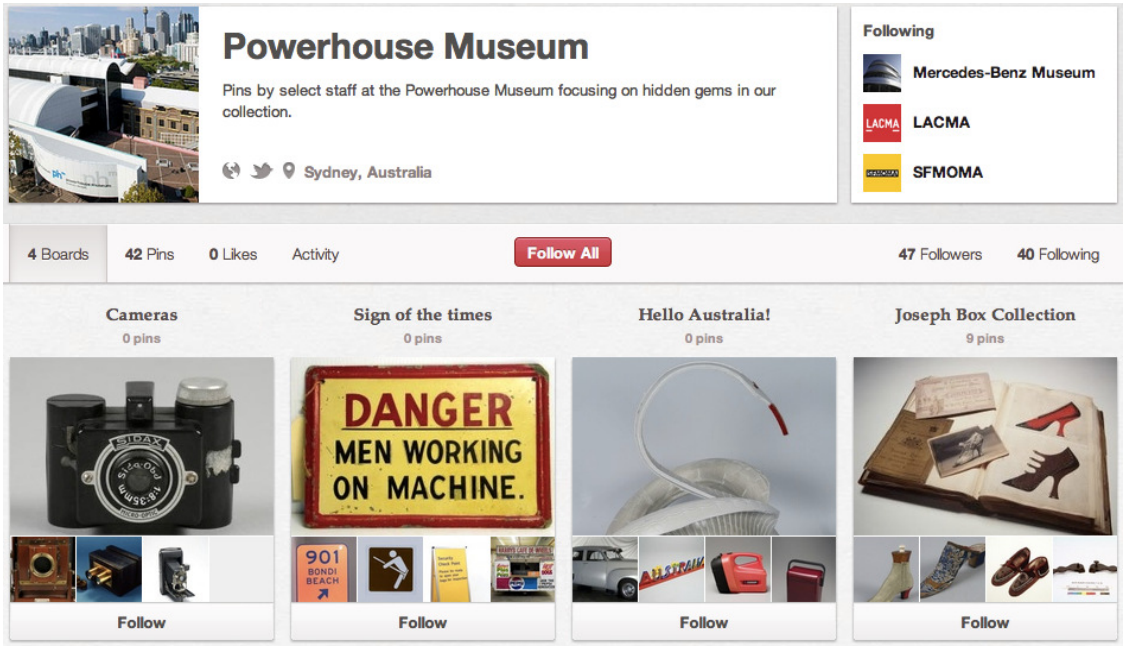

Figure 5: Powerhouse Museum of Sydney, Australia on Pinterest, curated by museum staff.

While Instagram and Pinterest are becoming popular globally and within museums, these applications have not yet become must-haves for these institutions at the point of this research. While some museums in the research sample do have Instagram and Pinterest accounts, they are the early adopters and do not provide enough information which can be generalized.

In the following chapter, the relationship of museums to social media will be examined in more detail, focusing on academic research in this area from a variety of disciplines. The focus will not be on how each social media tool is being utilized by museums, but a general relationship of museum activities, visitor relationships, and the roles museums can assume on social media.

III. Museums and Social Media

Many social media tools and applications have gained popularity among cultural institutions in a bid to get more audiences and visitors as well as to engage existing ones. Facebook and Google+ are swarming with corporate pages of museums, Twitter connects these museums to each other and to an international follower-base and more and more museums are faced with the decision to use yet another upcoming web-based application (such as the photography focused new-comers Pinterest and Instagram). However, as with any new technology, "the risk is that (museums) do these things just because (they) can, or because everyone else is doing them, or even more dangerously, because it attracts funding. These are not good reasons for 'doing' Web 2.0" (Ellis & Kelly, 2007). If not for following trends or funding, then the question is why adopt to new technologies at all? It is "possible to stimulate interaction between cultural organization staff and visitors and thus increase the possibilities for strengthening consumer relations" (Musumeci, 2002:107).

Museums and social media is an interesting research area, though existing research comes predominantly from museum studies and communication studies. Even though cultural economics has provided a fresh perspective on museums, literature that explores adoption of new technologies from an economic perspective is scarce. This third part of the thesis will reflect on existing literature about museums and social media from all disciplines in order to set up the theoretical framework for this research.

3.1 The authority of the museum on the democratized Web 2.0

Web 2.0 and social media operate in an "architecture of participation" (O'Reilly, 2005): websites which used to give information to the user in Web 1.0 have shifted their focus from this passive way of consuming a website to an active involvement (Simon, 2007b). Web 2.0 relies on the participatory culture as defined by Jenkins (2009). This, in return, is contradicting the historical nature of the museum as "the authority". Museums are used to exhibiting their collections in a way that is passive for the user, the user listens to the audio tour or reads the characteristics of each piece, and they are shown the collection according to the experts' view of how it should be exhibited. This way of

communication, called "one-to-many" communication (Russo, Watkins, Kelly and Chan, 2008:23) creates a friction with the social and democratic nature of Web 2.0, which is a many-to-many model communication. Nina Simon sums up these frictions eloquently in three points:

> 1. Museums are designed spaces; Web 2.0 platforms are open to all kinds of user designs, even intentionally ugly or uncivil ones.
>
> 2. Museums launch exhibits in a "completed" state; Web 2.0 content is always changing.
>
> 3. Museums rely on authorities: curators, researchers, designers, educators. Web 2.0 relies on users, who grant each other authority at will. (2007b:259)

Despite these frictions, many museums are on Web 2.0 platforms, and try to engage their visitors and potential audiences. Further literature brings some interesting insights to what is important for a meaningful presence on Web 2.0 platforms. The following subchapters will review existing literature to identify how different perspectives dealt with the subject and in what way their findings can shape how this research will survey Dutch and Turkish museums and their Web 2.0 presence.

But how can then the museum exist within the principles of social media without giving up its mission? Russo et al. suggest to use the curatorial knowledge of the museum "as a hub, around which an online community of interest can build". (2008:23) In a sense, it requires a switch from one-to-many broadcasting of knowledge, but a many-to-many network with the museum's expertise at the centre.

A second model for the museums existence on social media is the transition of museums as authority figures to authenticity. One of the challenges which arises from social media and the many-to-many catering of Web 2.0 is the reliability of information found on the internet. As opposed to peer-reviewed publications, blogs are free of validation, thus provide information, which is easy to find but hard to validate. This challenge provides an opportunity for museums: Trant suggests: "Cultural heritage institutions have to ensure that the information they make available is the best that it can be, and they must

also help others to develop the ability to recognize quality when they see it, and to interpret meaning from electronic information." (1999:122) Russo et al. concur, arguing that the museum should engage in social media in order to provide authentic cultural content in this environment of many-to-many communication, where everyone has an opinion or provides some type of information. (2008) Thus, a mission for the museum is to keep a casual voice on social media applications and provide authentic information and become a known and accepted source of reliable expertise.

3.2 Different levels of engagement

There are a large amount of museums, which have profiles on social media applications such as Facebook, Google+ and Twitter. These platforms are the most popular in the world, thus the most visible. The presence of museums in smaller platforms or specialized platforms such as FlickR, combined with the popular ones, create a large pool of potential internet users who might become future visitors. However, each museum utilizes these platforms in a different way.

Kidd (2011) uses the framing method to categorize social media use of museums under three frames: (1) the Marketing Frame, (2) the Inclusivity Frame and (3) the Collaborative Frame. (2011: 67) The Marketing Frame is the easiest frame to achieve and also the standard way for any museum (or other institution) to operate on social media platforms. It is a continuation of the already existing paper and online marketing activities of the museum, giving the museum a "face". (2011:67)

Most museums claim that they operate on social media platforms because these are tools to help improve and sustain existing communities around their institution. (Kidd, 2011:69) Under the Inclusivity Frame, the museum operates to involve users in a participatory environment built around the physical museum. This can be realized by comments on the museum blog or social networks.

The most complicated and hard to achieve is the Collaborative Frame, which aims to create an environment where users can co-produce. Kidd (2011) gives story-making and crowd-sourcing as examples of such activities. However, it is harder to find examples of these, even though this type of collaborative mode captures the essence of social media:

active users, generating content in a collaborative milieu. Simon echoes the importance of this: the "Holy Grail of social discourse (is) where people interact directly with each other around content". (2007a)

While all levels of engagement are important and useful to the museum's various missions and goals, Russo et al. contend that audience interaction and engagement (in Kidd's Inclusivity and Collaboratives frames) also strengthen museum authority. (2006:4)

3.3 Different types of Web 2.0 users

Not everyone online behaves the same way. Younger people use social networks differently than their parents; they may also be more open to commenting or answering questions online. It is important for the museums to know (a) how the general public spends their free time (and how much free time they have) as well as (b) know what the online public that is likely to visit the social media platforms of the museum does online. Burton & Scott (2003) look at the Australian consumers' free time and their planning, and categorize them into several groups such as leisure achievers who plan their free time to use it most efficiently, double-up consumers who choose activities that address several experiences in one and spontaneous consumers who decide day-by-day how to spend their free time among others. (2003:65) This type of research is useful to a museum regardless of their Web 2.0 activities, but can help the institution in addressing already busy potential consumers according to their leisure habits.

More importantly is the type of online behaviour by demographics. There is quite some research done on categorizing online audiences into meaningful and useful divisions. Green & Hannon (2007) divide young online audiences in the UK into four categories:

- "Digital pioneers were blogging before the phrase had been coined
- Creative producers are building websites, posting movies, photos and music to share with friends, family and beyond
- Everyday communicators are making their lives easier through texting and MSN

- Information gatherers are Google and Wikipedia addicts, 'cutting and pasting' as a way of life." (2007: 11)

In the US, Forrester Group has done an extensive research to categorize online behaviour, which proposes the following types of users:

