Visitor Centered Design
In Contemporary Art Museum

Research on the Interactive Development Trend and Digital Strategy of Contemporary Art Museum

Politecnico di Milano
Scuola del Design
Design della Comunicazione

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Supervisor
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Master Degree, A.A 2017/2018
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The museum is an integrated complex communication system, it delivers collections by various exhibitions and builds its meaning with visitor participation. Especially in contemporary art museums, the interactive experience development is the embodiment of its vanguard. The virtual museums as an extension of the physical museums and the rise of the media museum make it play a role as a pioneering media producer, based on the translation of its collections. Today’s museums are competing for further engage the public. With more people enjoy and become accustomed to participatory learning and entertainment experiences, contemporary museums also actively use the new technologies to create more multi-layers, multi-media and visitor-tailored and fulfilling experiences. The project aims at investigating and designing communicate solutions for wide visitors of contemporary art museums, record a contemporary scene and provide a platform for any discussions about the art and art museums.
# TABLE OF CONTENTS

**PREFACE** - **RESEARCH BACKGROUND**
- The rise of interactive experiences in museums
  - From physical museum to virtual museum

**RESEARCH PURPOSE**

## PART 1  **OVERVIEW OF MUSEUMS**

Ch_1  **New features of the museum**  
- Museum democratisation  
- Museum modernisation  
- Museum digitisation  
- Museum diversification

Ch_2  **Interactive mode in the museum**  
- Through interactive art  
- Display through interaction design  
- Lectures, forums and workshops  
- Through mobile new media

Ch_3  **Museum construction and audience participation**  
- In China and Abroad
PART 2 VIRTUAL MUSEUMS AS AN EXTENSION OF THE PHYSICAL MUSEUMS

Ch_4 Public education and resource sharing
   Open content
   Online exhibitions and courses
   Usage modes and providers
   Benefits and Challenges

Ch_5 Based on the Visitor-centred design
   Visitor segmentation
   Visitor habits
   Visitor needs
   Visitor features

Ch_6 The impacts of the new media environment on museums
   Advantages and disadvantages
PART 3  CASES STUDY OF THE MUSEUM OF MODERN AND CONTEMPORARY ART

Ch_7  American Museum of Modern Art
   Status analysis
   Development goal
   Audience
   Digital Strategy

Ch_8  European Museum of Contemporary Art
   Nyktyaiteen museo Kiasma
   Ateneum Art Museum
   Designmuseo Finland
   Mederna museet Stockholm
   Galleria d'Arte Moderna Milano

Ch_9  Conclusion
PART 4  DESIGN PROJECT

Background
research
Personas
User Journey map
Wireframes
Visual design

REFERENCE
INDEX OF FIGURES
VISITOR CENTERED DESIGN IN CONTEMPORARY ART MUSEUM

masterpiece  idea  design  culture  photographer  exploration  storytelling  tradition  ART  produce  historical  experience  environment  challenge  expression  motion  empathy  value  influence  commerce  media  immerse  contemporary  digital  MUSEUM  participate  city  social  interactive  collection  virtual  technology  modern  architecture  time
PREFACE

RESEARCH BACKGROUND
The rise of interactive experiences in museums
From physical museum to virtual museum

RESEARCH PURPOSE
In the late 1980s, the wave of informatization began to sweep across the globe, starting with the second information revolution that was integrated with technologies such as multimedia and the Internet. In 1989, the World Wide Web began to be used by the public, reshaping the way humans communicate. Artists and designers began to express new understandings of art through new technologies, and interactivity and experience began to sprout in their artworks. The audience is no longer a bystander of the artist and his work but can participate and become part of the artwork. As an important cultural institution in modern society, contemporary museums are also actively participating in the wave of interactive experience, and are committed to providing audiences with a place to create, share and communicate with others around their content.

The explosive development of the Internet brought unprecedented attention to user experience, the concept of interactive experience has penetrated into all aspects of most people’s lives with mobile Internet and terminal equipment. About user experience we define as: A person’s perceptions and responses that result from the anticipated use of a product, system or service, including emotion, comfort, ease of use, etc.
Christoph Bartmann, a historian, believes that no place can be better reflect the evolution of “culture” in modern times than museums. Comes to the 21st century, the number of various museums in the world has reached more than 27,000, it covers many types including science and technology museums, historical display museums, natural culture museums, and art collection museums. Visit the exhibit is a popular lifestyle for modern people, they enjoy the process of immersing in the museums especially wrapped by a great atmosphere of culture with intelligent designed interactive projects.

With the development of technical, museums have great changes in terms of the modes of display and the way of viewing. In order to satisfy the complex and varied types of personalized cultural activities and visitors’ needs, the contemporary exhibition model has changed from a single linear to an interactive one. Museums no longer exist as a simple container.

For museum curators, the combination of interactive products and spatial display can enhance the interaction between humans and three-dimensional interfaces, which communicates with the artificial environment, to expanding the experiential latitude of visitors in the exhibition space. For visitors, it is more likely to generate positive feedback through cognitive new things and new knowledge acquired through interactive experiences, and it’s conforming to human social attributes.

Interactive experience design based on the user-centered, along with the constant development and growth of the mass media, encourage people to pay attention to their own needs. We’ve changed from the original way which mainly to input one way from external into both input and output. The interactive experience of the museum not only helps the cultural content to spread better but also provides more possibilities for artistic creation, work life and social relations, giving a new perspective and inspiring new creations.

We believe strongly in the power of truly immersive, multi-sensory experiences. By appealing to all the senses (including the cognitive engagement that interactivity entails) the experience will create a more powerful and lasting memory and so be more effective in inspiring action in the future.
The changes which brought by the emergence of digital technology to our world as much as those that brought us from the Middle Ages into modern society, the wildfire-like information explosion brought about by the printing techniques invented by Gutenberg in the 15th century directly promoted the Renaissance. But now every time we write a microblog, update a message on Facebook or use a smartphone to go online, we are the vanguard of the technological revolution.

Artists, filmmakers, musicians, architects, designers, and game developers are excited about the infinite possibilities of digital technology, so many imaginations and inspirations are born from it. We can experience the most exciting works that integrate digital technology into the real space in the museum, or through the mobile computer, interface to find the collection information in museums without leaving home.

The digital museum is an extension of the physical museum, is another kind of virtual existence, It’s a collection of digital images, sounds, texts, and other information about historical, scientific, and cultural influences that can be accessed through electronic media. The concept of virtual museums has already begun to take shape during the time when there are only simple web pages. At the
end of the 20th century, the earliest number of online museums were established and became the prototype of virtual museums. The relationship between the digitalization of the museum and the giants of the science and technology platform is naturally linked. In the early 1990s, before Internet gains around, Bill Gates had already registered an image company called Corbis in Seattle in 1989. Corbis did not have a clear business direction and position at that time, just based on Gates’ expectations of the future, he decided to do a digital image library, provides images to publishers, advertising design companies, movie producers, supply image services to global customers, help them express the content what they care about, and provide after-sales services such as intellectual property management. In 1991, Corbis digitized the collections of a museum and established a Corbis collection in 1992. Afterward, they gradually signed agreements with the National Art Museum, the Philadelphia Museum of Art, and the Hermitage Museum in St. Petersburg to collect their artwork in Corbis.

Apple also released a CD called "The Virtual Museum" in 1992 and provided to 1000 universities, schools and museums around the globe for free. Although this "virtual gallery" was not connected to the Internet, it unable to updated in time. However, it is already allowed users to select different works in the virtual showroom of the CD program to see the details of the work.

In addition to technology companies, some third-party platform and museums have also begun to join the wave of online museums gradually, which has played a huge role in promoting. Due to technical limitations at the time, simple web pages cannot carry too much content, however, it is regarded as a very precious source of information as digital data inventory, especially in the academic field, which has retained valuable resources for today’s research.

Today, some of the world's greatest museums visually express their mission statements by rebranding, and the major museum has its own official digital edition or virtual museum for the exhibition's data retention, for better sharing with the whole world and has also left precious materials for later research. Physical exhibitions will eventually be limited by time and geography. On the network terminal, these exhibitions and artworks will always be faithfully recorded in digital form, continue to glitter.
At first, I want to do this research is when I’m curious about the relationship of people and museum, I want to know what kinds of immersive, interactive experiences are effective in the museum and how can I create amazing one. Especially I’ve visited many beautiful, high-quality exhibitions of museums these years over Europe, I saw a lot of interesting scenes in the museum, which is a contemporary image, reflecting the relationship between people, culture and art, society in contemporary museums. I love art exhibitions and already used to immerse in the museums during leisure time like the Europeans. By researching and interviewing a range of institutions, I find that as a non-profit museum industry to a new business model development, from a single cultural institution to a brand that participates in the market competition, and the number of page views and time spent on these websites is growing dramatically as the marketing of cultural institutions shifts increasingly to social media such as Facebook and Twitter.
This is an era of experiential, while interactive experience design has been popularly used in museums, but still exist inevitable pain points. For example, nowhere to answer the question about the artwork in the exhibition process. People are keen to discuss clothing, food, shelter, travel, and big affairs on social media platforms, however, there is no place for art learning and communicating, which is worth reflecting on. In addition, how to avoid empty, meaningless interactive experiences is also worth thinking about.

So, the main research objectives of the thesis in the following three aspects:

1/ Summarize the characteristics of contemporary art museums by studying the effective interactive experience of museums and attempt to change the stereotype of the traditional museum to open new ideas.

2/ Through the case studies of virtual museums of contemporary art and various kinds of interactive experiential museums to qualitative research on the relationship between human cultural entertainment habits and cultural communication, in order to gain insight into the deep needs of the public, thus providing a reference for innovation in cultural communication and museum interactive experience.

3/ Through the research of the public visiting habits, based on the user experience methodology to help museum curators to look into the targeted interactive experience designs and methods. Provide citizens with better museum experience and knowledge services, encourage citizens to study autonomously in museums, maintain the positive interaction between the Museum of Contemporary Art and the visitors.
PART 1
OVERVIEW OF MUSEUMS

Ch_1   New features of the museum

Ch_2   Interactive mode in the museum

Ch_3   Museum construction and audience participation
“Museums are a place for wonderment, a place of solace and subtle reflect, but also a place for discourse and debate.”

— Steven McGuinness

Today’s museums are also brands, they exhibit and celebrate our culture and art, the manufacturing and design to stay modern and relevant by rebranding, which includes the brand identity, the image of the building, and the digital design. Although MoMA’s director of architectural design, Terence Riley and the director of graphic design, Ed Pusz, said: “In the Museum of Modern Art, we don’t use the word ’brand’, we prefer to use the term ’spiritual’.” But what we have to admit that museums such as the Louvre, Guggenheim, Pompidou, and V&A have developed into a more mature brand and seeking overseas expansion.

In the book Profit or Not to Profit, Anheir and Toepler divide the museum’s income sources into two categories: admission fees and affiliated services. However, organizing art exhibitions and events is a particularly costly business, studies have shown that the museum entrance fee did not generate enough profits to maintain the general business of the museum. There are many ways to generate incomes for the museum, such as museum stores, cooperation with commercial organizations, travel agencies, and corporate sponsorship. In addition, restaurants and coffee bar, renting museum facilities for special needs, providing parking services, selling souvenirs, exhibition books, catalogs and postcards, etc.

Today’s museum store is an important source of incomes. Sizonenko-Leventhal believes that the development of museum stores is a good evidence of the market-oriented concept of museums. In addition to the museum’s on-site retail store, museums may also open stores outside the hall, shop through the website or mail the order catalog. The boundaries between museums and commercial brands as non-profit organizations are blurring, it creating a good return while engaging more visitors. The industry chain of art, design, and commerce in the world is changing, everything they do is to make their position more valuable in the new industry chain.
Museum practice has undergone significant changes in recent decades, today’s museum is actively working to provide exhibits to more ordinary audiences. They abandoned the signboards for showcase the high culture, trying to narrow the gap between museums and society, make the museum a place where people could experience culture and art, rather than being repeatedly instilled with symbolic rank knowledge. This has slowly made community engagement and citizen participation in a central institutional objective.

In the past, we thought a museum just provide the great work of art to people for enlightenment and education. The main work of the museum was internal, mainly focusing on the purchase of collections, the care of collections, and some related academic research through exhibits and some publications. But now the museum is more about turning to provide a participation, a guidance to public, this public services with educational experience so that people around the world can live more meaningfully and productively in a diverse society, and at the same time serve as a global citizen to face all of these challenges in our lives.
“From being about something to being for somebody”, the museum is getting more and more outward. It encourages more people to learn. It’s not only about cognitive learning, learning about content and knowledge, but also aesthetic and emotional learning. People learn through senses and emotions, and also on community and social learning, learn about you and others, your relationship with the world, more people are involved in museums to change a need for society.

One of the goals of the museum is to help people realize their special learning needs. For example, many schools and museums are now collaborating on certain courses, and also offers some family activities. It provides a sense of comfort and confidence when teachers and parents use the museum to educate their children. Through an interactive relationship, the exhibition conveys the richness and interest of contemporary art or thoughts, it is also able to attract more viewer, children to their parents, and even their grandparents into a place like a museum.

One of the roles of the museum is to provide the public with a relevance, it wants people to see this world, to find the truth about what we have to face, including community and environmental issues. The museum is a market about thoughts, not just a place of the surface-oriented audience-centered creation of more exhibition experiences, it wants to be a bridge to a real life, which means participation, a practical and positive participation for things of our time, to stimulate more discussion, and make the voice of the visitors be heard by others.

The exhibition is a very good opportunity to connect us with the artwork, and then with the artist to form a space for communication. Museums scattered throughout the city are more like a landscape. During the 19th and 20th centuries,
many strange and interesting images came from some particularly important exhibitions. For example, the city-willed World Expo, or some academic salons, and of course more experimental biennales or documentary exhibitions. And it has become a platform for a very important transaction in which art is involved in the economy, intervenes in politics and our lives.

The democratization of museums is more prominent in the promotion of “cultural democratization”. The basic definition of cultural democratization is more like the French writer Malraux once said: "to let more people approach art and spiritual products." In a space like a museum, everyone can communicate with artists on an equal footing, even everyone has a possibility to become an artist. The democratization of opening up the true depth of the data available responds to the social responsibility that exists for the museums in taking historical events and aligning them with the events of the past.

Some of the museums in responding to the challenges of the digital revolution to focus on 3 key areas:
- Democratizing their data and collections;
- Responsibly embracing emerging technology;
- Preparing for new realities.

As a public space in the city, the museum has always been committed to the participation of citizens in an open manner and structure. It provides the general public with a way to enter such a theme and understand the artist's work in the museum, inspire people to think about human desires and some issues about development.
PART 1  OVERVIEW OF MUSEUMS

Louvre Paris

The Metropolitan Museum of Art

Victoria and Albert Museum

Guggenheim Bilbao

Guggenheim New York
Museum modernisation

With the advent of the information age in the late 20th century, museums, one of the urban cultural visiting cards, have become important targets for promoting urban cultural development and art consumption. Since the tide of museums in the world, attracted the attention of many outstanding architects, one after another, modern museum buildings with original and futuristic have entered people’s horizons. They are often expected to revitalize a city from the beginning of construction. As a public project, museum architecture is an expression of a civilization. In addition to the new buildings, the historic museum is also changing to adapt to the new look of the city. There are also many landmark buildings that have been planned by the government to become a new center of art & culture after a long period of old building renovation.

There are quite a few old industrial areas that represent the history of the times meet art, culture, fashion, and transform it to create a vitality with the harmonious interaction with surroundings. Perhaps due to the large size of the space and the flexibility of use, spacious factories are often considered a good choice for large exhibitions. The old factory is also a testimony to the changes in urban development. It is reserved for new uses then has become an emotional connection between the past and the present, history, and reality.

There are many cases of museums or art centers transformed from power stations in the world. Perhaps the best known is the Tate Modern in London. Other examples include the Museum of Contemporary Art Shanghai opened in 2012, formerly known as Shanghai South Power Plant (1955 - 2007), witnessing the
rise of Shanghai’s industry; A contemporary art museum in Toronto, Canada, was also converted from a power station and is the most famous art museum in the country, it’s called the Power Plant Contemporary Art Gallery. Many of them retain old industrial architectural elements, such as its metal structure, as well as tall chimneys (which are often used as natural ventilation wells to reduce the energy consumption of the museum).

The government has a clear goal of reform in the process of spare no effort to promote the construction of local museums. It is usually based on the improvement of the urban transportation system and public facilities, injecting new cultural service industry projects and optimizing the allocation of investment projects. The architecture of the contemporary museum exists to some extent as a work of art, it is attractive enough in the visual, the development of cities, architecture, art, economy, and commerce is closely linked, with the construction of museums as the carrier.

In addition to a large extent of publicity and cultural authority, museums are increasingly economically capable in the process of modernization of developmentalism. (Developmentism is a concept of political science. In short, it is economic development. Use the logic of this market to allocate resources and then rely on the market to build a strong economy, and this economy is connected to a larger market.)

The world’s largest museum of decorative arts and design V&A (Victoria and Albert Museum) opened its branch in Dundee (V&A Dundee), shoulders the mission of helping a declining Scottish city regain its competitiveness. The museum built for nearly £80 million, was designed by Japanese architect Kengo Kuma. He likes to use bamboo, wood chips and other materials to form a Mortise-tenon structure with a sense of oriental charm. Similar ideas are clearly reflected in the interior and exterior design of V&A Dundee. The gray facade of the museum is layered...
by rough concrete slabs, which form an angular and layered effect, parked on the shores of the River Tay, like a warship. In the interior, the stacked planks and the concrete façade form an irregular shape, and the overall colour tone turns warm and bright, giving visitors a surreal visual experience. According to Kengo Kuma, this design avoids the boring overall wall and creates a sense of intimacy with space. The ultimate goal is to make the building as integrated as possible into the environment. The relatively complex design directly pushes up the construction cost and lengthens the project cycle, but even if it has greatly exceeded the initial budget, curator Philip Long is still confident in the operation of the new museum.

Dundee is not the first city to place hopes on a museum to drive the development of the entire waterfront and the whole city. Harvard University has proposed the “Bilbao Effect” to explore the benefits that museums bring to the local economy. Bilbao is a small town in Spain, entered a recession in the 1980s. In 1997, Bilbao invited the Guggenheim Museum, the star of the modern and contemporary art world. For Bilbao, Guggenheim is not just a museum that collects and displays contemporary art. It's not like museums in New York, London, and Paris. Art and cultural institutions are like delicious desserts, which add attractiveness to the city. It may be a pity to lose any of a museum, but it does not hinder the development of the whole city. Since the day the Guggenheim was completed, it has become the engine of the city. The opening of the V&A Dundee makes Bilbao an internationally renowned tourist city. With an economic value of 500 million euros in 3 years, the hotel, catering, shopping, and transportation industries quickly earned back the construction cost of the museum. In the UK, the opening of the Tate Gallery in Liverpool has also increased the appeal of the Albert Dock.

These three museums are both located in the port. Ideally, V&A Dundee can replicate the successful experiences of Bilbao and Liverpool to help transform and upgrade the entire city. Due to the loss of the protection of market barriers, the city facing the industrial landslide is basically irreversible, like Dundee. This makes it a natural choice to build cultural brands and compete for cultural capital.
In today’s Internet age, the virtual museum’s users are unprecedented, far exceeding the field visitors. This is to let us think more about what a museum is no longer a place where everyone comes here to see something, but more of an ecological environment, an educational and cultural environment, so that everyone can be together, no matter they can continue to interact before or during the visitor after the visit, or they have never come to the physical museum to visit, they can also interact.

The modern museum is no longer alone building in a specific location, but infiltrates into our lives and becomes a place everywhere, so whether in a city, in a country, in the world, and ever since they have never been to this museum, they are still affected. Extending the public education resources of the museum with new technologies and media is its future development direction. The time people spend online has reached a stable level, every website competes fiercely to engage users. Anything that involves people’s location, saves users' time, and brings the virtual network closer to reality, especially from a geographic perspective, is big news. The geographical space difference is reduced, and the cultural differences are magnified. Works can be arranged according to age, theme or larger scope. Such information exchange and collision will undoubtedly accelerate the progress of human civilization.

The fundamental purpose of digital construction of museums is to expand the social lifelong education function of physical museums. A huge information base formed during the process of resource integration, develop information resource sharing do more satisfy the needs of public education. Through the integration of
existing scattered information resources on the multimedia platform, a complete, independent classification of the guidance system can be established without being limited by time and space. Anyone is able to find the information they need in any system terminal with reasonable hardware configuration, and it is no longer limited by the influence of the tour routes and viewing angles in traditional museums. The public can not only use the museum resources through the network repeatedly without affecting the collection but also reduce the cost of obtaining artistic resources.

In addition to the museum's collection resources, many contemporary museums offer online courses for different types of people. Experiment with some videos, and put different content online. In the practice, these online learners organized an online community spontaneously. They can share their knowledge and learning experience, they can recommend reading to each other, they can share a lot of good works, they can also come together to see the exhibition. So this is how does this digital museum give back to real one, which naturally forms a good communication atmosphere online and offline.

At the same time, digitization is also a major feature of contemporary artworks in museums. Technology has changed the lives of each of us and also has a profound impact on art. Short films, interactive devices, and augmented reality sensory experiences have become common forms of the exhibition in art museums. For example, when the Digital Revolution of the Barbican Museum in London was officially unveiled, “DevArt” launched four works in the exhibition. "DevArt" is a creative device made by Google using computer code. In Play the world, Zach Lieberman turned all the digital radio stations in the world into a large keyboard. By tapping on the keys, it combines the popular hits, traffic reports, advertisements and everything else that is transmitted in the airwaves to create a unique music score. Digital technology has brought infinite possibilities for art. From the artist’s creation itself to the carefully arranged exhibition mode by the curator and the way of the audience participates, revolutionary changes have taken place, the topicality and dissemination of artistic and cultural events have never been higher.
This year, the first digital art museum in Paris, Atelier des Lumières, was unveiled. The opening ceremony was the limited art exhibition of Austrian painters Gustav Klimt, Egon Schiele and Hundertwasser. Through the projection image, the works were re-spliced and designed with high-quality placement in the space, still retained delicate brushstrokes, not only the 360-degree wall, but also the floor, and the scene was changed with the background sound. The curator adds the script, sound and light effects into Klimt's representative work to recreate, bring the viewer into the work, generate visual and auditory communication and interaction, Klimt's work became a part of the viewer's own sensory experience, more than static. Klimt likes to use a lot of gold, combining Western classical aesthetics, oriental elements and special craftsmanship, such as gold leaf decoration. The exhibition is more conducive to the expression of metal texture through high-resolution digital projection and animation, creating an immersive artistic atmosphere.
In recent years, the boundaries between art and design have been expanding, challenging people’s stereotypes about museums. “Art exists and has existed in every known human culture and consists of objects, performances, and experiences that are intentionally endowed by their makers with a high degree of aesthetic interest.” G. Ellis Burcaw mentioned in the "Introduction to Museum Work" that the collection of art museums includes "artistic works of civil society”, such as painting, photography, statues, furniture, jewelry, fabrics, metal products, etc; folk art and human handicrafts before urbanization. Friedrich Waidacher further expands this view in the "Handbuch der Allgemeine Museologie", he believes that artworks can be "the result of human art creation in various forms, including art and applied arts, crafts, music, architecture, literature, photography, film, drama, and all the art of acting.” It can be said that with the development of contemporary art, artistic concepts and artworks constantly appear in new ways. More and more ready-made, new media, and live behaviors enter the museum in a form of installation, dynamics, and uncertainty.

When Paola Antonelli (a senior curator of architecture and design at the Museum of Modern Art in New York) brought 14 video games including Pac-Man, Tetris, Sims, and Mysterious Island to MoMA, was unacceptable at the beginning. When MoMA first announced that video games would be a permanent collection, Guardian art critic Jonathan Jones published an article immediately titled "Sorry, MoMA, video games are not art.” His claims have been widely circulated in social media, sparking heated discussions. Antonelli believes that the controversy is predictable, she responded, “MoMA's collection is for overall, and we organize it into departments because human knowledge is like this, no one can touch all of the human consciousness.”
Expanding the meaning of art itself is also one of the missions of the museum, blurring the boundaries between "art" and "other" creations, such as design, architecture, film, and fashion. On November 7, 1929, MoMA's first exhibition provided a unique artistic perspective to New Yorkers. The curator at the time, Alfred H. Barr, introduced the works of Cézanne, Gauguin, Shula, and Van Gogh to the Museum of Modern Art. Although it was in the difficult period of the Great Depression in the United States, the one-month “post-impressionist” exhibition attracted 47,293 visitors. Maybe Alfred H. Barr wouldn't images that the artist he exhibited for the first time at MoMA would be the brightest name in the history of modern art. Barr likened the art museum to a laboratory. He encouraged innovation and hoped to break the traditional concept of art museums.

Contemporary exhibitions increasingly showing independence and initiative, people began to try to change the structure of pure, bright, neutral space and a standardized public display and viewing system of the Museum of Modern Art, which from the 19th century, the "white box" type of exhibition. The exhibition is no longer limited to the linear display of the work. Instead, from the curators carefully plan and prepare, or raise a question to explore the current society, or try to arouse people's broader thinking about art and design, or inspire people with another artistic perspective. The Museum of Contemporary Art is not only an authoritative space and educational space for cultural certification but also a public art place for participation by all people. Exhibitions and discussions triggered by exhibitions are conscious cultural expressions.

In addition to the official museum, some artists are trying to present their works and conduct some experiments in certain alternative spaces. The open environment has also led to the emergence of many independent curators who are not affiliated with any institution. Therefore, the types of museums today are very diverse.
The Museum of Failure is a one of a kind international collection of more than 100 innovation failures. The museum was built by Samuel West, a Swedish psychology professor who was tired of successful stories. He thought that "the annoying success is similar, but each unique failure has its own differences." Three years ago, as part of an innovative study, Samuel began collecting failed products that come from an innovative company he defined, which is able to consistently announced success products or services. In the meantime, he also visited the Lost Love Museum in Croatia, the museum specializes in collecting gifts abandoned by couples, thus Samuel thought that a failed product may also create a museum full of rituals. Samuel has a higher appeal except to making people aware of the inevitable failures in the process of innovation, both the company and the government could admit fault, discuss current issues frankly, learn from the failure.

Contemporary museum is no longer a storage room for past cultural classics or just viewed as a library, an exhibition hall, a solemn, sacred place. It is a middle ground between real life and cultural thinking, filled with all kinds of unexpected grotesque materials, and even a test ground that breaks through unknown obstacles with seemingly absurd ideas. All ideas come from life, but they also challenge reality. Anyone can use the materials from real life to restructure, creation to derive new meanings and perspectives.
“Interactive Art” is an art that engages viewers in a work or creation. It is usually based on a device and has to communicate with the audience to achieve an integrity, the audience itself is also a part of the artwork. They usually work through computers and sensors, respond to actions, heat, changes in weather, or other input methods that respond to people's behavior or state.

If we divide the history of artistic creation into three stages: Renaissance realism art is the reproduction of life; Later, modern artists such as Cézanne and Matisse expressed their ideas as the foundation of artistic exploration; In this era, experience is the keyword of contemporary art, the relationship between visitors and art, adding more concepts of interactive.

Dynamic Art Exhibition is the normal state in modern museums. It combines a variety of high-tech, sound, and light elements to enhance the interaction between people and technology through artistic expression. People who grew up in front of the Internet has already changed their concept of art, their sense of participation and interaction are unprecedented. The emergence of interactive art has enabled more and more people to participate in art, come to the museums.
Including engineers and computer operators who have nothing to do with art in the past, they began to create artworks from perception through the use of new digital technologies. The painter Malevich once said: “Art doesn’t need realism but truth.” This truth is often expressed as realism technology and real emotions in traditional artworks, however, the interaction and new media art which born under the development of science and technology, using virtual reality and the scene composed of various integrated media to achieve this real role.

The prototype of “interactive art” practice appeared back in the 1920s. The earliest “interactive art” invited the audience to “touch” the works and “walk in” the works, broke the traditional way of artistic appreciation. With the liberation of ideas and the innovation of technology, the form of “interaction” between art and audience is increasingly diversified. Artists began to give viewers the “power” to enter the work and creation process in their own works, and the audience gradually became part of the artwork. In the 1990s, the rapid advancement of computer technology promote the form of interactive art become more and more popular, museums and galleries began to incorporate this new creative category into their own exhibitions and collections. Thus facilitate many large-scale exhibitions dedicated to the theme of “interactive art”.

Interactive Art brings aesthetic impact far more than expected and also brings the new audience to the Museum of Contemporary Art. The involvement of technology balances the sense of distance in art, the value of the works are no longer limited by the inherent form, the dialogue with the audience has increasingly defined the new face of artistic creation. Public spaces and museums also provide a larger platform for the development of interactive art in the city, art moves towards a broader audience.
Contemporary art is too mysterious to many people as if it is always with a veil, normally can’t understand it. Actually, contemporary art is uncertainty. When you are in an exhibition, or when you face a contemporary artwork, you don’t understand it, what you are actually embodying is just about contemporary when you feel suspicious. Interactive art is a great opportunity for us to get a close look at contemporary art. Due to its unique transformation, penetration, and participation, interactive art breaks the rules of mechanical frame division and organically integrated thinking and display, introduce the audience directly into the experience of art, naturally form a dialogue and communication channel between innovative ideas and daily life.

Interactive artworks and visitors are interdependent since each visitor is involved in the creation, each visitor has a unique interactive experience for their own. Watching is no longer just in the visual aspect, the sensory experience which art provide us with is greatly broadened. Thus Interactive art has become one of the ways in which museums engage audiences.
Display through interaction design

Interaction design is an important means of interpreting exhibits and themes applied in museum displays, it combines all the pictures and text information related to the exhibits into a new narrative language, enhance the reading experience through the form of visualization, helping visitors access key ideas and content related to exhibits easily. The exhibit of the modern museum is no longer just a simple display. It is transformed from an artwork-centered exhibition to a visitor's perspective, thus the audience's viewing experience is more diversified.

Broadly speaking, interaction is a process that causes multiple parties to influence each other's changes, centers on "embedding information technology in a material world full of social complexity." It defines the content and structure of communication between two or more interacting individuals so that they can work together to achieve a certain purpose. Interaction design was born in the 1980s as a new discipline focusing on interactive experiences. It was proposed by a founder of IDEO, Bill Moggridge, at a design conference in 1984. It was first used in the design of the human-machine interface. The development of information technology has made this technology widely used in any field.

Interaction Design and Space Exhibition has been split by academic and institutional education, but both are closely linked in the development of their respective fields. Interaction design focuses on the interaction between people and products, creating an organic connection between products and users, and the interface is the link of this interaction. Professor Lev Monarch once said, "The culture of the 19th century is defined by novels, the culture of the 20th century is defined by movies, and the culture of the 21st century will be defined by interactive
interfaces.” The museums of the new era not only shoulder the responsibility of collecting and research but also accurately establish and spread culture. In order to make the public better receive cultural information, the museum pays more attention to the communication with the public and the degree of its participation while deepening the development of public education functions, guides the visitors be proactive to understand the background of knowledge through interactive design.

The multimedia interaction modes in the museum display space can be roughly divided into four categories according to the technology. The first category is the interactive display of human and multimedia. It usually uses infrared sensors, thermal and pressure sensors, humidity and temperature sensors, video capture and other capture devices, combined with touch film, image recognition, positioning and other identification devices, using image recognition technology, motion tracking technology, digital synthesis technology, multi-channel projection image stitching technology, three-dimensional space technology, intelligent media device control system, real-time image interactive analysis system, and then through projector, display and computer Feedback of information, ultimately achieving interaction between participants and virtual scene systems. Its application in museum practice is similar to virtual flip book, desktop interactive projection system, virtual camera system, digital media touch interactive system and so on.

The second category is the comprehensive use of holographic imaging technology and multi-class sensor multimedia interaction to achieve a two-dimensional to three-dimensional transformation, enabling viewers to perceive the spatial scale of virtual images in physical space.
Holographic imaging technology mainly uses the principle of interference and diffraction to record and present three-dimensional images in real space. Practical applications such as 360-degree holographic imaging interaction, phantom imaging system, holographic screen imaging system, holographic projection screen.

The third category is virtual reality and augmented reality. It integrates scenario dynamic simulation technology, computer real-time 3D graphics technology, wide field of view display technology, sensing and tracking technology, network, stereo, and other technologies. The sensing and sensing device creates a virtual world or 3D dynamic view for the viewer. The computer simulation system of the entity behavior enables the viewer to obtain an immersive interactive experience by stimulating the viewer's vision, perceptual hearing, touch, power sense and even smell. Augmented reality technology enhances the user's perception and interactive experience of the real world through the information provided by the computer system. It is proposed at the same time as the virtual reality technology, and the real environment can be enhanced by the mobile phone. They are often integrated into technology practices such as virtual roaming and virtual driving.

The fourth category is the use of somatosensory technology to accurately interface interactive devices with physical space to achieve interaction between viewers and virtual objects. On November 19, 2006, Nintendo launched the home game console Wii, the first time to introduce the sense of body into the video game console. On November 4, 2010, Microsoft launched the Kinect smart somatosensory device for XBO game consoles. It uses a 3D somatosensory camera to perform real-time image acquisition, voice input, etc. The birth of this technology has brought us new ways of playing games and is widely used in various life scenes, whether it is a trade show or a museum.
The application of interactive technology to the design brings a new possibility to the exhibition mode of the museum. The multimedia language combines the narrative of the scene with the scene concept of the space so that the viewer is able to obtain multi-dimensional display information in the process of interaction. Artistic design thinking in the mutual penetration of multimedia interactive technology, mold a sense of substitution and a virtual concept that can help viewers to understand cultural history deeply. Let the audience enter the interior of the work through a variety of sensory interaction channels, promote dialogue between the viewer and the work, and build a true connection between the work, the environment, the viewer's perception and the viewer's cognition, inspire their thinking and re-creation, awake their motivation to explore the practice and learning actively. The interactive experience brings timely feedback to the viewers, make the information dissemination of the exhibits more vivid and effective, and greatly improving the interest of the viewing process.
Lectures, forums and workshops

Now, lectures, forums, and workshops have become an effective activity for museums to provide an educational experience for the public. The museum hopes to provide an educational experience different from public schools and attract more new visitors. One phenomenon that enhances the museum's interactivity is that museums are creating more and more young people's project, developing them as audiences of future museums, providing them with activities, connecting with them, providing more different narrative methods, different perspectives. And then better reflect the needs of the community and resonate.

As a facility for citizens, the museum actively exerts its influence and a strong calling to cooperate with schools, social institutions, and private companies to provide targeted cultural communication-oriented public services for different communities. As a space outside of home and work/learning, the museum has become a mode of life for us today. Almost everyone can get what they need in such a third space, where they can participate in activities with family members or friends, listen to the public lectures by an artist they are interested in, or participate in a workshop with help of the master craftsman. The museum’s exploration and practice of new forms of education have greatly promoted the development of public education in terms of definition, form, and scope, and has become an ideal place for citizens to gain an educational experience.