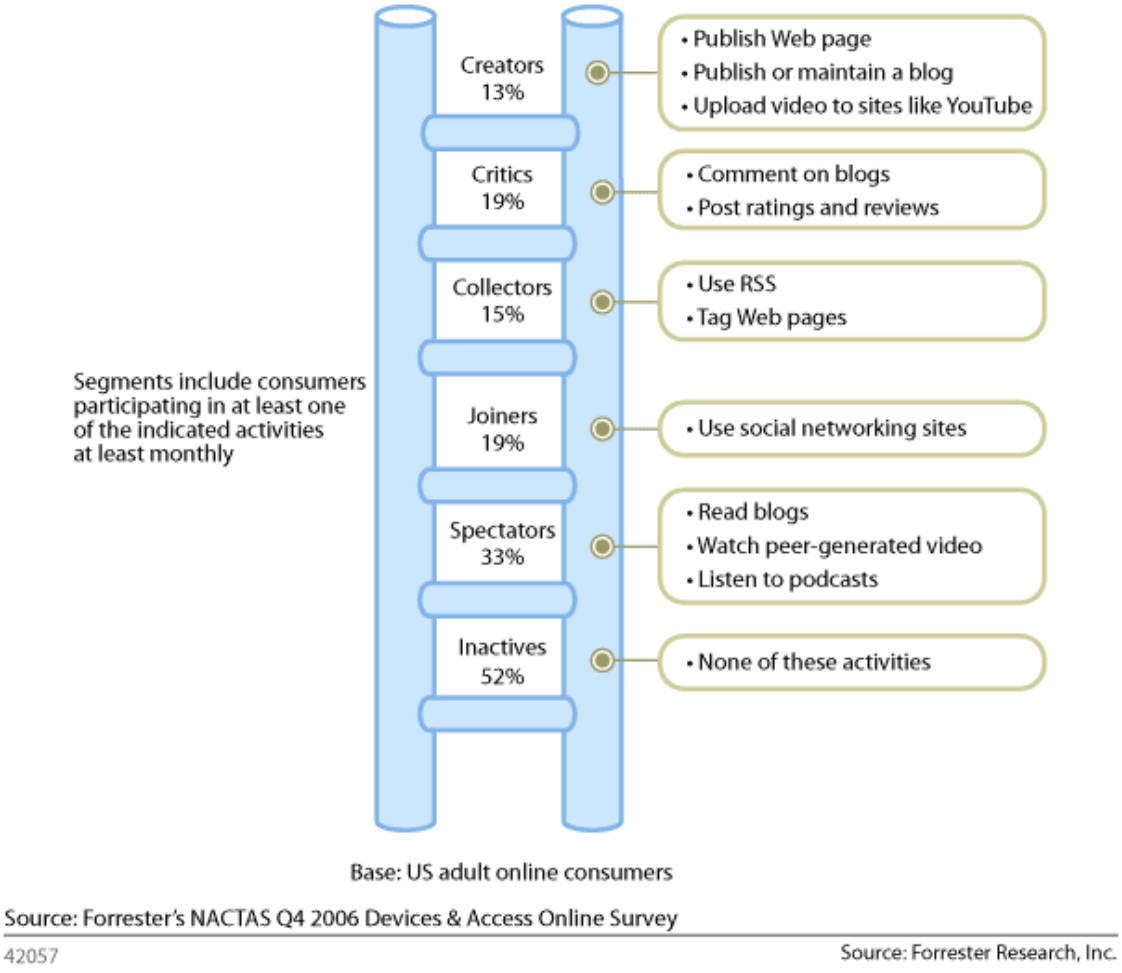

Figure 6: Categorization of Consumers by Forrester Research

These categorizations can be utilized by museums to match their existing or target audiences with their activities online. Kelly & Russo (2008) is a solid example of how this type of research can be applied to the museum sector. In their research which is similar to the Forrester Groups 2006 research in the United States, Kelly and Russo (2008) first find out what Australian internet users are doing online: from watching videos to listening to podcasts to commenting on blogs. They continue with checking this

data against museum visitors to see if museum visitors' online activities differ from the general population. This kind of data is infinitely valuable to museums to reach their full potential in online activities. Combined with Jenkins' (2008) participatory culture forms, the types of users and their demographics can help museums set up the appropriate channels as well as focus on the most important topics where they can assert themselves as the authentic information hub.

IV. Methodology

This chapter discusses the methodology used in this research – website (content) analysis – and how the research design is set-up. As the research design depends heavily on the main research question, this chapter will start with the formulation of the question, followed by the research design and choice of methodology.

4.1 Research Question

This research aims to compare the adoption and use of social media by museums in Amsterdam and in Istanbul. It intends to find an explanation of adoption rates in different types and contexts of museums. Examples of such types of contexts include but are not limited to contemporary art museums vs. science museums, large vs. small museums, state-funded vs. donation-dependent museums.

To get to these results, the research question is formulated as

What similarities and differences exist in audience participation in social media in Dutch and Turkish museums?

In order to answer this question, several other questions need to be answered: To what extent have different types of Dutch museums adopted different social media applications? To what extent have different types of Turkish museums adopted similar applications? How does social media adoption vary by museum type or by funding scheme?

4.2 Research Design

The research question indicates a quantitative research strategy. Considering the time constraints of this M.A. thesis, the ideal methodology is a website content analysis of museums located in Amsterdam and Istanbul (see Research Sample for the museums in the sample). Even though the research question aims to find out similarities and differences in Dutch and Turkish museums' adoption of social media, within the time constraints of this thesis all the museums in these two countries prove to be too broad of a sample. To be able to have a comparable sample, Amsterdam and Istanbul – the two biggest cities and the cultural hubs of the respective countries – have been chosen as the

geographical focus. The sub-chapter on the chosen research sample features museums of different types, sizes and funding schemes from these two metropolitan areas.

To get meaningful results to the research question, the researcher needs to look into a large number of museums for quantitative data relating to social media activity of each museum. The ideal place to gather this information is on the World Wide Web, where the said activity takes place. The following section describes in detail the advantages of the chosen methodology and how it works.

4.3 Website (Content) Analysis

Content analysis is a social science research technique "for making inferences by objectively and systematically identifying specified characteristics of messages". (Holsti, 1969:14 in Bryman, 2008:274) Website content analysis simply takes this to the World Wide Web, and refers to analyzing website content to gather data. In addition, it is an objective and transparent method (Bryman, 2008) and feasible within the timeframe of this research.

Website content analysis is a method mostly used in social sciences, where documents can be objectively and systematically coded. Additional to these characteristics "it is unobtrusive, it accepts unstructured material, it is context sensitive and thereby able to process symbolic forms, and it can deal with large volumes of data." (Krippendorff, 1980 quoted in Hashim, Hasan & Sinnapan, 2007) Despite its objective and quantitative nature, it has not been a popular method so far in the field of this research. To the best of the knowledge of the researcher, the method of website content analysis has not been applied in the cultural economics field, and has not been applied to compare two museum sectors. The method, in addition to the advantages of the analysis itself, is also a novel application into the field of this research.

Most of the website content analysis examples are from the research fields of communication, e-commerce and branding, where World Wide Web is the method of communication and interaction. In this sense, the methodology is perfect for this research, as the use of social media is a way for museums to communicate with their various audiences on the World Wide Web.

The methodology works on the following principle: websites (of museums) are treated as documents to be coded and counted. While website content analysis is done by counting several categories of units such as words, subjects or themes, actors involved or dispositions (Bryman, 2008:282), this research will use the existence and adoption of certain social media platforms as well as count and calculate ratios to measure engagement. What is counted is directly related to the research question, and is translated in to a coding code. This research will count the existence of social media tools on the first level of the Kidd Framework (Marketing), the interactivity with audience within those tools on the next level (Inclusivity) and the special projects on the third level of the Kidd Framework (Collaborative). For a detailed break-down of which variables are measured under which framework, please refer to the Operationalization sub-chapter below.

The more traditional version of the methodology, content analysis, has been used for a variety of social science research, ranging from gender roles in cartoons (Davis, 2003) and newspaper articles on how crime is reported (Bryman, 2008). When it comes to website content analysis, one of the first and most important examples is by Philport and Arbittier (1997) on brand communication styles on the media and on the internet. Based upon this work, several researchers in different fields have applied the methodology. While Hashim et al. (2007) measured the interactivity of Australian newspapers online, Singh, Zhao and Hu (2003) have studied the cultural adaptation of American companies in regards to their Chinese websites. While previous research with similar methodology is a useful foundation for this research, there is no one framework it can be based upon, as the methodology will be used on a new field of research.

To use the website analysis, the following subchapters will explore each step of the measurement process. First, the research sample will be chosen out of all the museums in Istanbul and Amsterdam. A representative sample will need to be chosen; which will include at least one of each type of museum existing in the city, museums from different funding schemes (public and foundation museums) and different size of museums. In addition, the size of the sample should be acceptable for the standards of quantitative research.

Once the sample is chosen, the next step is to define "what needs to be counted." (Bryman, 2008) A section will be dedicated to the operationalization of the methodology; key concepts that will be measured will be defined, with explanations of how to measure them, in order to make the coding process transparent. This section will also include the coding manual, which will provide an overview of all variables and their characteristics.

The counting – the coding – will be transferred to a statistics software package – SPSS, which will provide the statistical relationships among the variables. This will be discussed in the Results Chapter (Chapter V).

4.4 Research Sample

This section gives an overview of the research sample, which consists of a list of 56 museums from Istanbul and Amsterdam. The following museums have been chosen to reflect a variety of sizes, types and funding schemes in accordance with the aim of this research. The following list provides an overview of the type of each museum to give a clear idea of the variety in terms of museum type.

ISTANBUL		
1	Arkeoloji Müzesi	History / Archeology Museum
2	Askeri Müze	History / Military Museum
3	Aşiyan Müzesi	Historic Site / History Museum
4	Ayasofya Müzesi (Hagia Sofia Museum)	Historic Site
5	Beylerbeyi Sarayı	History Site/Building
6	Borusan Contemporary Art (Perili Köşk)	(Modern) Art Museum
7	Büyük Saray Mozaikleri Müzesi	Specialized / Art Museum
8	Dolmabahçe Sarayı	Historic Site/Building
9	Deniz Müzesi	History (Maritime) Museum
10	Eczacıbaşı Sanal Müzesi	Virtual Art Museum
11	Enerji Müzesi – Santral Istanbul	Science / Technology Museum
12	Fotoğraf Müzesi	Specialized / Art Museum
13	Havacılık Müzesi	History (of Air & Space) Museum
14	Istanbul Modern	(Modern) Art Museum

15	İş Bankası Müzesi	Art Museum
16	Karikatür ve Mizah Müzesi	History Museum
17	Kariye Müzesi	Historic Site / History Museum
18	Mimar Sinan Ü. Resim ve Heykel Müzesi	Art Museum
19	Oyuncak Müzesi	Children's Museum
20	Pera Müzesi	Art Museum
21	Rahmi M. Koç Sanayi Müzesi	Science / Technology Museum
22	Rezan Has Müzesi	Art Museum
23	Sadberk Hanım Müzesi	Science / Technology Museum
24	Sakıp Sabancı Müzesi	Art Museum
25	Salt Institute Beyoglu & Galata	(Contemporary) Art Museum
26	Topkapı Sarayı	Historic Site/Art Museum
27	Türk ve Islam Eserleri Müzesi	History / Art Museum
28	Yapı Kredi Vedat Nedim Tör Müzesi	Art Museum

Table 1: List of museums in the research sample from Istanbul

Below is the research sample from Amsterdam. It includes the superstar museums of Amsterdam such as the Van Gogh Museum and the Rijksmuseum, but also smaller, lesser-known museums such as the Pianola Museum and the Verzetsmuseum (The Museum of the Dutch Resistance).