There are nearly 400 “Children’s Museums” in the United States except to the popular museum which has its own museum lectures, many of them offer special art courses for children as an important supplement to the school education. It's different from traditional visits, these museums emphasize the concept of “experience” and “interaction” for children, and combine the characteristics of the
museum to build a perfect museum education system. In addition to the United States, there are more than 20 countries around the world established children's museums. As a key renovation project of the city, especially the children's museum education in European countries is very mature, civil society organizations, off-campus institutions, and schools are involved.

Many museums invite artists to participate in lectures and some other activities to share their artistic practice with the public, and the public can raise any doubts about themselves, discuss art together, discuss a social phenomenon, discuss today's problems, etc. At this time, the museum is a platform for communication. The public and art, the artist, and the whole society form a relevance. The museum provides the artist with a place to interpret his own creative thinking and also provides an opportunity for the public to understand the artist and participate in artistic creation in close proximity. This two-way benefit is the embodiment of the value of contemporary museums. Through this large-scale interaction, even has a possibility to remove some barriers between different communities, is undoubtedly provide more possibilities for social progress.

Lectures, forums, and workshops not only provided a rich cultural experience for people with different needs but also brought the museums closer to the communities. Eliminate the official, serious, and inaccessible stereotypes of the museum, it is more inclusive to some extent, there is no longer a high threshold for serving only small groups of people, more and more people from different fields are involved in museum activities. The continuous expansion of the project has benefited more people, and it has also promoted the popularisation of contemporary art and cultural communication in a good atmosphere of communication and integration, and also promoted the influence of museums.

The fascination of the museum is not what it exhibits, but the stories that are imagined and created through these things. Lectures, forums and workshops are a great place to make these stories happen.
Ever since the Internet, we have become a whole new media era. New media is a way of thinking that has been opened from this era. It is a process of sharing, reorganizing and optimizing. If you simply associate it with technology, it is too limited. The new media era is a life circle that we are living and cannot escape.

The concept of new media is the only relative, it is constantly changing, and it has different forms in different historical periods. Today's new media is to use digital technology, network technology and mobile technology to connect computers, mobile phones, digital TVs and other terminals through channels such as the Internet and mobile communications to realize the media form of user information exchange and communication for us. The timeliness of the dissemination of new media information makes it possible to synchronize "news" with "news release". Especially nowadays, interactive news based on the fifth generation of HTML language, integrating graphics, text, animation, video, and audio has shown an amazing spread of power on mobile phones.

New media is also widely used in museums. At the end of the last century, the Smithsonian Institution began to introduce new technologies in the field of museum cultural communication and museums exhibits, established websites and social platforms for different ages and interests and developed a variety of application for mobile devices. The achievements of these new media
developments are the outcomes of conforming to the historical trend. It not only expands the influence of the cultural communication of the museum but also gives the masses the opportunity to obtain the first-hand information in the first time and enjoy the convenience and interactive entertainment experience which technology belt to us.

The use of mobile new media involves all aspects of museum innovation, such as museum information consulting, mobile navigation services, wireless network-based enhancements, museum back-office applications, etc. A slightly larger museum has already established its own network base. They not only realize the efficient organization and retrieval of massive collection information through the digitization of new media content, but also build a fusion map, text, audio, video, and non-linear content organization and browsing database represented by hypertext. Through these network sites, they are closely connected with the audience and practiced the multi-media integration of the infiltration culture communication system and professional knowledge service promotion. On their official web platform, it is easy to get all kinds of information about museums, such as recent exhibitions, events, news, publications, etc. Some museum websites also offer videos for online learning and video reviews of live events such as lectures, through the further spread of mobile new media, the cultural content of the museum’s main purpose of public education will benefit more people. At the same time, the museum has also registered its official account on the mainstream social media platform, release the latest exhibition news and event planning in real time, participate in the discussion of hot topics to attract more visitors of future museums.

In October 2016, MoMA has included the first 176 emojis in its permanent collection. Today, the younger generation thinks that emoji, gif and sticker expressions express their thoughts and feelings more than words, with nearly 1,800 in use, emoji are an increasingly complex companion to written language. Kurita’s emoji are altered human behavior to some extent.
Content experts are key to an engaging social media presence as well as a team effort between them and the social media team. The purpose of our social media presence is to connect people to people to better understand the past, and the present, for a better future.

The Chicago Museum of History and Nature launched an event called “Monograph Monologue”, which is an effective strategy for a museum to get creative attention. The museum invited local residents to record dubbing of the collections in the museum, considered that the same standard commentary has long made young people feel boring. It had a flash studio in downtown Chicago, and anyone can go there to record lines for precious dinosaur fossils, animal and plant specimens, etc. This studio was moving around in Chicago, and the content of the recorded lines are unrestricted. It will prompt you: If a dinosaur can talk, what does it say? Perform your imagined dinosaur monologue in the first person’s talk. Soon after, this audio may appear in the museum and be delivered to visitors via a smartphone. Leo Burnett, the advertising agency that planned the event, also wrote more than 100 short scripts as examples. These texts have both humor and historical knowledge. Carlos Murad, the creative director of Leo Burnett said that the studio enhanced the museum’s exposure outdoor, in addition to turned people’s ideas and talents into a part of the exhibition.
In view of online celebrity and traffic as the first productive force is the most popular in the world, the contemporary art museums are looking for a breakthrough from internal. It seems that every museum is actively expressing the side that it is good at play in social media. This summer, #MuseMeme appeared within the Twitter accounts of major museums around the world. The topic is said to have originated in the UK. The main purpose is to attract people to go to the museum to play, tell people that the museum is not only suitable for schools to organize visits, but also suitable for everyone to date. Various museums turned their collections into the meme, which triggered a wave of trends.

Today's cultural market is increasingly competitive. Cultural institutions represented by museums are seeking the ways to participate more in the lives of residents and to establish exchanges with people.
The globalization process and the construction needs at the national level promote the development of the museum constantly. The whole world spent $84.5 billion dollars to complete the construction of the 101 cultural facilities in 2016, another 34 countries announced that they will spend $85.4 billion continue to build another 136. Among them, Americans completed or renovated 41 cultural facilities, remains the biggest hub for cultural construction; Europeans have spent the most money, reach $39.3 billion dollars; Followed by Asia, completed 17 new cultural institutions and plans to build another 11; The $1.26 billion Louvre Abu Dhabi is the most expensive arts building of 2017 in the Middle East.

The data comes from a report called the Culture Infrastructure Index, produced by the US AEA Consulting served for the Cultural Creative Network, the Global Cultural Districts Network (GCDN), announced on November 21 this year. At the beginning of the report, AEA consultants began using Google Alerts to focus on cultural construction projects with budgets of more than $10 million worldwide two years ago, they completed construction in 2016 or have announced construction plans. The report traces the cultural construction projects that have been tracked into three categories – cultural centers/parks, performing arts centers and museums.
The museum remains the most mainstream option for all cultural institutions. In 2016, 77 new museums were completed worldwide, account for 76% of the total. In addition to the new museums, the old museums around the world are also expanding. In 2016, including the completion of the Louvre in Abu Dhabi, which was not counted, the British V&A East Pavilion, the British Museum’s branch in the London Olympic City, the expansion of the Tate Gallery, and the Pompidou Centre in Brussels, Belgium have a new trend. Today, there are more and more museums and art centers in the city, not only related to people’s love of art and culture, or for the pursuit of spiritual food, but also including certain specific construction purposes, such as regional urban upgrading. Just as audiences have been, arts facilities are increasingly expanding the definition of cultural offerings. “Many of the buildings coming online have expanded the definition of a cultural building—from arts to entertainment and further into ‘experience,’” explains Adrian Ellis, the founder of AEA Consulting, which produces the report. Many of the new venues are now associated with coffee and snacks, leisure and hospitality strategies. New buildings including Zeitz MOCAA in Cape Town and the Guardian Art Centre in Beijing, for example, incorporate hotels, event spaces, and other uses, a reflection of the fact that arts infrastructure “has come to play an important part in the experiential economy.”

The Culture Infrastructure Index also puts forward a point: although in 2016, the most important cities in the world - London, Paris, New York, Sydney, Shanghai, Shenzhen, each has 4 or more projects under construction or have already completed, however, the input in cultural projects of the top 75 cities in the world account for only 31% of global completed projects and 35% of projects in the plan. The report believes that this is a performance of decentralized. Big cultural cities like New York and London are a trend to a state of saturated, and those small cities feel that the opportunities are coming.

The report “Cultural Track 2017” jointly released by marketing company LaPlaca Cohen and research and analysis firm Kelton Global shows that current audiences are more willing to treat a market gathering as a cultural experience rather than
listening to an opera or go see a ballet. The authors of the report pointed out that the definition of culture, a synonym for almost elegance, and the way of self-improvement, has now become ubiquitous, and the word “culture” itself is becoming not so important.

“Visitors around the world are breaking the normal state of culture and reshaping them,” said Maggie Hartnick, a head of LaPlaca Cohen. Today, culture can refer to Caravaggio, the Coachella Music Festival, the opera of Don Hauser or the wandering musicians in the subway station. In fact, the people surveyed reported that they were actually less loyal to cultural institutions than to restaurants, bars, or retail stores.

According to the Ministry of Culture and Tourism, the scale of Chinese museums has increased rapidly from 1996 to 2017. In 1996, there were only 1,219; In 2017, the number of museums reached 4,721, account for 47.5% of cultural facilities. As
of 2017, the National Cultural Relics Agency owned 5,092,320 pieces of cultural relics, an increase of 14.4% over the end of the previous year. Among them, the museum’s collection of cultural relics was 39,938,200 pieces/set, account for 77.3% of the total collection of cultural relics. According to the National Bureau of Statistics, the number of visits to Chinese museums has increased year by year in 2006-2017. In 2017, the national cultural institution received 1,147.73 million visitors, of which the museum received 917.72 million visitors, an increase of 14.2%, account for 84.7% of the total number of visitors received by cultural institutions.

The first-tier cities, Shanghai, Beijing, and Shenzhen have completed a total of five buildings. Other new museums have appeared in Handan, Suzhou, Chongqing, Chengdu, Wuxi, Suzhou and Nanjing. Museums with more mature development and high public participation are still concentrated in first- and second-tier cities, Active contemporary art museums are often with a combination of social spaces, even many shopping centers have moved art exhibitions into commercial buildings to enhance brand value and attention through the cooperation. The audiences are also willing to accept such a model, they are more eager to have an entertaining experience than their cultural education. Especially on weekends after a busy week, there is a special need for a place that both relaxes and could help to improve the aesthetics or show the taste. If it has possible to meet someone with similar interests that would be more perfect.

Chinese museums have gathered more young people, especially post-90s, post-00s generation, and the post-80s' parents who have a wish to give the best education for their children. Most of them trust the public education of museums, and they are also looking forward to obtaining the growth of cultural knowledge from museums; They are familiar with the web and are willing to have a museum experience through digital technology; Many of them also really love arts and actively participate in the creation and dissemination of contemporary art.
Today, we can see various museums, as the Museum of Failure, the Museum of Broken Relationship, the American Writers Museum, the Museum of Selfies and so on. The emergence of a growing number of private museums around the world, global culture is gradually turning to privatization, in addition to reflecting people’s thinking and expression, behind this phenomenon, there is actually various collectors' consideration of their own economic situation. In the United States, for example, the legal system allows for the collection of equivalent art, cash, and stock donated by households to deduct taxes. Then these wealthy collectors could continue to enjoy their collections in the art gallery while protecting the capital gains.

Authors who wrote the Cultural Track 2017 report surveyed the responses of 4,035 participants online. The first ranked respondents feedback in the number of reasons for participating in cultural activities is “enjoyment”, which had 81% of respondents supported, while “interested in content” and “recruiting new experience” ranked second and third. When it comes to the biggest obstacle to participate in cultural activities, many people think that those activities or cultural institutions are not for the "people like me" to go. When respondents asked to describe their ideal cultural activities, the most mentioned words were “social” (34% mentioned), “interactive” (32%), “live” (31%) and "first-hand direct experience" (30% of people). Only 20% of respondents said their ideal cultural experience should be “deep”.

Nowadays, the idea of making exhibitions easy to attract Instagram users has slowly penetrated into museums. Everyone is used to get the information they need from the internet, and they always have a sense to what they saw online and give a feedback immediately. As the digital revolution has reshaped almost all of the audience’s consumption patterns, museums are scrambling to satisfy the expectations of visitors’ changing experiences. More and more modern art museums are renovating buildings to create more space for social, dining and other non-artistic pursuits.
PART 2

VIRTUAL MUSEUMS AS AN EXTENSION
OF THE PHYSICAL MUSEUMS

Ch_4  Public education and resource sharing

Ch_5  Based on the Visitors-centred design

Ch_6  The impacts of the new media environment on museums
In the supplementary description of the museum definition given in the charter of the International Museum Association in 2001, the cultural centers and entities of tangible and intangible heritage resources such as Living Heritage and Digital Creative Activity were included in the museum for the first time. The virtual museum is a collection of digital images, sounds, texts, and other information about historical, scientific, or cultural influences that can be accessed through electronic media. In the period of limited bandwidth and multimedia technology, and only simple web pages, the concept of virtual museums began to form. At the end of the 20th century, the earliest online museums were established and became the prototype of the virtual museum.

As Amit Sood, founder of the Google Art Project said, Museums and art galleries are not worried about online exhibitions reducing the willingness of people to visit the physical one. Even if the museum puts more and more collections on the network in different ways, the experience of visit a real one is still irreplaceable. The panoramic images for the user to visit at the fingertips make people want to have a look at it with an immersive experience. As for the exhibitions that are presented in a variety of interactive ways, no matter how to change the perspective on the screen, there is a regret to watch the fire on the other side. If the current technology can satisfy the sense of hearing and vision, then the sense of touch and taste are still difficult to simulate remotely. Virtual museum as an extension of the physical museum, it is worthwhile for us to spend time visiting cause is an interesting presence both online and offline.
A common perception is: In an age of ever-growing platforms and social media sharing, the valuable information on historical materials and literary arts should be returned to the public as their rightful property. Even the BBC, which has one of the largest public music collections in the world, intends to open its classical music to the public, not to mention the museums that hold a large amount of artistic and cultural resources.

Open content is a product of the Internet age, presented by David Wiley in 1998 to describe original works that can be copied or modified by the public. Open content allows others to copy or recreate a deductive work without the need for special permission or payment. With the development and popularisation of the Internet, more and more resources are beginning to be digital, networked and open. Thus, the types of open content and the fields involved are becoming more diverse. It is an outcome that conforms to the trend of development. It not only deals with the high cost of traditionally published resources, but also satisfied the actual demand generated by lack of education resources of some areas.
Most of the open content gives users the right to freely and permanently engage in 5R activities: Retain, Reuse, Revise, Remix, and Redistribute. These rights allow people to use content, modify content, adjust content, and mix content, but the specific content of these five rights depends on the actual openness of the open content.

At the end of the 20th century, the Internet achieved rapid development, which is both an opportunity and a challenge for education. In 2001, MIT changed the traditional education model and proposed an innovative response of the MIT Open Courseware in order to meet the advent of the Internet era. In this campaign, MIT provided thousands of high-level courseware for free use by the public in the world. In addition to this campaign, Wikipedia, Project Gutenberg, and Linux open plan for writing content documents, Khan Academy, Biomed Central, BMC, Public Library of Science, PLoS, Librivox, Flickr, Open Clip Art Library and so on are all internationally influential open content projects.

In February 2017, the Metropolitan Museum of Art in New York launched the Open Access program, announced that it would open its copyright to the public, which includes high-definition images collection of 375,000 items, in accordance with the “Creative Commons Zero” (No Rights Retention Agreement). Earlier, the National Gallery of Art in Washington (the official website said that 45,000 pieces of pictures were available for download and the number is increasing constantly) and the National Museum of Amsterdam in the Netherlands has opened high-definition pictures of the collection resources, the scale and breadth is an eye-opener for the public. In recent years, the global museum's open resources and digital strategy has progressed rapidly, the Museum of Modern Art also provided online downloads of exhibition-related image resources from 2016.

The source of all this can be attributed to Google. Since 2013, Google launched the Google Arts & Culture, in cooperation with hundreds of museums and archives, allows users to browse massive collections of high-definition pictures online. In China, from the panoramic exhibition of the Beijing Palace Museum in the APP to the digital museum project of Baidu Encyclopaedia cooperate with Guobo, Yungang Grottoes, mausoleum of the first Qin emperor Museum and dozens of
other museums, the digital development of the museum has reached considerable degree. From panoramic maps to VR and AR technologies, the possibilities of digital museums are also more abundant. The online exhibition of the Emperor Qin’s Terra-cotta Warriors, which was circulated in May 2017, shines between the squares of countless mobile phone screens. 20 billion pixels and 360-degree panoramas allow people to see every detail of every pottery, so the exhibition even has the advantage that the physical exhibition hall cannot compare.