AMSTERDAM		
1	Allard Pierson Museum	Archeology Museum
2	Amsterdam Museum	History Museum
3	Anne Frank Huis	History Museum
4	De Appel	(Modern) Art Museum
5	Eddie the Eagle Museum	Art Museum
6	EYE - Filmmuseum	History (Specialized) Museum
7	FOAM – Fotografiemuseum Amsterdam	History (Specialized) Museum
8	Geologisch Museum Artis	Natural History Museum
9	Hermitage Amsterdam	Art Museum

10	Het Scheepvaartmuseum	History (Maritime) Museum
11	Joods Historisch Museum	History Museum
12	Koninklijk Paleis	Historical House / Site
13	Mediamatic Bank	(Modern) Art Museum
14	Museum Van Loon	Historic House / Site
15	Nederlands Instituut voor Mediakunst	History Museum
16	NEMO	Science Museum
17	Oude Kerk	Historical House/Site
18	Persmuseum	History Museum / Specialized
19	Pianola Museum	History Museum / Specialized
20	Rembrandhuis	Historic House/Site, Art Museum
21	Rijksmuseum	Art Museum
22	Stedelijk Museum	(Modern) Art Museum
23	Tassenmuseum Hendrikje	History Museum / Specialized
24	Theater Museum (TIN)	History Museum / Specialized
25	Tropenmuseum	Anthropological Museum
26	Van Gogh Museum	Art Museum
27	Verzetsmuseum	Military History Museum
28	Willet Holthuysen	Art Museum

Table 2: List of museums in the research sample from Amsterdam

In addition to the list of the research sample, Appendix I provides more details about the age, size and collections of the chosen museums.

4.5 Operationalization

As explained above, website content analysis is performed by gathering data (counting words, phrases or themes) in a document (in this case the websites of the museums). However, the analysis of the data requires the definitions of the control variable as well as dependent and independent variables, so that the outcome of the results is meaningful and can be interpreted correctly.

While the research will explore the differences in audience participation in social media within museums of the biggest cities of the Netherlands and Turkey, it will also try to identify the reasons for these differences. Hence, data will need to be collected on the characteristics of museums. The size of the museum will be the control variable – as bigger museums may be more inclined to be on social media because they can afford it more easily. On the other hand, another hypothesis can be that small museums are more innovative and thus adopt more quickly. The size of the museum can be measured in two separate variables. First method is to measure the number of employees in the museum; second method is to use the number of visitors to the museum last year (in 2011).

Following the control variable, all other museum characteristics will be independent variables: (1) type of museum (historic site/building, art museum, history museum, children's museum, etc), (2) funding scheme of the museum (state museum, foundation museum or mixed funding) and (3) location for comparison (dichotomous: Amsterdam or Istanbul).

Using Kidd's (2011) three frames, other variables related to social media activity will be measured. However, these frames need to be translated into measurable concepts first. The first of the three frames, the Marketing Frame, refers to the marketing activities of the museum on social media platforms apart from its traditional marketing techniques. The most popular examples of such use of social media are exhibition information, upcoming events and announcements made on Twitter, Facebook. Twitter resembles more one way marketing, as interaction between the museums Twitter page and a follower is not visible to a third user on Twitter. Interaction on Facebook is more public, though it depends on privacy settings.

The second frame, the Inclusivity Frame, focuses on "build(ing) and sustain(ing) communities of interest around an institution". (Kidd, 2011:69) This frame is measured by the existence of a museum blog, YouTube and Flickr accounts on the first level. However, the importance in this frame lies not only on the existence of these accounts, but on the activity and interaction with the museum community. Thus both the existence of these accounts and audience participation on these platforms need to be measured under the Inclusivity Frame.

This interactivity is measured for each social media platform separately. While we can measure the visibility of the accounts by the number of following the account (number of followers for Twitter, fans for Facebook, subscribers for YouTube and Flickr), measuring engagement requires other data. Dana Allen-Greil (2012) suggests using the conversation ratio; which is calculated by the total number of mentions over the total number of tweets sent. Additionally, another way to measure engagement according to Allen-Greil is the conversion ratio; what percentage of the people who engage in Twitter conversation click through the museum's website. This is not measurable by third parties who do not have access on website analytics of the museums. The third method to calculate engagement is through percentage of (unique) users who retweet, which can be measured by a third party.

Similarly, Facebook Page interaction can be used by calculating two ratios. The first is the amount of comments on a post over the number of total posts in a short timeframe. The second is the amount of likes or shares over the total number of posts in the same timeframe. From observation, it is quite clear that likes can be automatic and not very meaningful in terms of interaction, though it is a quantifiable measure. Instead, the number of people who are a 'fan' of the Facebook page (rather than the number of people who like each post) will be taken into account as a visibility measure and the comments ratio as an interaction measure.

The final frame is the Collaborative Frame, which is mostly referred to as the concept of co-creation in social media literature. This frame does not refer to one social media platform, but to a vaguer concept of projects museums undertake that require collaboration with the museum audience. This can range from museum visitors evaluating an exhibition to choosing pieces to be exhibited, or submitting stories or their own creation to a project.

Having defined measurable concepts from the three frames of social media, a coding manual is necessary before the next step of collecting the data. Below is the coding manual of the concepts.

4.5.1 The Coding Manual

Concept	Dimension	Operationalization	Code
Museum Characteristics			
	Name of museum		Name
	Place of museum		Dichotomous 0=Istanbul 1= Amsterdam
	Kind of museum	Type of museum	0. Art Museum 1. Children/Youth 2. Historic Site 3. History Museum 4. Natural History/Anthropology 5. Science & Technology 6. Archaeology
		Income of museum	0 = Public/State 1= Foundation 2= Mixed
	Size of museum	1. Number of people employed by the museum 2. Number of visitors in 2011	Open
Marketing Frame (Visibility)			
	Adoption of social media platforms for marketing purposes	Twitter Facebook Google + Museum blog Flickr Account	Each dichotomous 0= doesn't have it 1= has it
		Twitter followers Facebook fans	# of Twitter followers # of Facebook fans
Inclusivity Frame (Interaction)			
	Existence of social media / new media that enable visitor interaction	Youtube subscribers	Open
		Facebook interaction ratio (# of FB comments/# of FB posts)	Open
		Twitter1:	

		Retweet/Follower ratio	Open
		Twitter2: Conversation Ratio (# mentions / # of tweets)	Open
		Museum blog comments	Dichotomous (0=No comments, 1= there are comments)
Collaborative Frame			
	Existence of projects that require visitor/user content	Co-creation (# of projects identified on the website)	Open

Data collection for some of the variables has been restricted in a closed time frame to ensure fair data collection. The three variables under the Inclusivity Frame; Facebook interaction, Twitter interaction and Twitter dialogue have been constrained in time as follows:

- Facebook interaction: The number of comments to each Facebook post was measured for the time frame January 1 to April 30th of 2012. This ensured collecting enough data from museums, which post less frequently than others.
- Twitter interaction: The number of retweets over the number of total Twitter followers was measured for the month of April 2012.
- Twitter dialogue: The number of mentions to each tweet over the number of total tweets was measured for the month of April 2012. The time period of one month for Twitter was necessary, mainly due to the fact that Twitter does not keep a long-term cache of Tweets and it was impossible to take a four month period as with Facebook. However, the one-month provided enough data for the calculations.

4.6 Limitations of Chosen Method

As with any method, using website content analysis to compare audience participation in social media between two museum sectors comes with its drawbacks. Even though the method is unobtrusive and objective, it highly depends on well-organized websites and well-identified (official) social media accounts of the museums.

One major drawback of the method is that not every museum links to their official social media platforms on their website. This may be due to failing to frequently update the website or not deeming it necessary. Other than losing time to confirm whether there is a Facebook page or Twitter account for the museum, this lack of linking can be problematic when there are two accounts with similar names for the museum, for example on Facebook. Although not a common situation, it is possible to have a Facebook page for 'Museum of Modern Art' and a separate page for 'MoMA', with only one of the pages being the official Facebook page for the museum. Thus, if a social media account is not linked from the official website of the museum, verification will need to be sought before including social media platforms in the research.

In a similar fashion, if a museum does not have a website, this also becomes problematic. While not having a website is a data in and of itself regarding the innovativeness of the museum in the digital realm, it still proves problematic for the research.

Another challenge of this methodology is the fact that it can measure the audience participation in social media sphere of museums, but it cannot give any indication of the meaningfulness of the participation. When measuring the conversation ratio of Twitter, website content analysis will provide statistical trends in terms of type or funding of museum and audience participation, but all these tweets could be saying that users visited a museum that day and nothing further. In that regard, the results need to be interpreted carefully, keeping in mind these limitations.

4.7 Expectations

Given the existing theory on economics of museums, social media frameworks and knowledge on the museum sectors of the focus countries, one can already form several hypotheses to be tested.

Hypothesis 1: *Full state support stalls innovation and the use of new technologies in the museum.*

The first hypothesis focuses on the funding of the museums. This statement, based on Frey's (2006) analysis of institutional form and behaviour, claims that receiving full support from the state would remove all incentive from the museum management to attract more and more visitors, to improve facilities, as well as to innovate to keep itself competitive among other museums. On the other hand museums which need to have a certain amount of own-income (private foundation museums as well as mixed-funding museums) need to continue attracting visitors as well as donations (and occasionally supporting subsidies) and thus need well-maintained facilities, frequent exhibits and other events to attract new visitors.

Social media can be seen as one of the tools to attract new visitors and engage existing visitors. This can be done by engaging with visitors on social media platforms to ensure that these visitors come back to the museum, or get involved on a deeper level (e.g. become patrons, donors). Public museums with full state support are not a common concept in the Netherlands, as seen in Chapter 1, thus this will have an effect on the overall comparison of Istanbul and Amsterdam.

Hypothesis 2: *Small museums use social media and new technologies as a way to compete with larger museums.*

The second hypothesis relates to the size of the museum. Similar to funding affecting the behaviour of the museum management, the size of the museum should also have an effect. Smaller museums (compared to superstar museums such as the Van Gogh Museum) need to have a competitive edge to support themselves and put their museum on the map to be able to attract visitors. Thus, it could be expected that smaller museums would use social media as a means to innovate different ways to engage with the public and attract visitors and supporters.

Competition among museums can take many shapes, ranging from financial competition for limited public funds and individuals who might donate, to the visitor numbers, convincing visitors to visit their museums as opposed to another one (Johnson & Thomas,

1998). While there is a clearer connection between using social media and improving visitor numbers and attracting visitors, it is a more indirect way to attract funding. But for public funding, museums can and do include their communication and audience outreach strategies in their subsidy applications and reports, hence being able to show that they have high visitor interaction ratios on social media can justify the funding for the museum's activities.

Hypothesis 3: *The location of the museum makes a difference in social media use: Amsterdam within the framework of a more developed museum sector has higher dialogue ratios on social media platforms than Istanbul museums.*

The overview of Dutch and Turkish museum sectors in Chapter 1 presented the different stages of development of both sectors, especially the more recent development of the modern museums in Turkey. Considering the later development of the Turkish sector and adding the amount of fully funded state museums in Turkey, it would be logical to expect that Amsterdam museums use social media not only on Kidd's Marketing Frame but also on the Inclusivity Frame.

V. Results

This chapter will provide an overview of the statistical results from the data collected according to the coding manual laid out in the previous chapter. It is structured as follows; first a summary of the observations made during data collection will be presented, followed by descriptive statistics to provide a clear picture of the research sample in terms of the researched variables. This will be followed by testing each of the hypotheses.

5.1 Initial Observations

Though not a continuous trend, there are some extreme cases of small museums being quite engaged on social media platforms. One of these examples is the Eddie the Eagle Museum in Amsterdam, which has an exceptionally high rate of Facebook Interaction even though it is not on any other social media platform. Another small museum providing surprising data is the Istanbul Oyuncak Müzesi (the Istanbul Toy Museum), which is very active on Facebook as well as Twitter and receives high numbers of visitors every year, despite having a small team of employees under its wing.

Another observation regarding the data is the time frame, which was imposed on the interaction and dialogue variables for Twitter and Facebook. While it has been useful and could capture a fair picture of activity on these platforms, the time frame has also its disadvantages. In some cases, such as the EYE Film Museum in Amsterdam, April 2012 has been a month of increased activity as the museum reopened in its new building, resulting in a wave of promotion and dialogue with visitors as well as other museums. However, this kind of increased activity has not been common, and it should not affect the results too heavily.

In addition, collecting another variable proved to be not as straightforward. In the case of the variable "size of the museum", not all the information was available online. Whereas most Dutch museums have their Annual Reports (Jaarverslag) online, most Turkish museums do not make this information available to public on their website. To get the number of employees and the number of visitors, some additional resources (government and municipality reports) were used: Kültür ve Turizm Bakanığı DÖSİMM (2010),

Istanbul Büyükşehir Belediyesi (2011), Bakbaşa (2010) and Gemeente Amsterdam (2011). In rare cases where the information could not be found, the museums were contacted directly.

Moreover, during the data collection process, the variable for co-creational projects, projects which require user/visitor added content in a museum project, had to be omitted. The data collection process revealed no such projects in the museums researched during the time frame of the research, and had no relevance to the statistical analysis. This in itself is an interesting result, reflecting the difference of the state of the museum sectors in Turkey and Netherlands compared to for example the United States or the United Kingdom, where these projects are more common (e.g. Brooklyn Museum's *Wikipedia Loves Art* (Simon, 2010).

5.2 Descriptive Statistics

An initial look at the collected data reveals some general trends: The majority of the researched museums are art museums (24 out of 56), followed by history museums (17 out of 56). The museums also have a reasonable distribution of funding schemes, with the majority operating with mixed funding (own income, donations, sponsors and subsidies) (25 out of 56), followed by private foundation museums (18/56) and state museums (13/56). Geographically, most of the museums in Amsterdam fall into the mixed funding category, as most of them receive subsidies, donations as well as have a foundation supporting them. Most state museums, on the other hand, are located in Istanbul, where full state support is perceived necessary. In contrast to the state supported museums, most private museums in Istanbul are backed by private foundations of wealthy individuals and families, which comparatively need donations and subsidies less than the Amsterdam museums using the mixed funding scheme.

5.2.1 Public vs. Private Museums

Taking a closer look at state museums reveals that while some state museums have Facebook accounts, their social media adoption is limited to this platform. With even adopting only one platform, the user interaction for state museums is close to zero (see Table 4). Table 3 provides a comparison of social media adoption between different types of funding.

Variables	State Museums (N=13)	Foundation M (N=18)	Mixed Funding (N=25)
Twitter Account	0 have Twitter 13 do not	13 have Twitter 5 do not	19 have Twitter 6 do not
Facebook Account	7 have Facebook 6 do not	16 have Facebook 2 do not	23 have Facebook 2 do not
Google+ Account	0 have G+ 13 do not	6 have G+ account 12 do not	6 have G+ 19 do not
Blog	0 have a blog 13 do not	3 have a blog 13 do not	5 have a blog 20 do not
YouTube Subscribers	1 has YouTube 12 do not	8 have YouTube 10 do not	15 have YouTube 10 do not
Flickr Account	0 have Flickr 13 do not	8 have Flickr 10 do not	12 have Flickr 13 do not

Table 3: Social media adoption among different funding schemes of museums

Facebook Interaction	State Museums	Foundation Museums	Mixed-funding museums
Mean	.115	.695	2.4519
Median	0	.5378	.4905
Std Deviation	.416	.6397	3.6601
Variance	.173	.409	13.397

Table 4: Facebook Interaction variable compared among different funding schemes

Data from the research sample seems to confirm Frey's theory on state museums' lack of incentive to innovate as well as the first hypothesis of this research. Hypothesis 1: *Full state support stalls innovation and the use of new technologies in the museum.* Among the different funding schemes, state museums have the lowest adoption numbers for social media. Facebook is the one platform that state museums have explored. The reasons for this can be twofold: (1) Facebook is among the researched platforms the most popular one in terms of number of users registered, and (2) it is the easiest (e.g. time and resource consuming) in terms of content production. Platforms such as Flickr and

YouTube require specific content types (photography and videos), whereas Twitter requires short-form communication. Lower Google Plus account adoption also makes sense, as the platform lacks general user adoption (compared to rates of adoption for Facebook). Thus, it can be argued that the museums that are already on Google Plus are early adopters.

The initial data shows that state museums are behind on adopting social media platforms. However, even with some activity on Facebook, the interaction of state museums with other users when compared with the other funding schemes, state museums fail to reach foundation or mixed-funded museum levels. Table 4 compares the results of the Facebook Interaction variable, which show low levels of interaction in state museums.

The initial data suggests a clear lack of activity from fully state funded museums. However, it is important to know how much of the difference in adoption rates between foundation and mixed funding museums is random, and how much of it is significant for the purposes of comparison. Thus, independent t-tests have been performed on the adoption of Twitter and Facebook.

The first t-test concerns the adoption of a Twitter account. As the state museum variable for adoption of a Twitter account is constant (none of the state museums are on Twitter), the t-test is run to check if the difference of adoption between foundation museums and museums with mixed funding is a significant one. The Levene's test for homogeneity of variance shows no significance ($p=0.786$). On average the mixed-funding museums have adopted Twitter more ($M=0.76$, $SE=0.087$) than foundation museums ($M=0.72$, $SE=0.109$), however the t-test shows that this difference is not significant $t(41)=-2.7$, $p=0.786>0.05$. The effect size is 0.1547. (See SPSS Output 1.0)

Independent Samples Test								
		Levene's Test for Equality of Variances		t-test for Equality of Means				
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
Twitter Account	Equal variances assumed	0.293	0.591	-0.274	41	.786	-2.0006643	0.138
	Equal variances not assumed			-0.271	35.514	.788	-2.0006643	0.139

Independent Samples Test			
		t-test for Equality of Means	
		95% Confidence Interval of the Difference	
		Lower	Upper
Twitter Account	Equal variances assumed	-0.316	-.0.241
	Equal variances not assumed	-0.320	-0.245

SPSS Output 1.0 : Independent t-test for Twitter Account and Museum funding, State Museums omitted as Twitter Account is constant (=0) .

Similarly, foundation museums and mixed-funding museums were compared for the adoption of a Facebook account and mixed-funding museums have adopted in more (M=0.92, SE=0.055) than foundation museums (M=0.89, SE=0.076). The t-test shows that the difference is not significant t(41)=-0.339, p=0.736 >0.05 (effect size r=0.003).

Overall, t-tests for the adoption of the accounts show that the mixed funding museums do more with social media, however, the difference between the mixed-funding and foundation museums are not significant enough to draw conclusions.

5.2.2 Small vs. Large Museums

The second hypothesis, which was presented in the Expectations Chapter, is related to size of the museums. Two variables were created to measure size of the museum: number of employees and number of visitors (to the museum) in the previous year. To see if

smaller museums adopt more than larger museums, or if smaller museums can interact more than larger museums, correlations among variables were measured.

		Number of employees	Number of visitors
Zscore: Twitter account	Pearson Correlation	.249	.116
	Sig. (2-tailed)	.064	.394
	N	56	56
Zscore: Facebook account	Pearson Correlation	.206	.067
	Sig. (2-tailed)	.127	.626
	N	56	56
Zscore: # Twitter followers	Pearson Correlation	.075	-.045
	Sig. (2-tailed)	.679	.803
	N	33	33
Zscore: # Facebook fans	Pearson Correlation	.253	.000
	Sig. (2-tailed)	.093	.998
	N	45	45
Zscore: G+ account	Pearson Correlation	.242	.259
	Sig. (2-tailed)	.072	.054
	N	56	56
Zscore: Museum blog	Pearson Correlation	.204	-.055
	Sig. (2-tailed)	.132	.687
	N	56	56
Zscore: YouTube subscribers	Pearson Correlation	.024	-.032
	Sig. (2-tailed)	.911	.882
	N	24	24
Zscore: Flickr account	Pearson Correlation	.210	-.101
	Sig. (2-tailed)	.120	.459
	N	56	56
Zscore: Facebook interaction	Pearson Correlation	.661**	.540**
	Sig. (2-tailed)	.000	.000
	N	56	56
Zscore: Twitter 1: retweet/followers	Pearson Correlation	-.067	-.009
	Sig. (2-tailed)	.622	.947
	N	56	56
Zscore: Twitter 2: mentions/tweets	Pearson Correlation	.409**	.003
	Sig. (2-tailed)	.002	.982
	N	56	56

Zscore: Blog comments	Pearson Correlation	.313*	-.038
	Sig. (2-tailed)	.020	.783
	N	55	55

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Table 5: Bivariate correlation table for all variables and size of the museum.

As Table 5 demonstrates, the correlations present two interesting results. The first result is that the adoption of social media platforms, i.e. having a Facebook or Twitter or Google+ account has no correlation to size. The results do not confirm that small museums adopt more than large museums, as the correlation coefficients are not significant. The lack of significant correlation suggests that in the research sample size of the museum does not have a connection to being on social media.

The second interesting result is the significant correlation between 'Facebook interaction' and both size variables (Pearson's r=0.661), and between both Twitter interaction variables and 'number of employees'. The positive correlation suggests that the bigger the museum, the more dialogue and interaction happen on the social media platforms it adopts. This rejects the second hypothesis that small museums would use social media to get an advantage on bigger museums for new audiences and turning visitors into donors. In addition, the relationship between the two Twitter interaction variables and the number of employees suggests a logical outcome: In a bigger museum with more employees, it is easier to have staff dedicated to running social media communications and establishing sustainable dialogue online.