Since July 2017, the National Palace Museum in Taipei has released 70,000 pictures of cultural relics. In the website Open Data zone, its "Cultural Objects Search and Download" in the paintings and artifacts class up to 70,000 ordinary pixels (72dpi) images available for download; In the "Selected Image Download", there are 2163 medium-level (300dpi) digital images available for download, and this part of the picture will be added 500 more per season. This includes almost all paintings and artefacts, that is to say, jade cabbage, meat-shaped stone, Duke Mao Tripod, lotus-style warm bowl, Wang Xizhi's fast snow time, and Huai Su's self-reported photos, these famous cultural relics of the Taipei National Palace Museum can be downloaded. For ordinary audiences and painting and calligraphy lovers, even if you go to the National Palace Museum in Taipei, it's impossible to see the entire limited exhibitions, but now you can see all of the genius' works on the network. The announcement also said: The National Palace Museum in Taipei does not hope that these treasures are only the cold cultural relics in the museum, but should be the warm healing materials shared by the whole people. At the same time, it can also be a treasure for everyone to get rich. In the future, the National Palace Museum in Taipei will expand and implement more public policies.

Google's online exhibit tool offers a possibility, The “Daily Palace” application launched by the Palace Museum conveys the beauty and story of artworks in a more portable way, open source access make the operation of the digital museum to get a real practice. This accessible platform for sharing and communication enables all art lovers to use open source images for academic and commercial purposes, and as an extension of the physical museum, pervasively permeates into the lives of all of us. It is undoubtedly an innovation that the museum has made to adapt to the Internet age.
Online exhibitions and courses

The opening and visitors-friendly of the museum are not only reflected in the architectural layout, but also in the exploration and practice of its digitalization of resources. With more and more information available online, we are in a period of intellectual democracy. Museums and galleries are no longer exclusive places for elites and nobility. Virtual museums give everyone equal opportunities and equal rights in front of open resources.

In the past, if you wanted to see all the works of an Impressionist master, you might need to start in Paris and go to dozens of galleries in Germany, Belgium, the Netherlands, the UK, and even the United States. But time is never enough, the exhibitions don’t always satisfy. Moreover, even if the museums are around, not everyone has the opportunity to visit often.

A more practical problem is that the exhibition space of the entity Museum is certain. Many cultures and art institutions with rich collections will not be able to display all the collections in a short period of time even if they change their exhibits in three months a time. After some temporary special exhibitions, the later audience will no longer have the opportunity to see it, which is a pity for contemporary museums. The online exhibition is not only recorded and preserved as a kind of digital data but also hopes to turn some excellent exhibitions into “unending exhibitions”, which are reserved for those who have no time to visit.

An important function of the museum is public education. In the past, due to material conditions, many people did not have the opportunity to visit the museum, and only a few people were able to participate in the open courses of the
museum. But online exhibitions and courses on virtual museums can help people get rid of all the unfavorable factors and access them through the Internet, thus realizing the function of museums to popularise contemporary culture and art. As Erin Branham, an American museum educator pointed out: "In view of our mission, we must use digital tools because they will help us maximize our audience and provide the public with a rich and profound learning resources."

The museum community has realized the positive role of online education in expanding the educational functions of museums, especially represented by some large museums in Europe and America. They have started work with the MOOCs website to launch a variety of museum courses online. MOOCs is an online classroom for the general public. People can learn online via the Internet. MOOCs are the latest development of distance education. It is developed through open educational resources. It originated from the open educational resources movement and the ideological trend of the study of connectionism. Coursera, Udacity, and edX are the three major MOOCs platforms in the US currently, since its inception, many top universities around the world have collaborated with these platforms to launch free online courses. Some famous cultural institutions such as the New York Museum of Modern Art, the American Museum of Natural History, the Tate Modern, and the British Museum have also joined the MOOCs.

“MoMA is the most important flag in this field, and its online learning platform represents a certain standard”, Chinese contemporary artist Cao Fei said. The makers of this creative learning tool believe that modern art history is not simply a linear development of the style genre, but also an artist's reaction to the intellectual, social and cultural aspects of his time. The structure of MoMA online learning is a reflection of this cross-border fusion. The artwork is placed in the theme group, surpassing traditional classification methods such as age, geographical location and genre. On July 29, 2013, the Museum of Modern Art in New York launched a free course online called “Art and Inquiry: The Teaching Method of the Museum” on Coursera. The course is aimed at the professional development of art teachers in primary and secondary schools, guide teachers to use the museum resources effectively in the class for art education. After the
course launched, there are more than 17,000 students from around the world studied the course, and the number of users far exceeded other types of online courses before in the Museum of Modern Art in New York. In 2014, the museum launched a follow-up course “Arts and Events: An Interactive Strategy for Participating in Art” based on the first course.

The American Museum of Natural History also launched the “Genetics and Society” course for the career development of educators on the Coursera website in 2014 and plans to launch two others “Dynamic Earth” and “Evolution” courses for educators in the same year. The University of Edinburgh, the Tate Modern and the National Gallery of Scotland also plan to launch an online course introducing the famous artist Andy Warhol on Coursera in 2014. Future Learn, a European MOOCs platform, has also established partnerships with cultural institutions such as the British Museum and the British Library and plans to launch MOOCs courses.

Traditional museum education is mostly on-site educational activities in the museum’s exhibition hall. The audience is mainly students, and the educational content and form are relatively simple. The users on the platform of the MOOCs have different ages, nationalities and backgrounds. The online education method is more abundant, and the target is no longer limited to the audience in the exhibition hall or the city where the museum is located or the audiences of the country. At the same time, the online courses on the Curtain Online have a elaborate academic classification, providing high-quality online courses from the world’s top universities and outstanding cultural institutions to everyone freely and efficiently.

The MOOCs online education platform integrates global quality educational resources and provides it to the public free of charge, to a certain extent, it promoted educational equity and made up for uneven distribution of educational resources. For museums, the dissemination of the museum’s educational resources to a wider audience through the MOOCs platform is a great opportunity to improve the museum’s educational capacity.
SFMOMA: ArtScope
One of the earliest attempts to explore new forms of online content discovery was San Francisco Museum of Modern Art’s (SFMOMA) ArtScope in 2007 (now decommissioned) which presented the collection in a lightbox-like grid over which a magnifying glass could be dragged to explore individual artworks.

Seeing Through Photographs
What is a photograph and how has photography been used throughout history? Seeing Through Photographs explores this fascinating subject through works in MoMA’s collection and wide-ranging conversations with artist and curators that reveal the many different factors that inform the making of a photograph.

Modern Art & Ideas
Using works from MoMA’s expansive collection as a point of departure, this course encourages learners to understand, enjoy, and use modern and contemporary art through four themes: Places & Spaces, Art & Ideas, Transforming Everyday Objects, and Art & Society.

In the Studio: Postwar Abstract Painting
Want to know how some of the 20th century’s most celebrated artists made abstract paintings? This course offers an in-depth, hands-on look at the materials, techniques, and approaches of seven New York School artists, including Willem de Kooning, Yayoi Kusama, Agnes Martin, Barnett Newman, Jackson Pollock, Ad Reinhardt, and Mark Rothko.

Online course on Coursera by MoMA
Usage modes and providers

Nowadays, there is a lot of diverse patterns to visit a museum according to personal hobbies and habits. The virtual museum allows visitors to watch their favorite content at any time and any place. The online visit pattern not only saves the visitor’s time cost and entrance cost but also leave out the practical problems of distance, weather, traffic, etc that travel needs to be considered. It can be said that this has minimized the obstacles to freely visiting museums, and has narrowed the distance between art and ordinary people. The combination of online and offline is the scientific visitor pattern to the museum. In the era of globalization, we do not experience through time, but more often through the space transposition to experience our living conditions and sense of existence.

There are two main types of virtual museums. One is represented by the official website of major museums, including exhibitions, events, information, publications and shops which provides museum-related information, such as Power Station of Art in Shanghai and The Museum of Modern Art in New York; The other is an website that combines digital books, paintings, movies, museum collections and audio archives, such as European Collections, Google Art & Culture, etc.

Now, the virtual art museum is more than just upload the photos of the work online. Based on the indoor landscape technology of Google Street View, Google Art Project can provide 360-degree 3D virtual scene tour for selected exhibition halls, these 360° photos collected in the museum allowed users to replace the footprint with a mouse to simulate the real viewing experience. What is more worthy of attention is the unprecedented attempt for any virtual museum to reproduce details through super high-resolution photo capture technology, each
photo can reach almost 7 billion pixels, which is almost 1,000 times more accurate than a digital camera in the hands of ordinary visitors. With zooming and moving, even the details of the artwork that are difficult to see with the naked eye are very clear.

Works that are difficult to appreciate in a physical museum can also be viewed infinitely online. The paintings hanging on the walls of the exhibition hall are wrapped in a large glass or transparent acrylic sheets, then with a distance of the protection fence, it is difficult to see the details, especially the good historical artifacts that need to be protected. With the help of Google's “billion-pixel” image technology, viewers can zoom in on the front of the computer screen or even on the screen of the mobile phone to see the painting traces from a long times ago.

Google's advantage in search engines makes it thoughtful in the design of guidance systems for positioning and navigation. In the interface of Google Art & Culture, a text search engine for all kinds of comprehensive information about the museum is provided in the upper left corner, and a hidden navigation panel and information panel are provided on the right side. Visitors can not only directly click on the floor plan to complete the direct space conversion, but also learn the information about the works in each room, the historical background information of the artworks, find other works about the artists, and watch the related Youtube videos, share the work on social network sites such as Facebook or enter directly to the official website of the museum you visit.

When these collections become data on web platforms, rearrange them together makes it easier to produce new knowledge. Users can directly use the "Contrast Learning" function provided by the Google Cultural Institute to view any two artworks in the same page, no matter where their body is stored in the corner of the world, material, age, author...there is no estrangement in the virtual tour.
Ordinary viewers can place interesting works in their own collections. Curators can also use the free online tool Open Gallery to reorganize online exhibits and tell new stories with their own independent work. With Art Camera, 360-degree panoramic video and Street View tools, visitors can also explore and scale pictures in time and color to enjoy the fantastic details of artworks, visit famous sights and landmarks of the world.

Google Arts & Culture has partnered with more than 1,200 museums, galleries, and cultural institutions from 70 countries to make it possible for everyone to enjoy the exhibits online. Its features include: zoom view; virtual reality (requires Google Cardboard glasses to immerse yourself in an artistic and cultural atmosphere); browse by time and colour (screen by colour or time period to find the artwork you are looking for); virtual tour (walk into the world-famous museum and visit iconic buildings); personal collections (save your favourite artwork and share it with friends and students); nearby (find the surrounding museums and cultural events); daily summary (new content is discovered every time you open the app); Artefact Recognition Assistant (pointing the camera to the artwork to learn more about the artwork, even when offline, but only for some museums); notifications (subscription to receive updates on popular art and cultural stories); translation (use the translation button to view exhibit information from all over the world in your own language); Art Selfie (a fun way to find art), etc.
The data information of the virtual museum mainly comes from the important museums, the collection organization of research museum institutions, the world's top art academy art museum, the rich collection of galleries, and the cultural institutions that preserve many historical relics. For instance, the Smithsonian Institution of Washington, the British Museum in London, the V&A in London, the Dutch National Museum in Amsterdam, the Metropolitan Museum of Art in New York, the National Museum in Berlin, etc. The cost and complexity of the collection's digitization depend on the scale of the museum collection. This work is more difficult for a larger and more complex museum collection. The Smithsonian Institution in Washington, DC, has 19 museums and the world's largest collection of 154 million, 10 million items has been uploaded to the network, which is a remarkable achievement. Although the cost of the digital project of the museum and the daily maintenance and operation of the website is not a small amount, museum institutions are still scrambling to open up digital channels for their collections and embrace the digital wave actively.
If the French government decided to open the Louvre as a national art museum to the public as a symbol of the new era of the museum in July 1793, then as a virtual museum of digital publishing, its culture spread based on the new media technology Communication has always shouldered the basic responsibility of knowledge popularisation and public education.

In terms of extending the value of public education resources, the huge information base formed in the process of resource integration makes the virtual museum’s information resource sharing more satisfying the needs of public education. Through the integration of existing scattered information resources through the multimedia platform, a complete and independent classification and guidance system which is not limited by time and space can be established, so that anyone can find the required information in any system terminal with reasonable hardware configuration. No longer constrained by the tour routes and viewing angles in traditional museums or subject to the subjective awareness and objective environmental limitations of a museum curator. The virtual museum realizes the fundamental purpose of digital construction, namely, expanding the social lifelong education function of the physical museum. The public can not only use the art resources repeatedly through the network without affecting the collections but also reduce the cost of obtaining artistic resources. Alex Berners of Nielsen said: "People spend a steady time on the Internet, and each website competes fiercely to engage the visitors' eyes, any hot topics about the social, save user's time, etc brings the network closer reality."
The virtual museum combines the characteristics of mass publishing, professional publishing and educational publishing. It integrates entertaining and universal, targeted and professional. Undoubtedly, children and young people are becoming the most important users of new media technologies, more and more public and commercial organizations are adjusting their products to satisfy the needs of this group. The virtual museum can even allow Latin American, Indian and African children who are unable to visit the exhibition in real life to get a similar experience through the Internet. The futurist A. Toffler once said: "The vast knowledge is not from the classroom, nor from the technical manual." In the form of digital publications, young people no longer comprehend art in a simple dogma, but return to a space that can be imagined in a way that is fun and educational. Duchamp believed that art needs the audience to finish it, and this digital expression is more easily understood and approached, and does not affect the essence of art.

Everything has two sides, the virtual museum is no exception. It must be acknowledged that the advent of the era of mass communication has ended the history of culture as a privilege of the upper class and monopolizing the human spiritual life. The popularisation of spiritual products is of great significance for improving the overall level of civilization of the society and enhancing the awareness of public life in the lower classes. But people also noticed the negative functional effects brought about by popular culture, that is, popular culture with strong entertainment tendencies.

The media uses more when people are alone, which means less time for an organized action. When adolescents spend most of their free time on media consumption and satisfied with indirectly understanding life, rather than actively intervening directly in life, the harm can be said to be disastrous. Prosser and Eddie Ford mentioned in their book "Virtual Museum Learning" that the two sides of digital publications are to obtain the readability of virtual objects while losing the understanding of physical objects. And if the public art education is under the guise of “pan-entertainment”, the problem that new media communication may cause in behavioral habits is that the abstraction of virtual methods hinders
the creativity of young people in real learning, the cultural popularity by the internet spread reduce the aesthetic ability of young people except of visual communication.

In addition, the inevitable topic in digital publishing is copyright protection. From Google Books to Google Earth to the Google Art Project, Google seems to be trying to replicate the world's civilizations into the Internet, and every practice is always praised as a pioneer and accompanied by countless criticisms. However, it is undeniable that the use of new technologies and media to extend the public education resources of the museum is a future development direction. But cause the specific issues related to copyright protection, intellectual property rights, and even the profitability of physical museums, art resource holders would retain some collections inevitably. The most typical example of media coverage is that the Queen Sofia Art Centre in Madrid, Spain, chose to use Juan Gris's Cubist oil painting as a super-pixel recognition masterpiece for Google, rather than its most famous Picasso's “Guernica”.

The museum plays an important role for human memory and inheritance of civilization. Culture is always and a culture of society, a culture of the masses. The reflections caused by the problems encountered in the exploration of the road of advancement not only put forward new ideas for the development of art but also put forward a new topic on the influence of media communication on the behavior habits of the audience. In the direction of how to build a digital culture and art public institution that breaks the limitation of time and space, it still needs the continuous exploration of future generations, so that it can be popularised as a new form to promote public education and information dissemination.
Today’s museum continues to expand its ambitious open access program to further engage the public. But what kind of people will go to the museum? What do they want to get from the museum visit? What are the factors that determine a person who goes to visit a museum? If the museum wants to develop more audiences, then it is necessary to understand who they served as much as possible.

According to the purpose of the visitors, we can classify the audience of the museum into three categories: professional researchers and consultants, learners, and tourists. The first category is mainly engaged in research and education related to museums, such as museum professional, historical relics researchers, archaeologists, museum-related practitioners, etc. Their main purpose is to help the museum connect with the general public by making an intellectual output of the excavation and research of the museum’s existing resources, or to some extent doing some translation work. They are a group of people most familiar with the museum due to the requirements of the work, the first-class users of museum resources. To a certain extent, they are like a middleman, a communicator of museum culture.
The second category is the people with clear learning objectives, mainly for primary and secondary school students, literary and artistic youth, culture and history art lovers, and families who want their children to receive museum education. They are usually the group that most supports the museum and constitute the main body of the current museum audiences. They actively participate in the activities carried out by the museum and hope to learn from the people with the same interests through the museum, learn the knowledge outside of the textbook, open up their horizons, and always expect the museum to bring them the most cutting-edge technology and ideas, satisfy their curiosity. For a better museum education experience.

A third category is a group of tourists with an entertainment-oriented nature of sightseeing. They may be local citizens or outsiders or even foreign tourists, this group is more plentiful in the tourist city or in the museum which has a greater the reputation. Especially like MoMA, which is in the forefront of the Museum of Contemporary Art, it is almost regarded as a holy place for tourists of the world,
and even many people just go for it. They want to see the most outstanding artworks, or learn about the local history, culture, and art through museums, and even get an identity that the museum brings to them. For this group, the museum is an ideal place to brings pleasure, temperament, and sightseeing.

The above categories are the audience classifications that have had a real museum experience. They are the obvious audiences that can be counted, also called direct audiences. However, some viewers did not go to the museum to visit but gained knowledge and information from the museum through the Internet, publications, radio or film channels. This part of the audience that cannot be counted is the potential audience of the museum, also known as the indirect audience.