In addition to size, other correlations among variables are also interesting to note. As pointed out earlier in the descriptive statistics, having a Twitter account has a significant correlation to the financing of the museum (Pearson's r=0.551), as does having a Facebook account (r=0.416). Moreover, the second Twitter interaction variable measuring mentions over the number of tweets has a significant correlation with the financing of the museum (r=0.475).

Taking a more in-depth look at the relationship between size and dialogue, an independent t-test is performed to see whether larger museums interact significantly more

than smaller museums. Small museums are defined as below the mean of the variable for number of employees, and larger museums as above (minimum=0, maximum= 243, mean=47.59, cut-off point for t-test=45).

Independent Samples Test								
		Levene's Test for Equality of Variances		t-test for Equality of Means				
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
facebook interaction	Equal variances assumed	96.791	.000	4.060	54	.000	2.6902	.662
	Equal variances not assumed			2.927	18.379	.009	2.6902	.919

Independent Samples Test			
		t-test for Equality of Means	
		95% Confidence Interval of the Difference	
		Lower	Upper
facebook interaction	Equal variances assumed	1.362	4.018
	Equal variances not assumed	0.762	4.618

SPSS Output 3.0: Independent t-test for Facebook Interaction and Number of employees

The data confirms that larger museums (employees > 45, M=3.12, SE=0.914) have more Facebook interaction than small museums (M=0.43, SE=0.093). The t-test confirms that this difference is significant t(54)=4.060, p=0.000<0.05. It represents a small-to-medium size effect r=023. Repeating the test with the number of visitors as a variable of size confirms higher interaction in larger museums (visitors >400,000, M=4.063, SE=1.437) than in smaller museums (M=0.75, SE=0.233). The difference is again significant t(54)=0.048, p<0.05. It represents similarly a less than medium size effect r=0.23. The tests confirm that size of the museum has a significant effect on Facebook interaction.

For the first Twitter interaction variable (RT/followers), using employee numbers as a variable for size provides inconclusive results. Larger museums seem to have lower interaction on Twitter using this ratio (M=0.012, SE=0.003) than smaller museums (M=0.043, SE=0.032). The difference is not significant t(54)= -0.686, p=0.49>0.05. No conclusions can be made for Twitter interaction and number of employees. Repeating the t-test for the number of visitors again does not provide a significant difference in Twitter interaction. Larger museums seem to have a lower Twitter interaction with this ratio (M=0.011, SE=0.005) than smaller museums (M=0.037, SE=0025), however the difference is not significant enough for conclusions with t(54)=-0.468 with p=0.641>0.05.

The second Twitter interaction variable (Mentions/Tweets) however provides a different picture. Using the employee numbers for size, larger museums have higher Twitter interaction (M=0.25, SE=0.054) than smaller museums (M=0.098, SE=0.025), and it is a significant difference t(54)= 2.981, p=0.004<0.005. Tested again with the visitor numbers for measuring the size of the museum, is in line with the previous test. Larger museums (M=0.25, SE=0.079) are interacting more than smaller museums (M=0.12, SE=0.026). The difference is approaching significance with t(54)= 1.892 and p=0.064.

5.2.3 Amsterdam vs. Istanbul

The third hypothesis that this research is aimed at verifying is a significant difference (or the lack thereof) in social media use and social media interaction between the two focus cities. Hypothesis 3 states*: The location of the museum makes a difference in social media use (i.e. Amsterdam museums have higher visitor dialogue ratios than museums in Istanbul)*. The data collected supports this claim. A quick look at the data split by location shows that Amsterdam museums are ahead of the curve of adapting new technologies and creating interaction with their visitors and social media audience. Table 6 provides an overview:

Variable	Istanbul	Amsterdam
Twitter Account	12 out of 28 have Twitter	20 out of 28 have Twitter
Facebook Account	17 out of 28 have Facebook	All 28 have Facebook
Google+ Account	4 out of 28 have G+	8 out of 28 have G+
Flickr Account	5 out of 28 have Flickr	15 out of 28 have Flickr
Museum Blog	1 out of 28 have a blog	7 out of 28 have a blog
Twitter followers	Mean: 11484 Median: 3765	Mean: 5670 Median: 2657
Facebook fans	Mean: 6882 Median: 915	Mean: 6292 Median: 2737
YouTube Subscribers	Mean: 15.71 Median: 6	Mean: 659 Median: 68
Facebook interaction	Mean: 0.344 Median: 0.000	Mean: 2.3454 Median: 0.8382
Twitter 1 (RT/Followers)	Mean: 0.0528 Median: 0.000	Mean: 0.01245 Median: 0.0073
Twitter 2 (Mention/Tweets)	Mean: 0.0618 Median: 0.000	Mean: 0.2418 Median: 0.2541

Table 6: Comparison of descriptive statistics by location

The first noticeable difference between the two cities' museums is that museums located in Amsterdam seem to have adapted to social media platforms much more than the ones in Istanbul, especially newer platforms such as Google+. This would confirm our hypothesis on a superficial level; Amsterdam museums are more open to social media than Istanbul museums. An important factor in this, however, is the earlier statistics on museum funding and its relation to social media adoption. Considering that most of the state funded museums in this research sample are located in Istanbul, and given that state museums do very little on social media, it is not surprising that Amsterdam museums have a higher rate of social media adoption.

A second interesting difference is in the differences between mean and median of variables between locations, especially on the interaction variables. For the variables that measure Twitter followers and Facebook fans, the mean of the number of followers is not meaningful, but the difference in the median suggests that there are more outliers in the number of fans of Istanbul museums than in Amsterdam. However, high numbers of followers on one or two very popular museums does not affect the interaction and dialogue variables. A comparison of the mean and median for the interaction variables show that Amsterdam museums achieve much more dialogue on social media platforms than Istanbul museums.

To look at the differences in the interaction variables based on location, another independent t-test can be run to prove that there is a relationship between location and interaction (i.e. the regression coefficient is not zero). The independent t-test results are shown in SPSS Output 4.0.

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means				
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
facebook interaction	Equal variances assumed	29.612	.000	-3.017	54	.004	-2.0006643	.6630827
	Equal variances not assumed			-3.017	28.639	.005	-2.0006643	.6630827

Independent Samples Test			
		t-test for Equality of Means	
		95% Confidence Interval of the Difference	
		Lower	Upper
facebook interaction	Equal variances assumed	-3.3300651	-.6712635
	Equal variances not assumed	-3.3575637	-.6437649

SPSS Output 4.0: Independent t-test for Facebook Interaction and Location

The results of the independent t-test stem from the row for 'equal variances not assumed'; as the Levene's test proves that the variances are significantly different (i.e. $p<0.05$). Thus the data shows that Facebook interaction is higher for Amsterdam museums (M= 2.345, SE=0.65) than for Istanbul museums (M=0.344, SE=0.113), and the t-test confirms this difference is significant ($p=0.004<0.05$) with an effect size of r=0.25.

The independent t-test is then repeated for the Twitter interaction variables. The first Twitter interaction variable measuring retweets over total number of followers does not show a significant difference by location (p=0.35). Twitter interaction is slightly higher for Istanbul museums (M=0.053, SE=0.043) than for Amsterdam museums (M=0.012, SE=0.003). The difference is not significant with an effect size of r=0.016.

For the second Twitter interaction variable measuring mentions over total number of tweets, the difference is significant $p=0.000<.05$. The independent t-test shows that Amsterdam museums have a higher Twitter interaction when measured with this ratio (M=0.24, SE=0.042) than Istanbul museums (M=0.06, SE=0.022). The difference is a significant one with an effect size of r=0.256.

The independent t-test results show that the t-value for Facebook interaction variable and the second Twitter interaction variable have a t-value significantly different than zero, whereas the first Twitter interaction variable does not. This is also proven by linear regressions. Running a simple regression to measure the effects of location on the interaction variables provides additional information. As the SPSS output below (5.0) shows, location only accounts for a small portion of Facebook interaction:

Model Summary (Facebook Interaction)				
Model	R	R Square	Adjusted R Square	Std. Error of Est.
1	0.380	0.144	0.128	2.48

SPSS Output 5.0

A detailed look into the Facebook Interaction and its relation to the independent variables show the following relationships:

Coefficients (Facebook Interaction)					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	ß	**Std Error**	**Beta**		
1 Constant	0.345	0.469		0.735	0.465
(location)	2.001	0.663	0.380	3.017	0.004

SPSS Output 5.1

The following SPSS (1.2 through 1.5) output tables show the relationship of the location of the museum to the two twitter interaction variables.

Model Summary (Twitter Interaction 1 (RT/Followers))				
Model	R	R Square	Adjusted R Square	Std. Error of Est.
1	0.127	0.016	-0.002	0.1599

SPSS Output 5.2

Coefficients (Twitter Interaction 1 (RT/Followers))					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	ß	**Std Error**	**Beta**		
1 Constant	0.053	0.030		1.747	0.086
(location)	-0.040	0.043	-0.127	-0.944	0.349

SPSS Output 5.3

Model Summary (Twitter Interaction 2 (Mentions/Tweets))				
Model	R	R Square	Adjusted R Square	Std. Error of Est.
1	0.457	0.209	0.194	0.1785

SPSS Output 5.4

Coefficients (Twitter Interaction 2 (Mentions/Tweets))					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	ß	**Std Error**	**Beta**		
1 Constant	0.062	0.034		1.832	0.072
(location)	0.180	0.048	0.457	3.773	0.000

SPSS Output 5.5

As the results of the independent t-tests showed, the first Twitter interaction variable has a t-value not significantly different from zero, meaning the linear model is a flat one, which in turn means a change in location does not significantly change this ratio of interaction.

Overall, the results for the Twitter interaction variable, measuring interaction with the total number of retweets divided by total number of followers, does not seem to be producing any significant results. As the variable was taken from literature, which aimed to provide museums with variables to measure their own ratios, it may be better suited for internal use by individual museums rather than a measure of comparison.

VI. Conclusions and Further Research

Although covering only a small area within the large framework of museums on the web, this research provides several important, and sometimes surprising, results as well as confirms expectations from existing literature.

First of all, it is interesting to see the institutional behaviour of public museums as presented by existing cultural economics research (Frey, 2006) holds true even on a small-scale research sample regarding social media adoption. The research shows that the degree of comfort that state museums receive from being fully publicly funded leads to a lack of incentive to modernize, to prove their validity or to try and attract visitors. On the other hand, mixed funding – the combination of state subsidies, donations and sponsors – enables (or forces) museums to think more creatively about opportunities such as maintaining a dialogue with existing and potential visitors.

In addition, the research also provides useful insight into the relationship of museums' interaction with their existing or potential visitors online and museum characteristics. The size of the museum presents an interesting situation. While the expectations from a cultural entrepreneurial perspective might suggests small museums being more prone to adopt newer technologies and newer ways to be competitive with larger museums, the results show otherwise. Facebook interaction and Twitter interaction – when measured as the total number of mentions divided by the total number of tweets – present a significant difference favouring larger museums.

This seems to indicate that larger museums interact more on social media platforms than smaller museums. It is suggested that small museums do not have the resources (personnel as well as budget and time) to devote to social media upkeep and using new technologies to compete with larger museums for resources and visitors. Indeed, this would explain the high correlation of Facebook interaction with the large number of employees. Having a big team in the museum, which can devote their time and energy into figuring out each social media platform and being able to respond to visitors' questions or comments, may enable larger museums to take advantage of social media.

On the other hand, the research also confirms the expectation about the location of the museum having a significant effect on interaction. Facebook interaction and Twitter interaction show a significant difference in interaction favouring Amsterdam museums. This is not extremely surprising: as it is laid out in the subchapter of each museum sector, the Dutch museum sector is ahead of the Turkish one in terms of development, and it is natural for Amsterdam museums to have gone beyond using social media as a simple marketing tool. The fact that the Turkish museum sector as a whole has not reached the same skill set of other European sectors has a significant effect. A younger museum sector in this case also results in a high number of state-supported museums, which do not use social media for any of the possible purposes.

There are no doubt outliers in each location, small museums who do a lot on one platform but nothing on others, and middle sized established museums in Istanbul doing a very good job whereas its competition lags behind. However, overall, the standard is higher in Amsterdam, where in terms of Kidd (2011)'s framework, more museums have surpassed the simple marketing frame and moved on to the inclusivity frame.

More interestingly, the research shows that none of the museums in the research sample has moved to the next level in this framework and created a project, which requires user-generated content (by visitors). This may mean that co-creative projects are a phenomenon of the non-European museum sectors (e.g. U.K., U.S. and Australia). But it might also mean that the Dutch museums have not reached the point to devote resources for the organization and execution of such projects. It would be interesting to see how museums make the decisions for such co-creational projects from an economic decision making point of view (this and more points for further research will be examined in the following subchapter).

To sum up, these results are all important and relevant to the museum sector. Full state support and financial security leads to lack of innovation and hinders entrepreneurial undertakings, and causes museums to miss out on opportunities to involve new and existing visitors and build communities. This is arguably the most important finding of this research and needs to be taken into account by governments and funding bodies to ensure future development of the sector. Moreover, characteristics of the museum affect

the entrepreneurship of the museum, but do not limit it: there are outliers to each of the hypothesis tested in this research, which indicates that many museums manage to engage their visitors despite their limited resources. Further research can shine a light on how these museums accomplish this, as well as how all museums can continue utilizing social media for visitor engagement.

6.1 Further Research

Due to the time constraints of this research, there are still several points of interest for cultural economics researchers in this area of museums and social media. One of the most important questions is whether the dialogue this research measured (and the dialogue that takes place between museums and visitors – existing and potential – is actually meaningful. The ratios used during data collection are purely quantitative, and cannot take into account whether the dialogue that took place is something basic such as a visitor 'checking in to the museum on the platform four-square' and the museum's Twitter account simply retweeting this, or if it is a visitor asking an interesting question about the collection which is in return answered in full and to all Twitter followers. The first example or retweeting a foursquare check-in, does not count for dialogue if a more in-depth study can be made of the content of the dialogue.

Another important point in the customer relations that museums can build upon on social media is the social media users themselves. It is important to know who uses social media, and how they use it and compare this with the museum's visitor profile. This type of research has been done in the United States (Li, 2007) and in Australia (Kelly & Russo, 2008) and would benefit both of the focus countries of this research. By knowing how the museum demographic matches the social media demographic, the museum can focus their social media strategies accordingly, using different platforms and different media to attract the different demographics and their use of social media.

A third point for further research is a comparison of social media investment in museums. Some literature already exists for some of the museums more advanced in their social media activities (such as the Smithsonian Institute). Official social museum strategies exist, including a division of work (social media accounts by department vs. one account for all), which also requires the museum to set aside a budget for these activities (for IT

support as well as personnel time). A comparison of business plans and strategies of such museums would be useful for all museums internationally. Some of this discussion on social media strategies is already happening on group forums of professional social networking websites such as LinkedIn,[9] but no research has been done as far as the author is aware. The existence of such for a prove that researching best or interesting practices of setting up social media strategies and business plans would be a useful and necessary contribution to the sector as well as the research community.

[9] Museums and The Web LinkedIn Group discussion, available online at http://www.linkedin.com/groupItem?view=&srchtype=discussedNews&gid=725107&item=114022418&type=member&trk=eml-anet_dig-b_pd-pmt-cn&ut=0Nxp4P8DOOV5g1. (Need to be logged in to LinkedIn and a member of the group to view fully).

Glossary

Blog (Weblog) Blog stands for web logs, which are personal websites managed by one or more persons where the author can publish distinct entries similar to a journal. Blogs were popular as personal, diary-like websites, but have evolved with Web 2.0 to also be thematic and a breeding ground for amateur experts – amateurs who become trend-setters in their field of hobby or interest. Most blogs can be followed using RSS (See Glossary for definition). Micro-blogging (See Glossary) sites such as Tumblr have become popular in recent years by brands.

Delicio.us Delicio.us is an online bookmark database. On the website, the user creates an account, and can start making a database of websites. This is similar to bookmarking on the browser, but differs from this in its purpose. Bookmarking on the browser is mostly used for websites visited on a regular basis; whereas Delicious can be used to make a detailed collection for later access for purposes of an archive or database. Each saved website can be tagged, and each tag can be searched within Delicious to discover other websites sharing the tag. This makes it easy way to categorically collect and search for websites. Delicious users can be followed through Delicious or via RSS.

Fan A user who clicked on the Like button of a Facebook corporate Page is called a Fan. When searching for Facebook Pages for a certain page, each page will display the name and the number of Fans. It does not necessarily mean that the person is a fan of the brand or institution, but mainly that they want to follow the updates made from that page.

Follower A follower is a user following your Twitter account by clicking the Follow button on your feed. They receive your tweets on their Twitter homepage. Each Twitter profile displays the number of users following the account as well as the number of users the account follows.

foursquare Foursquare is a more recent, location-based social networking website for smart phones, which enables users to 'check-in' to venues. These check-ins can be cross-posted on social media platforms such as Twitter and Facebook automatically, enabling users to show in real-time where they are and with who. Photos taken at the location can be added to these posts.

Geotagging Geotagging is the process of tagging (see below) posts made by the user with geographical information using GPS technologies. The following can be geotagged: Facebook posts, tweets, photographs posted on Instagram, foursquare and Flickr. This data includes geographical coordinates of the location as well as place names

(ranging from name of the café to name of the city or country).

Mention A mention is when a user on Twitter sends a tweet with your username in the beginning, which (a) indicates that the tweet is sent mainly to you, but is not private and (b) Twitter recognizes as such and shows on a different section of the website as a message directly sent to you. You can mention another account without following the account or the account following you.

Microblogging A microblog differs from a traditional blog because its content is typically smaller in size. "Microblogs allow users to exchange small elements of content such as short sentences, individual images, or video links." (Wikipedia, http://en.wikipedia.org/wiki/Microblogging)

Retweet Retweeting or RT is the name given to the action of forwarding a tweet to users who follow your tweets. This can be done with the shortcut symbol above every tweet, or by manually typing RT in front of the tweet and typing the original tweet.

RSS Technically stands for RDF Site Summary, but is dubbed Real Simple Syndication. It is a technology of web feed formats, and it is used to follow the content of frequently updated websites (such as blogs, news websites) in a standard format. It is possible to subscribe to the RSS feed of a website or a blog. Applications such as Google Reader or RSS sections of programs such as Outlook or Mail are easy ways to get RSS feed updates.

Tagging "Tags" are keywords which describe the content of the video, photograph, website or blog post that is being "tagged". These keywords can be used to categorize items and make them easy to search and find. Additionally, users as well as Pages can be tagged on Facebook photos, as well as posts. The tagging in posts works the same way as mentions on Twitter function.

Tweet Tweet is the name given to each entry made by a user on Twitter.com. Standard Tweets have a character limit of 140 characters, but this can be made longer by using third party applications such as Twitlonger.com.

Wiki **"**A wiki is a website whose users can add, modify, or delete its content via a web browser using a simplified markup language or a rich-text editor. Wikis are typically powered by wiki software and are often created collaboratively by multiple users. Examples include community websites, corporate intranets, knowledge management systems, and note taking. " (Wikipedia, http://en.wikipedia.org/wiki/Wiki)

Wikipedia Wikipedia is a collaborative free encyclopaedia, which can be edited by anyone. Users edit entries with references, which are then fact-checked by Wikipedia. Users can also create entries for

anything they think needs an entry. Wikipedia exists in many languages, although English Wikipedia has by far the largest amount of entries.

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APPENDIX I – Description of Museums in Research Sample

ISTANBUL

Arkeoloji Müzesi (Archeology Museum)
http://www.istanbularkeoloji.gov.tr/

The Archeology Museum in Istanbul, founded in 1891, has a collection that ranges from sculptures from the the Archaic Era to the Roman Era to Non-Islamic and Islamic Coin Cabinets. It includes several additional collections since the opening of its new building in 1998, including the "İstanbul Through the Ages" collection, the "Anatolia and Troy Through the Ages" and the "Surrounding Cultures of Anatolia: Artifacts from Syria, Palestine and Cyprus" collection. The museum's responsibility falls under the Culture and Tourism Ministry.

Askeri Müze (Military Museum)
http://www.tsk.tr/2_genel_bilgiler/2_6_askeri_muze/askeri_muze.htm

The Military Museum of Istanbul is dedicated to the history of the military, going back to thousand years. The museum's collection ranges from historical weapons, uniforms and tools of various periods of the army to campaign tents and standards. Outside the museum, Ottoman cannons and mortars, aircraft and helicopters are on display.

Aşiyan Müzesi

The home of a famous Turkish poet (Tevfik Fikret), the building was turned to a museum in 1945. It includes photographs, books, paintings and personal artifacts from of the poet Nigar Hanım, as well as to a group of authors called Edebiyat-ı Cedide. It also houses the Hall of Abdülhak Hamit, another famous poet, and his belongings. The museum is operated by the Istanbul Municipality.

Ayasofya Müzesi (Hagia Sofia Museum)
http://www.ayasofyamuzesi.gov.tr/

Hagia Sofia is a former Orthodox patriarchal basilica (537-1453), turned mosque (1453-1935), turned museum. The building itself is important for its architectures and mosaics. The collection of the museum consists of church properties and stone artworks, several mosaic artworks, which were covered between 1453 and 1935, and türbe artifacts (artifacts from the mausoleum).

Beylerbeyi Sarayı (Beylerbeyi Palace)
http://www.beylerbeyi.gov.tr/source.cms.docs/beylerbeyi.gov.tr.ce/beylerbeyi.html

Beylerbeyi (Lord of the lords) Palace is an imperial Ottoman summer residence built in the 1860s on a location that has a history reaching back to the Byzantine times. It displays the palace as it was thought to have been used with artifacts and furniture of the

time, including sculptures in the garden. It is considered a national palace and is under the responsibility of the Culture Ministry.