The digital technology developed from the end of the 20th century to the beginning of the 21st century created a "connection" between the museum and the audience. The digitization of the collection has given the museum more potential audiences. They are a community of digital technology themselves, and the terminal devices they carry with can receive push or exhibition information from museums at any time. The audience thus became a part of the exhibition, stimulating more possibilities for the exhibition by contributing digital content to the exhibition. At the same time, the audience uses electronic devices in their hands to make the visit process more personalized. For example, viewers from different countries can read the exhibition information in their own language, and viewers with poor eyesight can use digital devices to adjust the font size of the exhibition information. These devices not only serve as a tool for visiting with a more humane aspect but also become a way for viewers to achieve self-identity.

Even more is the fact that these viewers brought their own circle of friends into the museum when they enter a museum with their digital devices. So, the phone in my pocket is a door to thousands of friends in my digital space. The audience shares pictures, information, and evaluations of the exhibition in their social circles, so that those who have not visited the museum can actively or passively receive information about the exhibition on the network platform, thus generate dialogue and discussion, they have become the audience resources of the museum.
French scholar Jean Galard discovered that the audience of the early visit to the Louvre Museum is very complicated - artists, nobles, soldiers, apprentices, writers, ordinary workers. It was truly open to all the public, but there is no practical plan for art education in place. With the development and progress of the times, the art education work of the Louvre has gradually improved and become specialized. For example, the cultural department of the museum is responsible for the implementation of educational activities, facing three levels of visitors: the first is the masters, experts, and industry insiders who have certain accomplishments in art; the second is the group organizations mainly composed of student groups and teacher groups; The third is the general public, which includes adults, families, adolescents, and groups of people with disabilities. The professional team edits and publishes paper publications (guidebooks in multiple languages, brochures, exhibition manuals, books, etc.), audiovisual publications project, and builds websites. As early as 1998, the museum established the Louvre Education website dedicated to educational purposes. Basically, at the same time, the Ministry of Culture established the “Public Research and Prospects Department” to carry out some basic art education and appreciation activities. For example, for the disabled audience group, in the sculpture exhibition area, the visually impaired audience will be provided with a tactile exhibition room, and an art history language training course will be provided for the deaf and mute interpreters, so that they can successfully translate the art history into sign language and benefit more viewers.

People's sense of gaining artistic aesthetics often comes from participation, especially in the Internet age, where audiences are no longer just consumers of cultural products, but also active participants in content generation and dissemination. Contemporary museums want to popularise cultural and art education and to develop more potential audiences to actually participate in museum activities, they must understand the current diverse audience, consider their needs, and play the museum's aesthetic education function in a way that the public is willing to accept.
Visitor habits

A majority of young adults check out a museums website on their mobile device before visiting, many had sought free Wi-Fi once inside the museum, and a vast majority check their mobile device for updates as well as taking pictures and social sharing them to social networks like Facebook and Twitter.

In the current era of social networking, social behavioural habits and emotional states have some commonalities endowed by the great environment of this era. The study of these behavioural habits is a prerequisite for the museum to understand the public and establish close ties with the audience. The behavioural habits of the audience define the museum's narrative language and the way the museum communicates with the audience. In turn, the educational experience and interaction that the museum brings to the audience also affects the audience's habits and thinking.

According to the definition of cognitive psychologists, the “habits” is a kind of unconscious behavior caused by situational suggested, which is what we do almost without thinking. Nowadays, the products and services that we take for granted are changing our course of action. To some extent, our behavior has been designed without knowing it.
Today, we can’t wait to see SMS notifications, visit WeChat, Instagram or YouTube. We only plan to watch for a few minutes, but after an hour, we find that we still use our fingers to swipe the page on the phone screen. This desire may have been with us all day, but it is rarely noticed. In the face of technology products at hand, even if we are not addicted, we have already suffered from the obsessive-compulsive disorder at least. These are the habits cultivated by social media products, it makes us dependent, and affects our nerves all the time.

The mass media is an important part of our popular culture today, it attracts commercial and non-commercial enterprises of all forms and sizes, including cultural institutions, because many of our behavioral habits have been shaped by it, there are constantly communication and sharing of information in all kinds of social media platform every moment. Those companies that focus on varies products have trying their best to win a place in the users' heart, hope to make their products an indispensable part of people’s lives in order to realize their economic value. It must be said that many companies that are closely related to the user’s behavioral habits and emotional state, and who are committed to cultivating user habits have achieved great success.
For example, they are responsive to the user’s entertainment preferences and are trying to attract the audience's interest and attention through a form of activity that makes them happy. After all, it is easy to be accepted that be able to give the user some kind of pleasant feeling or good things directly. The user is more likely to choose the second or more times if he recognizes the value of the product in the satisfaction of the experience.

In the past, contact between people was limited, and comparisons between individuals tended to average. But when the network created a seemingly beautiful visual world that connected everyone, people quickly realized the distance between themselves and the reference standard. The huge psychological gap makes modern people generally subjectively low in happiness. At the same time, people have become more "perfectionism" because of the high level of reference systems. Whether it's carefully retouching your own photos or making a New Year’s plan, people’s demands for themselves and others are higher than ever, and they are easy to anxiety when they are not finished, and they become more narcissistic while exaggerating their own shortcomings. The world today is becoming very fast, and the relationship between "I" and the world has also become very fast. As popular as “Be Yourself,” it’s “self-lost” and various adjectives related to “confusing”. So we habitually continue to find and correct reference objects, and constantly think about the existence of "self" from the inner and outer world.
Now everyone has abundant information and it's very easy to get. We always habitually choose products or experiences that are easier, more fun, more interesting, and richer. In the era of fragmentation, everyone's attention has been getting lower and lower, and they are accustomed to getting instant feedback and visual results at a glance. The mainstream aesthetic of the society, the aesthetic standard defined by the middle class or fashion world through social networks, the display of KOL is more directly conveyed to young people, and also requires a beautiful external as a platform to show inner self. Therefore, fitness seems to be a political correctness, and beauty has become the pursuit of all people for the rest of their lives. This pursuit of external beauty is also reflected in the filtered culture. Retouching and filtering seem to be a new social etiquette. People have a strong sense of insecurity about the “face without makeup” when they do not add filters.

People on social networks seem to be traveling every day, going to high-end hotels, and eating luxury foods. In contrast, their unremarkable life is not worth mentioning without careful screening and beautification. "I" under the filtered culture has become a creative and histrionic “I”. Eating, makeup, self-portraits, and visiting museums are like an actor preparing for the stage, selecting angles, composition, photographing, adding filters, and matching texts until the work is delivered to the Internet and a performance is completed. Life becomes a material, life is secondary, and "I" need to be confirmed in the feedback from the audiences.

This is the most open era, the most obvious manifestation is in the freedom of speech in social media. Everyone can create their own narrative language and symbols to express themselves in the network. Using Emoji images instead of words, highlighting emotions, and enhancing communication may be a habit developed from our millennial generation. "Self" has never been a fixed existence. Everyone is constantly being influenced by education from time to time, and the changing environment interacts with our behavioral habits. The map is not static, and we are not static on the map.
Today, especially in the age of a network, each of us is a self-media, to some extent we do not need, or is not so 100% dependent on a public display platform. We can use a variety of channels, whether it is Weibo, Twitter or Flickr, we can upload our own text or images, as much as possible at least this possibility, let somebody else comes to see our works. Since the 21st century, emoji and self-timer have become a way of self-expression everywhere, and they have become popular on social media sites such as Instagram, Facebook and, Tumblr. “Audiences around the world are breaking the normal state of culture and reshaping them,” said Maggie Hartnick, head of LaPlaca Cohen.

*We consume content, we interact, share and communicate with our smartphones. We express ourselves personally, often through photography.*

In a transparent world with a large population, audiences tend to show more of their inner world online. In a virtual network, the audience is like a fully armed warrior, without a real name, without a real face, without a real identity, to some extent find the most primitive self. The audience can pack the digitized themselves, generously show what they want others to see, and they can express them freely. From these forms and contents that are often used to be created, it seems that we can easily read the general needs of contemporary people. For example, the audience is contradictory, eager to be understood, and afraid of being seen through. Heidegger said, "We are essentially a part of the community."
It is in the community that we learn how to become an individual.” As a social being, human beings usually put themselves in a certain group to get some kind of connection with others and use this connection to obtain confirmation of identity. The inevitable part of the audience coming to the museum is also to gain some kind of social identity.

One phenomenon is that comments are getting more and more attention, and sometimes even more than the content itself. Imagine, when you post a message on any social media platform, do you intentionally or unintentionally start looking forward to someone else’s reply or like it? At this time, you need someone’s attention, need an approval of others, and be curious about how others will respond to what you post. At this time, the content you edited is not the most important. What you want more is to communicate with others through this content, get some feedback from others and even self-identify. There are also a lot of cases of "pull it directly into the comment area after reading the title or comment on it even if didn't read it all.” A large part of the reason is due to short comments and clear positions. In fact, the audience never only experiences life, but always narrates and re-narrates life while experiencing it. This narrative contains the direct attitude of the audience to life, and the demand for attitude (evaluation) is stronger than the experience itself. The audience also needs receive a feedback in the educational experience of the museum.

A study by Swiss scholar Krasnova shows that many people feel "lost and tired" after using Facebook, the biggest reason is “jealousy”. The Internet has intensified the concept of competition. Under the comparative consciousness, people are more and more unable to accept that they have no growth in the secular sense in unit time. And "learning" is the best way to grow and has become the consensus of most people. The informatization of knowledge makes people become forgetful knowers, and the most popular ones are always those "10 minutes to learn to use lifelong tips.” The audience needs the museum to be a place to provide their knowledge input, but the way must be easy to accept, interesting and vivid.
The quantified self was first proposed by Gary Wolf and Kevin Kelly of Wired's Wired in 2007, and the core is “self-recognition through self-tracking”. The rapid development of technology makes the future more and more uncertain, and the future will come faster than ever. Today's audience is more likely to fall into a kind of worry and fear that they would out of step with the times, in a mood of anxiety. So the audience began to pursue the efficiency and quality of life, and hope to grasp themselves more accurately by using the actual data of genetic testing, health APP, GTD software, annual music/movie/consumption report. They began to stipulate their own time of drinking water, the calories of food intake, reading books, and sleeping for 7 hours. It seems that only this quantitative management of all aspects of their own can grow into a healthy person under social and scientific discipline. However, the audience ignored that the quantified data only tends to an optimal value, and passively accepts the "standard" aesthetic without considering individual differences. This phenomenon indicates that the audience actually needs a spiritual guidance in the pursuit of efficiency and quality of life. They often do not realize that this is a process, but only focus on a standard result.

Anybody who is willing to spend time in the museum has more or less overlap with the museum’s pursuit of beauty and lofty pursuits, or a unity of values. The arbitration of art is not entirely in the academic institutions, but more in the hearts of every audience. In fact, every audience at a certain stage of life, even a very short period of time, would have an experience similar to an artist, just saying that this experience is hidden in some special types of work. For example, in the kind of craftsman-like work, or some special hobbies inside. But when the audience really joins in it, is able to feel the same kind of pleasure and a sense of wildness of the artist. Then the product that comes out, no matter what functions, it could be a prototype or a sample of art. Just like a lot of works we are very familiar with, it is from a ready-made product, from a daily product, when it enters a space in a museum, it has a legitimacy, it becomes an art. One of the challenges of museum education today is to further engage the public. In fact, audiences need to be stimulated by the desire to create, regardless of the age of the audiences.
visitors.

PART 2 VIRTUAL MUSEUMS AS AN EXTENSION OF THE PHYSICAL MUSEUMS OF MUSEUMS

Visitor features

“Most people’s experience of World Heritage is now a digital one... this shift in ‘visitation’ means many people who engage with World Heritage will never physically travel to the actual site.”

Quote from researcher Cristina Garduño Freeman at the University of Melbourne.

In the era of globalization, audiences are no longer just consumers of cultural products, but also active participants in content generation and dissemination. However, the network has become a new way for audiences to acquire knowledge, experience, and participate actively. Especially now, a large part of our museum's visitors is digital aborigines, born in 1980 and growing in the information age. According to the various technical hardware conditions provided by the Internet, the museum can not only serve more audiences from different fields. Moreover, under the adaptation and cooperation of the audience, the Internet environment may stimulate the audience's new behavior patterns and visual experience, thus placing new demands on the museum and reconstructing the museum system.

As an extension carrier of the physical museum, the virtual museum provides visual channels and visual content that is quite different from the physical museum in order to comply with the corresponding behavior patterns and participation forms of Internet audiences. Among them, the visual channels refer to the immediacy, intermittent, leisure, and fragmentation that the audiences browse. Visual content refers to the “re-image” of the “image” brought by the “database”
feature of the “image” of the collection in the digital museum. The features of the two audience behavior patterns associated with digital museum viewing include physical participation, collection, and sharing.

From the visual channels provided by the virtual museum, this is a shift from the display of the original scene to an image display that transcends time and space constraints. Visit virtual museum exhibitions can often occur at any time and place. The audience may enter the visit when they are idle, or at home, or during a certain distance, or chatting with others. Smartphones and wireless networks have deepened this contact model. The development of digital technology has continuously brought us convenience, with blurred the boundary between private space and public space. When the audience encounters a digital museum, Kristen Burton and Carlo Scott called the leisure mode of contemporary life has strengthened once again. In the case of wireless networks, this phenomenon of mutual penetration of the public and private sector is changing the audience’s certain sequence of the visit. Even if the virtual museum tries to present an orderly image to the audience in the form of a theme, time or group of characters, the audience’s contact with these image sequences is also visited in pieces at intermittent intervals.

At the same time, the content presented to the audience by the virtual museum has changed accordingly. Different from the collections of the physical museums, the virtual museums tend to more diversify the visual experience of the audience. In addition to continuing the narrative language of the physical museum to allow the storytelling of collections, it also builds a rich connection between different collections, giving full play to the magical use of big data and providing more possibilities for the audience.
In the era of audience life, online behavior and communication are full of subtext and confusion. There is a word in German called Maskenfreiheit that can be translated as "the freedom given by the mask". Internet users know that they package digital self and even create another personality online. Compared with the reality of yourself, this person can have no similarities. The emergence of technology allows the audience to have at least two personality and two habitats: one is the real home and the other is the personal homepage. Sometimes they are coincident, sometimes not. On social media, the audience is never the real self, because it is out of any context of offline life. On the Internet, the audience always thinks about it and shows their foresight. However, their refrigerators and drawers are not like this because they are not intended to be seen by others.

Although there are more and more museums in the world, there are still many people who have never even stepped into a museum. This may involve many reasons, but one of the main reasons for being less attractive is they cannot understand artworks or can’t communicate with art and get a response. The smaller range artworks are more difficult to 'sell' to the audience, and audiences from different cultural, economic, and educational backgrounds have great differences in aesthetics and understanding. To this end, the museum is striving to find opportunities to communicate with the public constantly, combining online and offline, hoping to change the stereotype that the museum is too grand and serious and difficult to get close to. And the museum, as an institution that serves everyone, should make the audience feel trust, feel that they can go to the museum to visit, learn something, and improve their quality of life or get spiritual satisfaction.
According to Stephen Bitgood, founder of the American Audience Research Association, people would conduct a cost-benefit analysis before and during the visit. For example, if people feel that the content quality is high during the visit, their attention would be more concentrated. They look forward to harvesting and matching the time and money they spend, even more, valuable services. These costs and benefits can be measured in a variety of ways, and when the experience is implemented into the audience itself, the individual differences are distinguished.

In the face of the complex contemporary environment, museum institutions are also striving to gradually improve, in order to attract more people to the museum, actively promote different artists, designers and organize more interesting exhibitions related to popular culture to satisfy various fields of people with different hobbies. At the same time, they are also committed to developing young museum audiences, even school-age children, combining pop culture and public attention, or cross-border cooperation, or using special themes as a carrier to play a new model of creative museums in a unique way. Develop the habits of young visitors participate in the museum educational experiences.
In order to please the young generation, the flash mob museums that emphasizes the experience have become popular recently. From October 13th to October 28th, The Museum of Pizza appeared in New York. This is the first pizza-themed interactive experience museum that featured the pizza art gallery, cheese cave, pizza beach, pizza meditation, film show, etc. Similar to the “Ice Cream Museum”, “Avocado Museum” and “Egg House” that emerged before, this flash mob museum is not about present the historical development behind a pizza but hopes to share the knowledge and artistic creation of pizza in a relaxed and fun mode. Its chief executive, Kareem Rahma, said, “Pizza is not just a food, it is a cultural phenomenon that transcends geographical and linguistic limitations. Recognize this, we thought about how we can combine our passion for storytelling and popular culture to fuel art, music, friendship, and new discoveries.”

Of course, the selfie is the most attractive part of the experiential museum. For the young generation who are proficient in digital media, taking various poses in the background of immersive devices and then sharing them on social platforms, the scenes in the museum that meets the current aesthetic trends are considered to be worthy of the best filter mode and show off on Instagram.
Artnet commentator Ben Davis believes that "this flash type museum is designed to satisfy our vanity." However, Biubi Xu, the curator of the Egg House sees this as a challenge. The young generation is hard to be pleased, they have seen too many things. “So we need to provide more interactive experiences for all of their senses, which means more food, sound, and even odor.” But she also admits that the egg house is more like an amusement park than the broader and deeper topics that a traditional exhibition needs to cover. It is geared for young audiences, realized the opportunity for audiences to take selfies while acquiring knowledge, and is a derivative of the physical museum that is responsive to the entertainment tendency of audiences in the new media era.

And in the Internet age, more and more artworks created for mobile smart devices and social media have appeared. People use Instagram-friendly and Selfie-friendly to summarize this phenomenon. The painters created on the square canvas consciously, because it is more accord with Instagram uploads. The installation artist began to leave a few extras that are suitable for self-portraits in the works. The San Francisco Museum of Modern Art would be refurbished with a terrace suitable for self-portraits.

In addition to changing the size of the work to suit social media, artists also explore deeper interactions with new media and create by the brushes of the web. In 2016, the performance of the British young female artist Amalia Ulman on Instagram was moved to the Tate Modern Gallery. On June 27, 2017, the Metropolitan Museum of Art, which has been criticized for its digitalization, held an exhibition "Talking Pictures: Camera-phone Conversations Between Artists" to commemorate the 10th anniversary of the birth of the iPhone. 12 artists sent photos and videos to each other in 5 months to completed a visual dialogue. The introduction to the exhibition reads: "In the past, the main function of the camera was to record the past. Today, it is used by people to share the instant experience, accompanied by an unprecedented intimacy between people... The photo becomes a kind of flowing, immediate and instantaneous medium."
The Los Angeles County Museum of Art may be one of the most active institutions to embrace the digital wave. In early July, the museum announced that Los Angeles artist Guadalupe Rosales became its first artist in Instagram. Rosales runs two Instagram accounts on his own and he is also building photos and object files for the Latin American ethnic party in Los Angeles in 1990s. Rita Gonzalez, head of the contemporary art Department of the museum, said: “What impressed us most is that Rosales uses Instagram in a broader sense, and her views on this social networking platform, is no different with the academic research by curators and artists.” Amy Habel, deputy director of technology, networking and digital media at the Los Angeles Museum of Art, puts her own opinion on digitalization: “It seems that people want museums to be as quiet as libraries, but not just to be like this... I think the time has proved that the current technology does not really detract from the experience of artworks.” Digitalization not only brings online collections to audiences but also enhances the sporadic nature of artistic creation and expands the field.

A report by the Pew Research Center based on an online survey of 1,224 museum institutions in the United States, the value of social networks has been widely recognized by art institutions and has penetrated all aspects of the operation of cultural institutions such as museums, and have become an integral part of the American art scene.

In China, with the popularity of a series of the museum and cultural relics related documentaries such as “If National Treasures Can Be Speaking” and “National Treasures”, more and more people are paying attention to museums. From the attention and interaction on Weibo to the visits on the holidays; from the daily photo recordings in the museum to the social and educational activities practical participating in the museum, all reflect the great influence of the new media environment on the museum.
In 2015, the first season of "Local Perspective" attracted a lot of attention and received rave reviews. The opening of the first season is about the "The Vast Land" that was exhibited in the Forbidden City last year. From the 18-year-old painter Wang Ximeng to the court painter Velázquez and the 23-year-old Michelangelo who carved the famous work "Pietà", Chen Danqing analyzed the different states of the artist when he was young and old, and concluded that "the masterpieces in the history of art are mostly the creation of young people". In April of this year, the second season of "Local Perspective" began to be told and the location was transferred to the Metropolitan Museum in New York, USA. In the 1980s, Chen Danqing drifted in New York, he always stayed at the Metropolitan Museum with some bread and water for a whole day. 30 years later, through the network and video, he walked the streets of New York, walked in the museums to lead the audience to appreciate the beauty he felt that year.

The last issue of the first season of "Local Perspective" was called "Duchamp’s decision". Chen Danqing threw out a point of view and explained why he did the "Local Perspective". This is not the golden era of painting, but it may be the best time to talk about painting. Why? Still digital, digital technology to send art museums to each mobile phone, the artwork presents a second effect, you can talk about it in various ways.

The theme of this year's International Museum Day is Hyperconnected museums: New approaches, new public. The term "Hyperconnected" first appeared in 2001 to describe the multi-channel communication methods of today's society, including face-to-face communication, email, instant messaging software, telephone, and internet, etc. And the museum has long been unknowingly joined the increasingly complex, diverse and harmonious super-connected world trend. It can be said that the museum has already been an important link between the natural environment, the cultural landscape, and the local community.
The International Museum Association proposes that “the museums are an important means of strengthening cultural exchanges, enriching culture, promoting understanding and cooperation, and achieve the lasting peace”. Bringing together different people and different perspectives can create a much larger force than the sum of individuals. In this sense, the Hyperconnected museums contain endless possibilities. It combines memory, belonging, awe, inspiration and hope to create healing opportunities by sharing different experiences and perspectives, even challenging and changing the future. If we explore these possibilities with a spirit of reflection, pay attention to their value and the connections that technology and other means bring to the museum will help us better understand the location, role, and possibilities of the museum in this world.

The network provides the museum and its audience with a medium, not a product, a series of tools, rather than a specific experience. A virtual museum is not just a resource library, but more a community of action, dialogue, communication, and creation. It contains public and private spaces, formal and informal interactions, and is formed by the community itself, and possibly supplemented by on-site or face-to-face experience. Here, the virtual museum is attributed to an intermediary, a place of communication that transcends time and space restrictions. Moreover, the current special significance of the digital museum is that it is possible to re-start on the basis of returning to personal interests, and constantly try to establish various creative new image representations between individuals and individuals, between individuals and established visual institutions.

The times are constantly changing. Many of the carvings and paintings that were placed in the dark churches in the past were moved down the altar, enter the market, enter the art museums, match the frame, be illuminated by the high light, or even be scanned into a digital version that can be enlarged to make it look
carefully. French art historian Arasse said that exhibition methods that remove a
work from its original text are “Cultural performing on a stage”, part of modern
cultural worship, and specifically, museum worship or exhibition worship. Is it
better to use a variety of multimedia channels today? Will modern people know art
better and love it more? These are all worthy of our consideration.

Of course, the hyperconnected of the museums has obvious disadvantages as well.
The group that grew up in the information age lacks the time and has no patience.
The strong demand of the times is instant gratification, and computers and
networks help us solved most of the problems. Therefore, we cannot use digital
and technology as the sole purpose and values. The significance and value of the
existence of a museum depend on the history, geopolitical situation, socio-cultural
background of the place, and the way the museum defines its own community.
Therefore, we should take this as the primary consideration.

The contribution of the new media environment to today's museums not only
provides new tools but also brings more convenience and diversity to the
management and services of the museum. What's more, the digital revolution
has greatly influenced and changing the cultural values of the museum. We can
even expect that museums in the new media environment would be like the
new museum movement that emerged in the 1970s, driving the transformation
of museums and their ideas. In the future, the participatory experience of the
museums will be a trend. In order to attract audiences from the inside to out,
the museum integrates emerging technologies and means such as social media,
content openness and crowdsourcing, and uses mobile and network technology
innovation to provide audiences with more “immersion experience”, and
brings the knowledge backgrounds of audiences themselves into the museums'
exhibitions and collections, interpret the collections and sharing the experience in
their own way. Visit the museums would be a lifestyle chosen by more people.
PART 3

CASES STUDY OF THE MUSEUM OF MODERN AND CONTEMPORARY ART

Ch_7  American Museum of Modern Art

Ch_8  European Museum of Contemporary Art

Ch_9  Conclusion
During my three years of study in Europe, I went to many museums and galleries, large and small, there was always something attracted me and I just can't take my eyes off it. Whether it is about history, humanities, customs or art, it is all new to me, a completely different cultural system from China. These museum experiences have given me a good frame of reference, allowing me to see culture and art from a different perspective as I travel from one journey to the next with the goal of "constantly looking at paintings", it seems to be different when I look at Chinese culture and art without the Chinese context. In fact, the modernity of the West has a great influence on China, as can be seen in everything from the teaching system of the China Academy of Art to a model of the Museum of Modern Art. Although the exploration of the form of contemporary art has gone far beyond the scope of the two-dimensional plane, and the artworks entering the art museum are a past tense from another level, even the position of the painting form in the art history will continue to weaken. But this does not affect the significance of the existence of paintings preserved in various art museums. Today people talk about the future of art as a kind of “de-image”, but painting is more durable. More than a thousand years later, humans may not look at today's Hollywood blockbusters, but in the art museums, paintings that were thousands of years ago are hanging there, and people are constantly pouring in and seeing them every day, and they will continue to see it in the future.
Today's museums are widely active on the social media platforms, such as Facebook, Twitter, Instagram, even they have on its own video channel on Youtube. They produce integrated media content and reaches out to online tastemakers to help push events. Most of them also have built its own mobile application as an accessory equipment for the on-site museum experiences and digital collection platform. Many museums are discovering that the Web 2.0 world lets them advance their mission online to bring in new and often younger visitors and to educate a wider audience.

The following is the comprehensive case study of the American Museum of Modern Art and the most impressive of my museum tour around Europe, include Nykyaiteen Museo Kiasma, Ateneum, Designmuseo in Helsinki, Finland; Moderna Museet in Stockholm, Sweden; Galleria d’Arte Moderna in Milan, Italy, the analyzes of the European museum of modern and contemporary art based on my practical experience.
Among the museum families with the titles of modern art, the New York Museum of Modern Art is second to none and is one of the most successful museum brands around the world. Founded in 1929, it has about 200,000 pieces of modern and contemporary art and is considered one of the world's leading cultural institutions. As the most recognizable symbol of cultural institutions, MoMA has always been at the forefront of exploration in contemporary art. Recognized by the New York Times as having the world’s greatest collection of modern and contemporary art, from the 1880s European oil paintings and sculptures, including Van Gogh’s The Starry Night, Monet’s Water Lilies, Picasso’s Les Demoiselles d’Avignon, Matisse’s Dance (I), Warhol’s Campbell’s Soup Cans to the contemporary design, film and performing arts, etc.

MoMA’s logo comes from New York graphic designer Ivan Chermayeff, with an attitude and a strong modern style. The classic Franklin Goethe 2 font helps MoMA create a strong, consistent institutional transmission tone.

The New York Museum of Modern Art is located on 53rd Street in Manhattan, New York City (between the Fifth and Sixth Avenues). It has a large collection of top European modernist paintings and sculptures, as well as modern and
contemporary American art, and continues to attract donations from a large number of private collectors. At the same time, with the continuous expansion of contemporary art at the level of ideas and media, the museum has gradually formed a number of research departments including painting, sculpture, video, performance, and new media. At the exhibition level, MoMA strive to present in a diverse manner, including regularly exhibit collections on different themes; providing a exhibit space for the most current artistic phenomena; providing roving exhibition space for internationally influential famous artists or international emerging artists.

In 2000, the Museum of Modern Art and the P.S.1 Contemporary Art Center merged, and the largest platform for American contemporary art was born. Through joint planning events, a shared website, and dozens of individually produced exhibitions and shows, the Museum of Modern Art and the Museum of Modern Art PS1 showcase some of the most dynamic and diverse works of art today, constitute the modern art museum's contemporary art leadership program together. For example, art projects such as "Greater New York" are held every five years, curated jointly by MoMA and MoMA PS1 curators, paying special attention to young artists in the Pan-New York area, providing a good platform for many artists. At the same time, C-MAP has established a global contemporary art research project. MoMA has established an extensive network of contacts with artists, curators, collectors, educators, critics and scholars from other parts of the world, makes an important contribution to the field of academic research project area.
The $400 million expansion of the MoMA is underway and is scheduled to be completed in 2019. The new renovation program expands more showroom space, redesigns the main lobby, undergoes many exterior renovations, and will revisit the museum's art collections and its diversity, which also means MoMA is trying to show more an open stance, trying to break the boundaries defined by its founder Alfred Barr.

Previously, the exhibition halls in the museum were divided according to different art fields, such as architecture and photography. Now, the exhibition halls on each floor will be roughly planned according to different eras. For example, the artworks exhibited in the exhibition halls of artworks in the 1920s and 1930s included photographs, paintings, oil paintings and sculptures. Ann Temkin, head of the Department of Painting and Sculpture, said: “The focus of the discussion on this renovation is to transform a system outdated to some extent, such as photos, media... into a whole consider of the art exhibits way.” She added: "The message we want to convey today is that history is rich and diverse, and our collections are representing these histories. Never repeat the past dogmatism.”

At the same time, MoMA will still retain some showrooms divided by different art fields. Museum curator Glenn D. Lowry said: “There are both traditional reservations and something new surprises. There are both a comprehensive space and a space that follows the traditional classification by field, giving audiences a richer exhibition experience.” Lowry believes that the great renovation goal of this project is to "expand and improve the quality of the exhibition hall, exhibits more art collections in the new and different ways, provide more public space, and improve the circulation of personnel. And to let the museum into a more open position to integrate into its neighborhood as much as possible."
MoMA has built a multi-layered collection exhibit system, including European modernist paintings, masterpieces from American post-war modernism to contemporary art, and the most avant-garde artworks. To fill the gap fields in its art collection, MoMA has been doing what Lowry called "strategic acquisitions," including the addition of the artworks of black artists, female artists, and Latin American artists. The staff of the museum said that the exhibition arrangement of the museum will also strive to follow a more flexible concept, increase the frequency of exhibition turnover, and try to improve the exhibit of museum collections to the level of loan exhibitions.
The creation of MoMA began with a very simple idea of a group of art enthusiasts and philanthropists who wanted to build a small modern art museum to encourage and develop research in modern art and provide public education. The three founders Abby Aldrich Rockefeller, Lillie P. Bliss and Mary Quinn Sullivan encouraged Barr (the first curator of MoMA) to spread the European modern art that was not optimistic at the time, and set the tone for the road after MoMA. MoMA will always maintain the spirit of exploring new things, not sticking to history, and participating in the future with the public.

At the official introduction of The Museum of Modern Art wrote, "We aim to be inclusive places—both onsite and online—where diverse cultural, artistic, social, and political positions are welcome. We’re committed to sharing the most thought-provoking modern and contemporary art, and hope you will join us in exploring the art, ideas, and issues of our time.”

MoMA and MoMA PS1 have a common goal to provide the most engaging and incisive program possible. MoMA hopes to provide a real building that helps people experiment with art; Use art galleries and museums to become an art laboratory, where everyone can learn the creative process of art, help students or young people to improve their appreciation; Share the online courses with more global audiences and want to make the world’s best educational resources accessible to everyone.

According to the new plan, In 2019 will open an expanded MoMA, the art museum will try to get rid of its ever-present image and exhibit more works by other minority artists and female artists in a richer form. More than ever, MoMA will be an inclusive place of gathering, a place of important conversations, and a place where people of all backgrounds and opinions find a home.
MoMA has about 3 million visitors a year, and increasingly more users are accessing museum content from mobile devices. More than half of the moma.org visitors are between the ages of 18 and 34, while the average museum visitor is much older. 60% of their users are local when they access digital content, but this percentage could include international users who are visiting the area when they access content. Almost 30% of the audience engaged in the search for collections, which is a core asset of MoMA, both online and onsite. And most users access individual web pages via Google searches, only a quarter of visitors arrive at MoMA.org via the homepage, due to the dominance of search and the rise of social media.

According to the one-question survey approach with a list of motivations from MoMA: I am searching for exhibitions and events; I am preparing for my first visit; I am planning to visit again; I enjoy looking at art; I am an academic looking to conduct research; I want to learn about modern and contemporary art; I am an artist or creative professional looking for inspiration; I like to stay current with art news; I want to find other ways to engage (membership, jobs); I plan to buy something from the store, which is based on the demographics, level of art knowledge, and involvement with MoMA to characterize each of the motivation categories.
The top three major motivations for moma.org as a whole are consistently: I enjoy looking at art; I am an academic looking to conduct research; I am searching for exhibitions and events at MoMA. The motivations obviously change depending on the section of the website. For visitors, learning is much more important to the collection than elsewhere, following “research” and “looking at art”. Visitors are also more likely to be an “artist or creative professional looking for inspiration” and are the only visitors who are interested in “staying current with art news”.

The audiences of MoMA collections come with research, study and aesthetic motivation. Its main audience segments as scholars, art world professionals, students, teachers and art enthusiasts. The audiences who have some art knowledge are likely to be easier engaged with the subjects.
### Motivations for visiting the collection, moma.org/collection

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<th>I am an academic looking to conduct research</th>
<th>I want to learn about modern and contemporary art</th>
<th>I am an artist or creative professional looking for inspiration</th>
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<tr>
<td>I am preparing for my first visit to MoMA</td>
<td>I am planning to visit MoMA again</td>
<td>I want to find other ways to engage with MoMA</td>
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### Motivations for visiting the calendar, moma.org/calendar

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<th>I am searching for exhibitions and events at MoMA</th>
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MoMA’s early marketing strategy was mainly reflected in print ads, and most visitors got text information about museum exhibitions from the brochures. In 2004, print ads designed by Christophe Niemann were placed on the New York Times. At the same time, MoMA’s official website has been optimized to provide more exhibition information and to allow people to interact.

In 2010, MoMa launched the MoMA AB EX NY app for the iPad, use a typical linear experience and interpret it as a new way of content consumption, hope to make this app as much about the art as possible, use the one which is more gestural and dynamic than two-dimensional and interact directly with the content to bring the user an immersive artistic experience. Senior interactive designer Dave Irons believes that, “The art term glossary and accompanying videos are a great addition to the museum experience. It’s nice to learn about the techniques the artists used as you are viewing their work. Also, it’s impossible to physically rearrange the exhibit chronologically or by artist, but with just the tap of your finger, the app allows you to view the exhibit in a new way.” The app reinforces MoMA’s brand image as a modern and avant-garde organization. Last but not least, its design is so beautiful that even Apple has purchased images for its print ads.