Borusan Contemporary Art (Perili Köşk)
http://www.borusancontemporary.com/homepage.aspx

Located in the Perişi Köşk (Haunted Mansion), Borusan Contemporary Art Museum was founded "for the purpose of introducing the Borusan Contemporary Art Collection to a wider audience as well as increasing interest in contemporary art in Turkey. As the first and the only one of its kind in Turkey, with its 'museum-in-an-office' concept, Borusan Contemporary aims to become a pioneer in its own category, both with its physical environment and visiting experience" (BCA Website). The museum displays the collection of Borusan Holding, a private collection which supports classical music and visual arts. The collection consists of video art, new media as well as photography, prints and paintings.

Büyük Saray Mozaikleri Müzesi (Great Palace Mosaic Museum)
http://www.muze.gov.tr/mozaik

The Great Palace Mosaic Museum displays the Byzantine mosaics, which were recovered from the Great Palace of Constantinople during excavations in 1930s and 1950s. It is a state museum and is under the responsibility of the Culture and Tourism Ministry.

Dolmabahçe Sarayı (Dolmabahçe Palace)
http://www.dolmabahce.gov.tr

Dolmabahçe Sarayı is a palace, which served as the administrative center of the Ottoman Empire from 1850s to 1920s. Important to the Turkish culture, as it hosts the room where Atatürk has died, it has been kept to reflect the architecture and style of the later years of Ottoman Emperors. It is considered a national palace and is under the responsibility of the Culture Ministry.

Deniz Müzesi (Istanbul Naval Museum)
http://www.denizmuzeleri.tsk.tr/idmk/

Deniz Müzesi, founded in 1897, is the biggest naval museum in Turkey and has a variety of collections, adding up to 20,000 objects. Collections within the museum range from historical galleys, weapons and uniforms to ship models, navigational instruments and manuscripts.

Eczacıbaşı Sanal Müzesi (Eczacıbaşı Virtual Art Museum)
http://www.sanalmuze.org

Operating on the World Wide Web since early 2000, the Virtual Art Museum has put together approximately 200 different types of exhibitions, ranging from retrospectives to photography, sculpture exhibitions and workshops. The virtual art museum is a project of the private corporation, Eczacıbaşı Holding.

Enerji Müzesi (Santral Istanbul Museum of Energy)
http://www.santralistanbul.org/pages/index/enerji-muzesi

Santral Istanbul, the energy museum, is an industrial and archeology museum. Two engine rooms of the Silahtarağa Power Plant's, built in early 1900s, were reinforced and converted into the santralistanbul Museum of Energy, retaining as many original elements as possible. The two main engines of the power plant have been preserved and repaired for display, and the museum has an exhibition hall called Energy Play Zone featuring interactive exhibitions. The museum is an initiative of public and private institutions.

Fotoğraf Müzesi (Photography Museum)
http://www.istanbulfotografmuzesi.com/

Founded in 2011, the Fotography Museum was founded with the cooperation of the Foundation of Friends of Photography and the Fatih Municipality. The collection, which focuses on Turkish photography, consists of two private collections donated to the museum, making up hundreds of photographs in the permanent collection. The museum also hosts exhibitions, publishes and hosts a research library in its building.

Havacılık Müzesi (Istanbul Aviation Museum)
http://www.hho.edu.tr/muze/muze.htm

Havacılık Müzesi in Istanbul is dedicated to the history of aviation in Turkey. The museum presents warplanes, helicopters and weapons used by Turkish Air Force, as well as civilian air transport. It includes the Turkish aeronautics history, starting from Ottoman era. The museum includes a hall dedicated to all aviation uniforms starting from the Ottoman era to the present.

Istanbul Modern (Istanbul Museum of Modern Art)
http://www.istanbulmodern.org

Istanbul Modern, founded in 2004, is Turkey's first private museum to organize modern and contemporary art exhibitions. The museum is a foundation museum and is the initiative of the private corporation Eczacıbaşı Holding. In addition to its permanent collection, which prominently features Turkish artists, the museum has temporary exhibition spaces, a photography gallery, and spaces for educational and social programs, as well as a cinema, restaurant, design store and an extensive library.

İş Bankası Müzesi (İş Bankası Museum)
http://www.muze.isbank.com.tr/

Founded in 2007, the museum was originally founded to display the history of İş Bankası – one of the oldest Turkish banks. Its collection consists of all objects that showcase the history of banking in the Turkish Republic, everything from typewriters to calculators. Additionally, the museum also displays a selection of the painting collection of the bank, which consists of 2000 paintings from 750 painters.

Karikatür ve Mizah Müzesi (Istanbul Cartoonists and Humor Museum)

The Cartoonist and Humor Museum was founded in 1975 as a cooperation of the Association of Cartoonists and the Istanbul Municipality. Detailing the history of cartoonists and caricatures over decades, the museum serves as an archive with its extensive library of books. The museum has a publishing atelier, where anyone can learn to publish under professional surveillance.

Kariye Müzesi (Chora Church Museum)
http://www.muze.gov.tr/kariye / http://www.choramuseum.com/articles/chora-church-kariye-museum-kariye-muzesi/

The Chora Church is a Byzantine Church from the early 5th century. Turned into a mosque by the Ottoman Empire, the church was made into a museum in 1948. It hosts a number of Christian mosaics which were preserved.

Mimar Sinan Üniversitesi Resim ve Heykel Müzesi (M.S. University Painting and Sculpture Museum)
http://www.msgsu.edu.tr/msu/pages/356.aspx

The Mimar Sinan Fine Arts University's Painting and Sculpture Museum was founded in 1937, after the founding of the Mimar Sinan Fine Arts University. The collection, which consists of paintings, sculptures and plastic art by predominantly Turkish artists, belongs to the museum. The university is planning to open another museum to focus on post-Republic works of art in 2013.

Oyuncak Müzesi (Istanbul Toy Museum)
http://www.istanbuloyuncakmuzesi.com/

Founded in 2005 by the Turkish poet Sunay Akın, and designed by a stage designer Ayhan Doğan, the Istanbul Toy Museum has a collection of more than 4000 toys collected over a period of 20 years. It has been nominated for the European Museum of the Year price in 2010 and 2011.

Pera Müzesi (Pera Museum)
http://www.peramuzesi.org.tr/

Founded by the Suna and Inan Kıraç Foundation, Pera Museum opened in 2005 after the renovations to a historical building formerly used as the Bristol Hotel. The permanent collection of the museum is the collection of the Suna and Inan Kıraç Foundation, and the museum has two additional spaces for temporary exhibitions. The museum's collection consists of a variety of works; examples from the foundation's collection of Anatolian Weights and Measures as well as the Foundation's collection of Kütahya Tiles and Ceramics. The painting collection focuses on Orientalist art and consists of around 300 paintings.

Rahmi M. Koç Sanayi Müzesi (Rahmi M. Koç Industrial Museum)
http://www.rmk-museum.org.tr/

The Rahmi M Koç Museum, opened in 1994, is the first major museum in Turkey dedicated to the history of Transport, Industry and Communications. The museum's

collection consists of thousands of objects from the fields of road and rail transport, marine, aviation and engineering. The museum is the initiative of Rahmi M. Koç, and his family corporation Koç Corporation and has created the Rahmi M. Koç Museology and Culture Foundation for the museum activities.

Rezan Has Müzesi (Rezan Has Museum)
http://rhm.org.tr/en/

Rezan Has Museum, established in 2007, is a private art museum. The museum is an iniative of the wife of Kadir Has, who has established a private university, under which Rezan Has Museum provides an exhibition space. The museum does not own a collection.

Sadberk Hanım Müzesi (Lady Sadberk Museum)
http://www.sadberkhanimmuzesi.org.tr/

The first private museum of Turkey, Sadberk Hanım Museum was established in honor of Sadberk Koç and to display her personal collection. The personal collection, which included traditional costumes, embroidery, silver artifacts with "tuğra" and porcelain, was eventually combined with the collection of Hüseyin Kocabaş, an avid Turkish collector. Currently the collection hosts more than 18,000 objects (belonging to Archeological Section as well as the Turkish-Islamic Art section). The museum belongs to the Vehbi Koç Foundation, a separate foundation of the Koç Corporation).

Sakıp Sabancı Müzesi (SSM)
http://muze.sabanciuniv.edu/anasayfa

Sakıp Sabancı Museum is a private art museum founded in 2002. The museum is located in the mansion of Hacı Ömer Sabancı, founder of Sabancı Corporation, and displays his collection of decorative art works consisting of figurines, metalwork, porcelain, objets d'art and furniture as well as his son Sakıp Sabancı's collection of 400 pieces of Ottoman calligraphy. The building and its collection is leased to the Sabancı University and is under the university's responsibility. The museum has recently gained attention for its blockbuster Picasso and Rodin exhibitions.

Salt Institute (Beyoglu & Galata)
http://saltonline.org

Salt Institute was established in 2011 by Garanti Bank to bring together three separate institutions together: the Platform Garanti Contemporary Art Center, the Garanti Gallery and the Ottoman Bank Research and Archives Center. The institution hosts temporary exhibitions only, with a strong emphasis on research and experimental thinking. In addition to its two separate locations, Salt also has a specialized public library.

Topkapı Sarayı (Topkapı Palace)
http://www.topkapisarayi.gov.tr/

The main residence of Ottoman emperors between the 15th and the 19th century, the Topkapı Palace is a UNESCO Heritage Site. Turned into a museum in 1924, the Museum

is under the responsibility of the Ministry of Culture and Tourism. While the palace grounds are good examples of Ottoman architecture, the museum's collections include robes, weaponry, Ottoman miniatures, calligraphic manuscripts, as well as Ottoman treasures and jewelry.

Türk ve Islam Eserleri Müzesi (Turkish and Islamic Arts Museum)
http://www.tiem.gov.tr/

Last museum to be opened under the Ottoman rule, the Turkish and Islamic Arts Museum is also the first museum with such a collection focus in Turkey. The museum has several important collections. It's Islamic art collection ranges from the early days until the 20th century, and the origins of objects are well documented. It also has one of the largest carpet collections with around 1700 in the collection. The museum falls under the responsibility of the Ministry of Culture and Tourism.

Yapı Kredi Vedat Nedim Tör Müzesi (Yapı Kredi Bank Vedat Nedim Tör Museum)
http://www.ykykultur.com.tr/koleksiyon/

Founded in 1992, the Vedat Nedim Tör Museum was founded under the wing of the Yapı Kredi Bank. Named after Vedat Nedim Tör, who was responsible for all cultural activities of the bank until 1977, the museum hosts Turkey's larget coin collection (55,000 coins), and happens to be the third largest collection of coins in the world. The museum also has an ethnographic collection of clothing, rosaries and Karagöz figures.

AMSTERDAM

Allard Pierson Museum
http://www.allardpiersonmuseum.nl/

The Allard Pierson museum, founded in 1934, is the archeological museum of the University of Amsterdam. Named after the first archeology professor of the University, the museum features artifacts from civilizations of ancient Egypt, ancient Greece, and the Roman Empire.

Amsterdam Museum
http://www.amsterdammuseum.nl/

Amsterdam Museum is a museum on the history of the city of Amsterdam and was called Amsterdam History Museum until 2011. Opened in 1926, the museum manages about 70,000 objects related to the history of the city. The collection consists of paintings, archeological findings, photographs, models as well as a carillon, an environment-friendly "white car" from the 1960s and a Jordaan café.

Anne Frank Huis (Anne Frank House Museum)
http://www.annefrank.org/

The Anne Frank House Museum is the house where Anne Frank hid in Amsterdam during the Holocaust. First opened in 1960 with public grants, a foundation was founded and took over the museum in 1963.

De Appel
http://www.deappel.nl/

Founded in 1975, De Appel is an arts center with an international focus on research and contemporary art. With its curatorial programme for young people, it is one of the centers of contemporary art in the Netherlands. In addition to its exhibitions and educational projects, De Appel also publishes books and includes a library and archive.

Eddie the Eagle Museum
http://eddietheeaglemuseum.com/

Eddie the Eagle Museum is a museum founded by an artist collective focusing on undiscovered talent. The museum was founded in 2010 and takes its name from a British ski-jumper who was last at the Olympics. The museum takes the motto from the sportsman and from Beckett's quote "Fail, Fail Again Fail Better".

EYE Filmmuseum
http://www.eyefilm.nl

Eye Filmmuseum is the museum of the EYE Filminstitute of the Netherlands. The museum has an internationally renowned collection over the entire history of film; silent films as well as latest digital films. In addition to the films, the collection is also includes film related artifacts such as: photographs, posters, soundtracks, equipment and filmmakers' paper archives.

FOAM – Fotografiemuseum Amsterdam (Photography Museum Amsterdam)
http://www.foam.org/

FOAM is the photography museum of Amsterdam founded in 1991 on the premises of another museum. The museum organizes four major exhibitions with a focus on big names in photography with sixteen additional shorter exhibitions. The museum has additionally educational programmes, lectures, publications and a bookstore.

Geologisch Museum Artis (Geological Museum of the Artis Zoo)
http://www.artis.nl/

The Geological Museum Amsterdam is part of the Artis Zoo in Amsterdam. The museums collection belongs to Artis, and is displayed in various fixed exhibitions such as one on the development of flight in vertebrates. . It includes fossils and minerals, meteorites etc.

Hermitage Amsterdam
http://www.hermitage.nl

The Hermitage Amsterdam is a dependency of the Hermitage Museum in St Petersburg and was opened in 2009. It is managed by the "Stichting Hermitage aan de Amstel" and has an agreement with the Russian government to produce exhibitions together with the State Hermitage Museum in St Petersburg. The museum has two permanent exhibitions (one about Netherlands–Russia relations and the other about the history of the

building Amstelhof). There are temporary exhibitions that accompany the permanent ones.

Het Scheepvaartmuseum (The National Maritime Museum)
http://www.hetscheepvaartmuseum.nl/

The Scheepvaartmuseum is the national maritime museum of the Netherlands and showcases 500 years of maritime history. The museum has a collection of about 300,000 artifacts on ships and sailing, including paintings of naval battles and a map collection. The museum was founded in 1916 and has moved to its current building in 1973.

Joods Historisch Museum (Jewish Historical Museum)
http://www.jhm.nl

The Jewish Historical Museum in Amsterdam is a museum on Jewish culture, history and religion. Founded in 1987, the museum has more than 13,000 artifacts, ceremonial and historical objects. Only about five percent of this collection is in the permanent exhibition. The Foundation of Jewish Historical museum has been founded in 1930s and is responsible for the museum and the Jewish Cultural Quarter in Amsterdam.

Koninklijk Paleis Amsterdam (The Royal Palace)
http://www.paleisamsterdam.nl/

Built as a city hall in the 17th century, the Royal Palace is located in the heart of Amsterdam. The building was inaugurated in 1655, used as a Royal Palace by Napoleon and then kept as a royal palace. The palace hosts exhibitions throughout the year.

Mediamatic
http://www.mediamatic.net

Founded in 1983, Mediamatic focused on art and technology, slowly adapting and adding to its focus interactive media, exhibitions, projects and lectures. It aims to be the open local house for art and new technology.

Museum van Loon
http://www.museumvanloon.nl/

A private residence built in 1672, the first residence of the house Van Loon was a pupil of Rembrandt. The historical building is used as a museum. Displayed in the rooms is a large collection of paintings, fine furniture, precious silvery and porcelain from different centuries. The museum is named after the Van Loon family, the last residents of the house and founders of the museum. In 1960, the family founded the Foundation van Loon to restore the house and open it to the public.

Nederlands Instituut voor Mediakunst (Netherlands Media Arts Institute)
http://www.nimk.nl/

Founded in 1978, the Netherlands Media Arts Institute assembled an extensive collection of video and media art. The collection includes more than 2000 works, varying from the earliest experiments through recent productions by known Dutch, international artists and

young talents. The institute manages four additional collections (such as De Appel in Amsterdam and Lijnbaan Center in Rotterdam).

NEMO Science Museum
http://www.e-nemo.nl/

The largest science center in the Netherlands, NEMO was founded in 1997 and is preceded by Nederlands Instituut voor Nijverheid en Techniek (Dutch Institute for Industry and Technology). In 2010, it became part of the Foundation "National Center of Science and Technology". NEMO gives the opportunity for visitors to do experiments on scientific and technical developments in the field of physics, chemistry, information technology, biology and behavioral sciences.

Oude Kerk Amsterdam (Old Church Amsterdam)
http://www.oudekerk.nl/

The Oude Kerk is the oldest standing building in Amsterdam, and it was built in 1300s. The church was built on a cemetery and its floor is made up of gravestones. It includes three historical organs.

Persmuseum (Press Museum)
http://www.persmuseum.nl/museum

The Press Museum is the national repository for the journalistic heritage in the Netherlands. The museum manages an extensive collection of newspapers and magazines from 1600s, a collection of posters and other advertising related to the press, a unique collection (original) political cartoons and press graphics, numerous archives and photos about journalists and the press, and a extensive library. The foundation of the museum was founded in 1915, and the museum was moved to its current location in the 1980s.

Pianola Museum
http://www.pianola.nl

The Pianola museum is a music museum with a collection of automatic pianos and related objects. The museum has a collection of about 25,000 music rolls, which can be played on the pianolas in the instrument collection.

Rembrandthuis (The House of Rembrandt)
http://www.rembrandthuis.nl/

The museum of Rembrandthuis is located in the house that Rembrandt lived during the years 1639 and 1658. Rembrandt lost the house after declaring bankruptcy. Through documents archived regarding all furniture and artifacts sold during the liquidation, the museum has put back the state of the house of Rembrandt together. The museum was opened in 1911 and the collection includes Rembrandt's sketches, his paintings as well as paintings of his contemporaries and students.

Rijksmuseum (State Museum)
http://www.rijksmuseum.nl

Rijksmuseum is a Dutch national museum dedicated to arts and history. The museum was founded in 1800s as the collection of the Dutch stadtholders, similar to the French way. In 1808, the museum moved to Amsterdam. The museum has three major collections; the first is a collection of fina art, with paintings, sculptures, applied art as well as a collection of Asian art. A second collection is the History collection with a variety of objects from the Middle ages to the 20th century related to the Dutch history and culture. The third collection is of drawings, prints and photographs. The building and the collection of the Rijksmuseum is owned by the state but the museum is run by the foundation of the museum.

Stedelijk Museum Amsterdam (Municipal Museum Amsterdam)
http://www.stedelijk.nl/

Stedelijk Museum is a museum in Amsterdam for classic modern and contemporary art. Founded in 1895, the current collection holds more than 90,000 objects ranging from paintings and sculptures to posters and photography. Important collection clusters focus on Bauhaus, Pop Art and Neo-Impressionism and the museum is home to important pieces from Cezanne and van Gogh.

Tassenmuseum Hendrikje (Museum of Bags and Purses)
http://www.tassenmuseum.nl

Tassenmuseum Hendrikje focuses on the history of the ladies' handbag and has a collection of over 4,000 bags, purses and suitcases. In addition to its historical permanent collection, the museum also hosts temporary exhibitions on international designers. The Tassenmuseum is a private museum dependent on donations.

Theater Museum (Theater Instituut Nederland's Theater Museum)
http://www.theatermuseum.nl/

Established in 1925, the Theater Museum grew out of the Dutch Institute of Theater TIN. The museum manages a collection of related documents to contemporary theater in the Netherlands.

Tropenmuseum (Museum of the Tropics)
http://tropenmuseum.nl/

Tropenmuseum is an anthropological museum located in Amsterdam. The museum is part of the Koninklijk Instituut voor de Tropen (Royal Institute of the Tropics) and is under the responsibility of the Ministry of Foreign Affairs. The museum has eight permanent exhibitions and a series of temporary exhibitions, which includes modern and traditional visual arts and photography.

Van Gogh Museum
http://www.vangoghmuseum.nl/

The Van Gogh Museum is a museum dedicated to the Dutch painter Vincent Van Gogh. Founded in 1973, the museum has around 200 paintings of Vincent Van Gogh as well as letters and his correspondences. Additionally the museum also has a collection of 19th

century painters of Impressionism and Post-Impressionism. It is the most visited museum in the Netherlands and the 23rd in the world.

Verzetsmuseum (The Dutch Resistance Museum)
http://www.verzetsmuseum.org/

The museum focuses on the story of the Dutch people forming resistance in the Second World War. The permanent exhibition includes photographs, old posters, objects films as well as sound clips from World War II and Netherlands under German occupation. In addition to the permanent collection, the museum has temporary exhibitions and a children's museum.

Willet Holthuysen
http://www.willetholthuysen.nl/

The Museum Willet Holthuysen is the house of the Willet-Holthuysen family, and hosts the arts and craft collection collected by Abraham Willet in the 19th century. Parts of this collection is displayed in the museum as well as other temporary exhibitions that are in line with the permanent collection. The permanent collection includes ceramics, glassware, furniture, paintings, drawings and photographs among others.

Woonbootmuseum (The Houseboat Museum)
http://www.houseboatmuseum.nl/

The Houseboat Museum is located on the "Hendrika Maria" - a former freighter, built in 1914. The boat was used for transportation of sand and gravel until the 1960s and has been since converted into the Houseboat Museum. It displays the life within a houseboat, which are relatively common in the Netherlands.