The project “I went to MoMA and...” was launched in 2011. MoMA hopes to enrich the two-way dialogue between the museum and the people who are so integral to it in an interesting and creative way and to understand the overall experience of visitors in the museum by talking about these personal experiences. The museum
offers specially printed record cards, pencils and drop boxes that require visitors to share their stories. Signs asked visitors to share their stories: “Leave us a message, a drawing, a poem, an idea. We’re interested in your day here—what you saw, felt, and thought.” The event was so successful that MoMA decided to turn it into a digital one. Participants can scan papers and get a URL link to share on social media. The marketing strategy not only encourages visitors to share their experiences, enhance communication but also creates a “personality” for MoMA.

In 2014, MoMA collaborated with Creative agency POSSIBLE launched ART 140, which is a collaborative project invites everyone to express what works of art mean to them in 140 characters or less. Participants could select randomly from 140 art pieces chosen by MoMA and tweeted what these pieces meant to them. The joint project that seeks to open up the conversation around art, served for a social experiment aimed at finding out what art means to the masses and reveal how the meaning of art may differ by age, gender, geography or other unexpected factors. #Art140 analyzed vocabularies tweeted in each tweet to understand people’s feelings and thoughts about art, to present new explanations and insights and created graphics to show people’s general feelings about the art. The social media marketing program attracted and inspired people to express their true feelings about art in an innovative way. The strategy has once again succeeded in motivating more people to learn and discuss art.

The digital presence of MoMA was founded by Paola Antonelli and Barbara London, who handcrafted website for their exhibition in 1995 with Mutant Materials in Contemporary Design (May 25th) and Video Space: eight installations. The two projects described as electronic pilots were developed in collaboration with Adrianne Wortzel and Joe Ferrari, then at the Institute for Computer in the Arts, School of Visual Arts (SVA), the sites were originally hosted on the SVA server. MoMA hosted its own website, on mama.org in 1996, and
till now, MoMA has produced more than 200 project-specific websites, working with many of the world’s leading web designers. And as part of the New York Art Resources Consortium (NYARC), collaborate with the Brooklyn Museum and the Frick Collection to archive digital art history resources, such as web-based auction catalogues, catalogues raisonnés, and artist, gallery, and museum websites. The process of digitization is constantly creating new things while archiving and retaining what was built in the past. What a great project.

Digital media are an important channel for inspiring, challenging and engaging with local, national and international audiences. Today, MoMA’s digital ecosystem consists of moma.org, store.moma.org, social media platforms (Twitter, YouTube, Facebook, Instagram, Weibo), mobile applications, and digital signage throughout the building. The museum also produces content for Coursera and Medium, and uses Campaign Monitor to manage email marketing campaigns.

Based on the characteristics of the museum audiences, the MoMA digital team decided to establish several areas of focus:

1. Developing content for young and international audiences. This includes creating a separate video strategy for producing video content and publishing it on YouTube (which has a comparatively young audience).

2. Designing for the multi-device world—especially mobile.

3. Being “the most comprehensive and authoritative source of information” for the museum’s collection by making the collection available in full online as well as using third-party platforms to “meet people where there are.”
Chiara Bernasconi, Assistant Director in the Digital media department at the MoMA in NYC, believes, “Digital Communication and development are fundamental in museums. Museums can't ignore people's habits and how everyone is increasingly using mobile devices to better understand the world.” Under Chiara's leadership, moma.org was transited to incorporating agile development principles into project management. The framework allows project teams to be more flexible and adaptable when developing products. Two priorities were established early on. First, the team chose to implement responsive design principles with a focus on mobile devices based on the knowing that 40% of visitors access website content from their phones. Second, the team prioritized weeding out content on some of the busier pages to create a cleaner, simpler design. Although it's not easy for several departments which constantly produce the content. Digital media teams don't limit themselves to the exact technical requirements and wait for complex issues before the final release date. Instead, they repeatedly release products and continually improve previous versions or phases.
moma audio

MoMA Audio, compatible with iPhone, iPad, and iPod touch has been redesigned several times and evolved into the current application that provides audio interpretation data to assisted on-site visiting. A streamlined, optimized audio listening experience, within the top 10 visitor languages supported: English, French, German, Italian, Spanish, simplified and traditional Chinese, Japanese, Korean, and Portuguese. Aims to help visitors gain new perspectives on modern masterworks and discover contemporary art as curators, artists, and others talk about art in MoMA's unparalleled collection and special exhibitions. Audio for kids encourages younger audiences to look, listen, and learn, and detailed visual descriptions of key works enhance the experience for our blind and partially sighted visitors.
PART 3 CASE STUDY OF THE MUSEUM OF MODERN AND CONTEMPORARY ART
moma signage

The museum’s signage system is an effective way to quickly disseminate information as a metaphor for sound, the visuals always be subtle and hushed so that by the time one enters the museums, the typography is almost silent, allowing the visitor to experience the artwork without distraction. This based on one of the museum’s mission is to provide a space for art and thought, even though its being located in the center of one of the busiest cities in the world. Nowadays, the digital signage is a universal media of information communication as a sign showing digital content in museums. It is usually set up at the information desk or museum entrance and at the ticket office, so that the audience can get the information they need from the beginning.

The definition from Wikipedia is a sub-segment of electronic signage. Digital displays use technologies such as LCD, LED, projection and e-paper to display digital images, video, web pages, weather data, restaurant menus, or text. They can be found in public spaces, transportation systems, museums, stadiums, retail stores, hotels, restaurants and corporate buildings etc., to provide wayfinding, exhibitions, marketing and outdoor advertising.
One of the biggest outdoor media companies Outfront Media announced a partnership on November 5th that will feature iconic works from MoMA on digital screens in public transit stations and within some train cars across the New York MTA, Metro-North Railroad, and Long Island Railroad. MoMA will curate a new selection of artworks for the billboards each month, including paintings, sculptures, animation and video. The inaugural collection includes Vincent van Gogh's The Starry Night and James Turrell's Meeting. (MoMA is not paying Outfront for the deal, and placements Won't be specifically targeted—although Outfront said it is considering the possibility for content deals in the future.) New Content Program bring renowned works from its collection out into the city, for residents and visitors to enjoy. Outfront Chief Product Experience Officer Jason Kuperman said that could change as digital programming and More advanced targeting make it easier to deliver a more nuanced experience to each screen placement. As the only digital medium that can't be avoided with an ad blocker, people may start to feel overwhelmed with the screen grows. Kuperman is hoping more engaging models of content and ad delivery can help.
MoMA offers ongoing Massive Open Online Courses (MOOCs) on Coursera for free, including Fashion as Design, In the Studio: Postwar Abstract Painting, Seeing Through Photographs, Modern Art & Ideas, for the general audience; Art & Ideas: Teaching with Themes, Art & Inquiry: Museum Teaching Strategies For Your Classroom, Art & Activity: Interactive Strategies for Engaging with Art, for both classroom teachers and educators in informal settings. The 5-week course requires approximately 2 hours of study and one quiz per week.

The course aims to explore a variety of perspectives and topics related to modern and contemporary art and design, and include a wide range of original texts, audio, images, and videos, involve studio visits and dynamic conversations with artists, educators, curators, designers, and others. What’s more friendly is some of these courses also offer a Mandarin version. According to statistics, 98% of people learned about MOMA for the first time through online courses, and almost 60% of the audience use this kind of online tool to log in.
Medium

In October 2016, MoMA began to produce longer-form articles about the artists, ideas, movements, techniques, and disciplines that continue to shape global art and culture on Medium. There are three main publications produced by the different departments of MoMA: the first named MoMA, it outputs some about the features and perspectives on art and culture; the second is Digital @ MoMA, which is the musings from the digital media department at The Museum of Modern Art; the third is MoMA Musings, aims to sharing public programs, ideas, and musings on contemporary art and practice from the Department of Education at The Museum of Modern Art, New York.

Medium is an online publishing platform developed by Evan Williams as a way to publish text and documents, it was launched in August 2012. The platform is an example of social journalism, with a mix of amateurs and professionals and publications, or exclusive blogs or publisher on the Medium, and is regularly regarded as a blog host.

The platform software provides a complete WYSIWYG user interface when editing online, with various formatting options as the user edits rich text formats. Once an entry is posted, it can be recommended and shared by other people, in a similar manner to Twitter. Posts can be voted in a similar way to Reddit, and can be assigned specific content like Tumblr. In August 2017, Medium replaced their Recommend button with a "clap" feature, which readers can click multiple times to signify how much they enjoyed the article. Medium announced that payment to authors will be weighted based on how many "claps" they receive.


Digital advocacy

MoMA maintains an active presence on social media by posting daily to promote artists, artworks, exhibitions and events, as well as sharing art news and open class resources with its followers. Throughout the latest three months, I has been collected the main social media account of MoMA and analyzed both owned and earned data, especially the content and feedback of Twitter and Weibo posted between August 1, 2018 - November 1, 2018 in order to find actionable insights.

The content type of posted by MoMA on social media between August 1, 2018 - November 1, 2018. Data collected from 164 Twitter, 127 Instagram, 158 Facebook, 13 Youtube, 93 Weibo
According to the content MoMA generated and posted, I collected 164 tweets and 93 Weibo posted between August 1, 2018 - November 1, 2018 on MoMA’s twitter and Weibo account, and I classified the main construct elements of the posts into five content categories, including content type, hyperlinks, mentions, hashtags, and media. I also did statistics of the retweeted/forwarded data, which reflect the participation of the audiences. I chose Twitter as the research object because MoMA has the most followers on its platform, compared to other social media platforms such as Facebook, Instagram, YouTube. Besides, Weibo is equivalent to the "Twitter" in China, it plays a similar role and also has a large number of users. The comparison of the data between two different platforms, which one is aimed at a large audience of English speakers around the world and another has a large group of users only for China.

The type of content that generates the most user engagement in Twitter is News and Info, which includes current hotspot information, art news, blog posts, etc. Almost every tweet has at least one hashtag or mention, it connected all of its sub-accounts to increase traffic and promotion, creates a unified brand. The two sub-
accounts most mentioned by MoMA are #MoMAPS1 and #MoMAFilm. MoMA increases the frequency of postings during festivals or big events, such as posted related storytelling to link mo.ma/ghosts and use media to create an atmosphere on Halloween, to engage the audience’s emotional participation and enhance contact.

The content of news/information posted by MoMA on Twitter is significantly more than on Weibo, reflecting the fact that many of MoMA’s events are centered around New Yorkers. For overseas audiences, there is more content of exhibits and artists promotion. At the same time, for the Chinese audience, MoMA promote vigorously its online course on Coursera, which has a special mandarin version. And the type of content which include the online course on Coursera posted by MoMA has also attracted the most engagement in Weibo.

In MoMA’s 164 tweets, 88.38% of tweets have a link, and most of the links are to the Exhibitions/events in moma.org, followed by links to the MoMA design store, the MoMA channel of Youtube and Coursera. However, in MoMA’s 93 Weibo, only 23% of Weibo has a link, and most of the links are also to the Exhibitions/events in moma.org, than is coursera.org and store.moma.org. There is no links to the Youtube because some policy restrictions.
The most common hashtags in Weibo posted by MoMA are #MoMACollection and #MoMAPicks, but there are also many blog posts without hashtags because most of the Weibo users don’t have the habit of using hashtags. I tried to search for MoMA at Weibo and found that many people shared their museum experiences, and most of these emotions reflect by their texts were positive and enjoyable. Many visitors use photos to output their favorite artworks and the scenes they saw in the museum which impress them, and it can be seen that the composition of many photos is elaborate, which also reflect the Chinese audience appreciates MoMA. I also noticed that MoMA has interaction with the audience at Weibo. If visitors shared their museum experiences and mentioned MoMA, they will get a reply and a thumbs up, this is a good way to contact the audience because the response would make the audience feel the attention and help MoMA establish a brand image among Chinese audiences with an affinity evaluation.

MoMA combines on-site activities with online communities, make the most of every credible opportunity to create interesting content and concise copy for each moment to drive higher engagement. The social media engagement of MoMA also benefits from a wealth of personal media and collaboration with different forms of media products. This connects users with different preferences and habits, giving more people access to MoMA. MoMA’s staff is an important part of its online
community, their participation online, which is a give of personal glimpse of the backstage of the curators and staff, but also with a common audience perspective at the same time. For example, there is an event on the last Tuesday of each month for #ArtSpeaks, in which museum staff shares their personal impressions of artworks in the galleries, this form of sharing can easily resonate with the general audience, thus contacting with them.

MoMA’s accounts have rich media posts linking to in-depth content about the art as much as daily trivia (from Monet’s birthday to Halloween celebration) in between. As a museum of contemporary art, MoMA has a bright pioneer of the times and also expresses its own clear political position through exhibits, which is why it has always been attractive to the public. The diverse of modernity is also reflected in MoMA’s interactive learning content for all ages, there is always something of interest for a broad audience. Western modernity has a great influence on the region of Asia, and each country and city has different ways of expression. Compare the communication strategies adopted by MoMA on Twitter and Weibo, that is an example of the microcosm of museum communication in different cultural fields.

It can be visibly seen from the collected data that posts that contain current topical issues garner a large number of retweets, which means the audiences pay much attention to the real event of their life, both for the audiences of New York and audiences overseas. As a modern art museum, one of the duties of the MoMA is to popularize contemporary art and convey the richness and interestingness of contemporary art or thought through an interactive relationship, it helps the artworks to be better understand. To a certain extent, the museum of contemporary art has become an art interventional media, a product combining art, design, consumption and social theater. Public participation allows the museum to present a more interesting contemporary picture and a more progressive line of thought, both on-site and online. Its charm lies in its mystery, instability and the highest form of beauty and sublimity, breaking through the narrowness of culture, geography and academic authority, and making its own voice.
MoMA Design Store

Few museums in the world like MoMA, which creates a successful souvenir shop brand that combines design and art. The first MoMA shop opened in 1939, a simple sales counter on the museum premises. To date, it has six independent stores worldwide, which five are in the US and the other is located in Omotesando, Tokyo, targeting the Japanese and Korean markets. The display design of these stores have a great sense of art, and always evokes the desire of design/art enthusiasts to buy.

For instance, in the spring catalogue released by the MoMA Design Store in 2017, there have been many eccentric Surrealist works. Although the works on the catalogue come from modern designers, the use of shadows, suspensions, visual illusions, and unique angles will remind you of the surrealist works of Salvador Dali and Rene Magritte. The designer hopes to reflect on the current environment through the resurgence of Realism.

MoMA goes far beyond the definition of “souvenirs” in general museum stores. In addition to selling replicas of museum collections in the form of souvenirs sold in many museums, buyers at MoMA Design Store will travel to major design exhibitions around the world to collect new products for catalogues published twice a year and try to use it to take care of the moment. Therefore, works that can appear in the catalogues and be placed in the stores are at least convincing in concept. Fast Company has commented that MoMA design store products can be used as a “barometer of design industry trends”.

MoMA Design Store
In the product label of the MoMA design store, in addition to the price, a short description and introduction to the product, such as the name of the designer and the year of creation, etc., are often attached. Commodity Assistant Director Chay Costello believes that this allows consumers to feel as if they were in a museum. The secret of MoMA Design Store's leading position in retail innovation is not only high standards of good products but a keen sense of smell and an open mind. The MoMA Design Store is undoubtedly one of the most successful museum stores in the world, attracting 2.5 million visitors each year and is almost as popular as the artworks on display.

In 2014, MoMA Design Store began to formally cooperate with Kickstarter and then became the hottest crowdfunding champion on Kickstarter. The combination of MoMA design store and crowdfunding website not only makes it an old and young brand, but it also collects potential novelty on Kickstarter, and urges designers to complete crowdfunding goals, like a business incubator, many of the obscured designers are beginning to be known, and it's also the first and only retailer of these designers.
The Nykytaiteen museo Kiasma building itself is a major architectural landmark situated right in the heart of Helsinki, designed by American architect Steven Holl. The meaning of Kiasma in Finnish is “the intersection of nerves or joint ligaments, and the double-rotational chromosome structure”. The name is a fitting symbol for a museum of contemporary art: Kiasma is a place of encounters. It is an arena for the exchange of opinions and the redefinition of art and culture.

Originally this sculpture-style building was not accepted by Finland and was later built in 1996 to the accompaniment of lively debate. The interior of the building is a deep space divided by several arcs, with no obvious signs of an entrance, and the long aisles has sort of a guiding sense. The roof and building facade are mostly made of glass that allows full access to natural light and views through the glass to Toolonlahti Bay and the nearby Park Green, with the walls and ceilings are of white plaster and the floor is dark grey, almost black, concrete. The entire building and interior design is approachable, giving people a comfortable modern feel.

The gross floor area of Kiasma is about 12,000 m2 of which 9,100 m2 are museum spaces. The exhibition spaces are located on four floors. The ground-floor lobby is consists of a ticket office, an item storage place, the Kiasma Theatre, the Kiasma
Shop and an entire area of the adjacent park serve as the restaurant-cafe. When I entered Kiasma, I was first attracted by the aroma of coffee. Kiasma Café also serves lunch from Tuesday through Friday, which was surprised me a lot cause most of the museums without a real place for the meal. The menu is built around dishes that respect local Nordic produce, and all of the information is available on the Kiasma Café web page. The audiences of the museums I saw were very enjoyable, from their look expressions, I could feel the calmness and attitude of life and even some satisfaction. In order to seek inner peace, people have not stopped copying beautiful lifestyle templates from other countries in the past two years. However, Finland is ranked as the happiest country in the world in the "2018 World Happiness Report" survey, it is well reflected from the museum construction.

The exhibition programme of Kiasma focuses on Finnish and international contemporary artists or thematic group exhibitions, aims to reflect the diversity of the phenomena, contents and expressive idioms of contemporary art. There are currently about 8,000 works in the collections which from 1970s until now, and about 100 new pieces are added every year. The collections are an important element of Finnish cultural heritage as part of the collections of the Finnish National Gallery. I visited Kiasma on May 18, 2018, just in time to see an exhibition of works by British artist Grayson Perry, which includes classical ceramic pots and large tapestries on unexpected subjects: Brexit, aesthetic tastes and masculine ideals, as well as the artist’s personal life. (Grayson Perry explores subjects that are universally human: identity, gender, social status, sexuality and religion. In Britain he is also a highly regarded public speaker and maker of award-winning television documentaries.)

I also saw "There and Back Again", an exhibition of contemporary art from the Baltic Sea region, is about a time characterized by the mobility of people, goods
and work but also by political tensions between superpowers. The palpable
backstory is the Soviet era with its restrictions, traumas and memories, and
collected together 26 artists from Estonia, Latvia, Lithuania, Poland, Finland and
Russia. Kiasma’s collection reflects the work of artists who focus on society in
Finland and nearby countries, which is one of the key roles of an contempororay
museum.

The digital ecosystem of Kiasma includes the official website: kiasma.fi; online shop of The Finnish National Gallery: museoshop.fi; social media platforms(Twitter, Facebook, Instagram, Youtube); Kiasma-blog. Kiasma’s website is available in Finnish, Swedish, English, Russian, Chinese and Japanese, which is very friendly to visitors from these countries. Kiasma has the most followers on Facebook, but the content published in Finnish, which to some extent makes it difficult for foreign audiences to understand. However, there are more narratives in English in Kiasma Instagram account. I guess this digital advocacy strategy may be that Kiasma runs different social media platforms to target different users, Facebook posts more event information to the Finns, and Instagram attracts more international audiences for Kiasma.(The Finnish National Gallery comprises three museum units: the Museum of Contemporary Art Kiasma, the Ateneum Art Museum and the Sinebrychoff Art Museum.)
The Ateneum Art Museum has an extensive and high-quality collection, ranging from 18th Century Rococo style portraits to Finnish art from various experimental art movements of the 20th century. The famous works include Vincent van Gogh’s Street in Auvers-sur-Oise (1890); Albert Edelfelt’s The Luxembourg Garden (1887), Akseli Gallen-Kallela’s Aino Triptych (1891), Eero Järnefelt’s Under the Yoke (Burning the Brushwood) (1893) and Hugo Simberg’s Wounded Angel (1903).

The Ateneum building is obviously not as modern as Kiasma. The shape of a symmetrical structure reveals a classical aesthetic model, and originally served a variety of different functions (previously the Ateneum building also housed the Finnish Academy of Fine Arts and University of Art and Design Helsinki). After decades of changes, the sole occupant remaining in the building was the art museum from 1991 until now. It is located in the centre of Helsinki on the south side of Rautatientori square close to Helsinki Central railway station. In the middle of the third floor, there is an area for visitors to rest. The windows look out over the square with a wide view. The interior is also symmetrically arranged space centered on a small sculpture. It provides tables, chairs and album of painting, I am glad it’s in English.

My favorite paintings are all seen at Ateneum. It has the biggest collections of classical art in Finland and mainly introduces Finnish art from the Gustavian period of the mid-18th century to the modernist movements of the 1950s.
Ateneum also houses a handsome collection of international art, featuring works by such masters as Vincent van Gogh, Paul Gauguin, Paul Cézanne, Fernand Léger and Marc Chagall. The collections are classified according to the time and theme of the paintings. And the most exciting to me are portraits works of the Finnish artist Helene Schjerfbeck, and the Woman at the Café by the Italian artist Antonio Donghi, the "textural beauty" of the painting represented by the condense color layer of the oil paint is cryptic, you only feel it when you watch it live by the naked eye, which is high-definition image can not be replaced.

Both in the interior and the facade of Ateneum are decorated with statues and reliefs which contain a lot of symbols. Although the interior and exterior maintain a highly consistent classical temperament, the indoor facilities are very modern and have no sense of disharmony. For instance, on the opposite side of the ticket office in ground-floor is a self-service storage area with a row of lockers and steel racks for hanging clothes for visitors, which looks very modern. And I remember that I was a little tired when looking at Helene Schjerfbeck's portraits, but the museum's stool gave me great support. The wooden bench is covered with a woolen pad, the soft, cozy details made me forget my discomfort at low temperatures outside.

I noticed that there are many digital signages through the Ateneum building, at least more than Kiasma. In second floor, there is a touch screen display of Schjerbeck’s paper works forms part of the exhibition. Due to the watercolors, drawings and prints from are highly sensitive to light and can only rarely be placed on display in an exhibition, this multimedia presentation of Helene Schjerbeck’s works on paper based on digital presentation technologies of Dai Nippon Printing Co Ltd (DNP) features as a permanent part of the exhibition. The display is divided into three parts, according to the life of the painter (1862-1946), include Dawn - early year, The artist at midday, Evening glow. The narrative revolves
around the painter's role in different periods and introduced the characters, stories, circumstances related to her, also provide her photos and works based on the timeline. The information on the screen is clear and easy to operate, the storytelling is used to introduce the different artworks, so that the audiences can intuitively understand the background of the works thus have a deep impression. The screen allows three people to operate simultaneously and support different languages, including Finnish, Swedish, English and Japanese.

The same as Kiasma, Ateneum has the most followers on Facebook, and posts in Finnish on Facebook, posts in English on Instagram. Ateneum Art Museum does more works on the on-site demo to better display the rich background of exhibitions and the collections and interacts with the visitors. Ateneum also offers tailor-made services to schools and different groups, such as events, guided tours and workshops in order to offer all visitors a pleasant and accessible visit. The Ateneum Art Museum is more like a classic gallery, where I got an unforgettable visual feast.
Designmuseo was first founded in 1873, is one of the earliest museums of visual design in the world and have 145 years old until now. The museum's permanent collection consists of over 75000 objects, 45000 drawings and 125000 photographs, including the most representative design work in Finland, such as Aalto vases, Iittala glassware, Nokia mobile phones, Fiskars scissors, Marimekko woven fabrics, angry birds, etc., from the classic Finnish design of more than 1,000 designers from all walks of life, showing the evolution of Finnish design from the late nineteenth century to the present day.

The Design Museum is located in the heart of the Helsinki Design District in the former building of the Brobergska Samskolan high school (architect Gustav Nyström 1895). The appearance of the Red Brick building reveals its historical depth, what is stored in this building is the brainchild of some of the best designers in Finland and around the world. The entire exhibition hall has three floors, small but delicate. Collections are displayed by category, ages and designers. There are web exhibitions provided by Designmuseo online, except the on-site exhibitions so that more people can access the museum through the internet.
Finland as one of the world’s leading countries in design is inextricably linked to its craft traditions. The climatic conditions of the Arctic Circle enhance the Finns’ awestruck of nature, it also promotes their focus on sustainable development, emphasis on tradition, function, craftsmanship, and the use of new materials and methods in industrial design. Crafts and art applications are highly regarded in Northern Europe, the everyday life of Finns was given an aesthetic dimension. The design was actively promoted and Finland rose from the distressed conditions of the Second World War, craftsmen, designers, artists, industrial producers are in close contact.

Inspired by the Designmuseo, I realized that experimentation and exploration in art is an important stage prior to industrial innovation and mass production, which is why they can output so many good works. Finnish ceramics and glass art are very contemporary, designers are deeply rooted in their culture and actively create opportunities to connect with artists from around the world to find new influence. As far as I know, Finnish artist studios carry out Art Residency Program every year, for exchange and contact with artists from Asian and other countries around the world in ceramic art innovation and material development.

In Designmuseo, there are many different ways of interacting to provide visitors with information about the collections. Such as the touch screen display, iPad, digital signages, digital image, video etc. There is an interactive device in the exhibition section of Marimekko. In a dark circular area, there is a display screen and interactive console, the audience is allowed to choose the music, speed and shape of the play, immersive patterns of Marimekko design change will appear in the screen accordingly with the music. And a lot of information and introductions are provided in the iPad, digital images and video are often used to show the design and production process of the products, audiences can learn more about the products design story while watching the real thing. There is also a viewing...
room that loop playback a video about the production of Aalto vases. Finnish design is simple, functional and focuses on the characteristics of human care in the design museum exhibition manifests incisively and vividly.

After the visit, there is a communication area on the side of the stairs on the ground floor. The museum supplies paper and pencils and hopes that visitors talking about Graphic Design in their own way. On the display wall, I saw some interesting patterns from the previous visitors, which is a great way to motivate the audience to think and directly create and I’d love to create something in the design museum as a visitor.

In comparison, the Design Museo is not as active on social media as Kiasma and Ateneum Art Museum. It has the most followers on Instagram and many posts are published in Finnish. This shows that most of the audiences of Design Museo in Finland are Finnish and neighboring countries or on-site visitors.
Moderna Museet is one of Europe’s leading museums of modern and contemporary art. The first museum director Pontus Hultén is regarded as one of the most distinguished museum professionals of the twentieth century and a famous Swedish art collector. Under Hultén, the museum played a seminal role in bridging the gap between Europe and America. Moderna Museet located on the island of Skeppsholmen in central Stockholm since 1958, and the museum opened a new branch in Malmö in the south of Sweden in 2009. The building was designed by the Spanish architect Rafael Moneo, and the museum is surrounded by an open-air outdoor sculpture park, displaying the works of famous sculpture artists from all over Europe.

The museum houses Swedish and international modern and contemporary art, including pieces by Pablo Picasso, Ljubov Popova, Salvador Dalí, Meret Oppenheim, Robert Rauschenberg, Donald Judd and Irving Penn, along with works by contemporary practicing artists. The Collection covers paintings, sculptures, installations, films, videos, drawings and prints by Swedish and international artists from the 20th and 21st centuries, and photography from the 1840s until today, which comprises some 6,000 paintings, sculptures and installations, 25,000 watercolours, drawings and prints, 400 art videos and films, and 100,000 photographs. Swedish and Nordic art have a prominent place in the collection since Moderna Museet is the central national museum for 20th and 21st-century Swedish art. Moderna Museet has the largest body of works by Öyvind Fahlström, Vera Nilsson, Siri Derkert, Dick Bengtsson and many other Swedish artists.

Moderna Museet has pursued a variety of research projects through several collaborations with universities and other academic institutions, aims to promote understanding and interest in the field of modern and contemporary art, and the scholarly processing of the Museum’s collection. The results are shared through
internal and external seminars, major symposiums, articles in national and international publications, monographs and anthologies, exhibitions and catalogs. In addition to experienced the most pioneering modern art collections in Europe since the 20th century, I also felt that the museum has done a lot of work on exhibitions, showing the history of artistic development from the early stage, and the relationship between art and social progress, integrate the modern and classic art. It also promotes the regeneration of art and culture; Under the background of contemporary art, stimulate audiences' interests in art and history.

The facility construction of the Moderna Museet is especially functional and adapt to the most diverse of the collections I have ever seen. The skylight design of the building fully introduces natural light, the interior environment changes with the light conversion at different times of the day. Different types or forms of collections are displayed in an exhibition hall, which creates new narratives and challenging conversations. As the museum’s vision cherished, "to continue to work in the open and experimental spirit for which Moderna Museet has always been known.” Moderna Museet hopes to be a meeting place for people who want to see modern and contemporary art in Sweden. It really looks like a lab, the layout allows me to discover the relevance of many different backgrounds of artworks, some of which are even preset that I have never think about.

The exhibitions of Moderna Museet are visually pleasing, even if the collection is numerous but not crowded at all, and I noticed that there are many areas between the exhibition halls that could be used for rest and discussion, with tables, chairs and books are placed, like a small open meeting room. These well-placed seating built into the museum space itself, and it doesn’t interfere with flow. These facilities are very good for separating different content and giving the visitors a transitional space to digest what they have seen. Obviously, this is due to the consideration of the audience emotional by the museum. And there is an Art Library open to everyone who is interested in art, including researchers, museum staff and the general public, which is one of the largest Nordic specialized libraries for art, photography and design.
Another special thing is the website of Moderna Museet offers a free screen reader (ReadSpeaker) for users, and users can adjust the speed of the screen reading, enlarge the marked text to make it easier to follow it while listening, this is a new way to know exhibitions or collections for the audiences who visit the museum through the internet. Moderna Museet is also very active on social media platforms and has 133,755 followers on Facebook. Most of the posts on Facebook are in Swedish and posts on Instagram are in English. Mederna museet defines itself as a Museum for the future by developing the interaction, keeping an eye on the art and the artists, along with the dialogue with an actively participating audience.
Galleria d'Arte Moderna is a modern art museum in Milan, which was founded in 1921, one of the most visited museums during my time in Italy. It is housed in the Villa Reale, at Via Palestro 16, opposite the Giardini Pubblici. The collection consists largely of Italian and European oil paintings and sculptures from the 18th to the 20th centuries, including Picasso, Van Gogh, Matisse, Renoir, Manet, Cézanne, and Modigliani.

This Neo-classical building with an English style garden was designed by the Austrian Italian architect Leopoldo Pollack, and it was built between 1790 and 1796 as the residence of Count Ludovico Barbiano di Belgioioso, also known as Villa Reale, is a palace in Milan. In 1920, it became a state property of Italian and became the home of the Galleria d'Arte Moderna in 1921. There are complex decorative both on its facades and in its interiors, the Villa’s two facades are embellished with a great number of statues and reliefs with a mythological theme, designed by the Neo-classical poet Giuseppe Parini and sculpted by the same artisans who executed the Duomo’s facade. The building itself is very representative in Italy, the interior decorations express a change in taste during Napoleonic Neo-classicism.
The museum has three floors for exhibitions. The ground floor atrium is used for temporary exhibitions, the first floor is mainly for 19th-century collections, and the second floor is for private collections of Italian collectors Vismara Giuseppe and Carlo Grassi. There are 25 exhibition halls for the permanent collection on the first floor, including the important masterpieces of illustrating Neoclassical themes and figures, such as oil painting of Andrea Appiani "Charity of St. Elizabeth of Hungary", the statue of "Napoleone I" and the sculpture "Ebe" for dancers by Neo-classicism artist Antonio Canova, Italian painter Francesco Hayez's "Portrait of Countess Antonietta Negroni Prati Morosini" and neo-impressionist Giovanni Segantini's painting "Love at the Fountain of Life".

There are 9 exhibition halls on the second floor, 6 of which are used to exhibits the private collections of Grassi, Asian art from the 14th to 18th centuries, Italian oil paintings from the 19th to 20th centuries, and Western artworks. Such as Edouard Manet's "Mr. Arnaud on Horseback", Paul Cézanne "The Thieves and the Donkey", Vincent Van Gogh's "Les bretonnes et le pardon de pont Aven", Paul Gauguin's "Landscape in Brittany - Cattle Drinking" and other oil paintings. The other three halls exhibit Vismara's collections, modern art from 1900 onwards, which houses works of painting and sculpture from Italy, including Carrà, De Pisis, Modigliani, Morandi, Sironi and the foreign artworks from Picasso, Matisse, Renoir, Vuillard, Rouault, Dufy.

In the 34 halls of the Galleria d'Arte Moderna, I often immersed myself in the oil paintings and sculptures and forgot the time, it is more tend to the type of traditional museum, totally Italian style, and always bring me back to the 18th-20th-century scenes, they form a part of my impression of Europe. In addition, pictures and text information for all permanent collections are available on the museum’s website, the 360° panoramic views shown allow visitors to appreciate significant details of some of the most interesting rooms of the Museum and of its garden. The visuality of the website matches the overall temperament of the museum.
Galleria d’Arte Moderna has the most followers on Instagram, although the museum publishes posts in Italian on social media, this does not prevent them from creating a beautiful classic narrative style that appeals to the audience, even if the majority of the museum’s audience is Italian or foreign tourists.
In spite of the art museums have different priorities in the interactive development trends and digital strategies in the context of different regions, cultural atmospheres and collection resources, an art museum that actively engaging in social events and invites audiences to participate is more attractive to the audience. If the art museums only do the exhibits of the collection, it is difficult to make the audiences have a new growth without the research collaboratively with other cultural institutions and reconnecting with the public, showing its value and relevance in contemporary life. In particular, some traditional museums that tend to display classical artworks of permanent collections have more time-honored collections. How to make them have a dialogue and relevance with the public is the primary consideration of the museum of modern and contemporary art.

Today, we have a growing number of museums, a large part of them consumed costly manpower and material resources, but audiences for the museum, galleries, and performing arts institutions have decreased, increasingly people have turned to other sources for entertainment, learning, and dialogue. They share their artwork, music, and stories with each other on the web. Our lifestyle is an irreversible change, we are also being shaped by the environment while constantly developing it. Audiences in the Internet age are no longer just consumers of cultural products, but also active participants in content generation and dissemination. The social Web has ushered in a dizzying set of tools and design patterns that make participation more accessible than ever. Therefore, at this time, we put forward a higher requirement for exhibitions and museums. The art museum must be a creative place and exhibitions must be the creative thing.
Museums of the 21st century are no longer closed systems, but part of a broader system of science, culture and regional relations. There are many museums that specialize in organizing new media department to develop integrated media strategies to accommodate the modern audience’s habit of using social media. But this conversation is often one-way, the museums as a media producer, are constantly outputting the content of art and culture to audiences, but it’s hard to give a feedback to all audiences after they participate, no matter on-site or online. Even MoMA, which is so active on the event and exhibitions and social media platforms, cannot avoid such problems. However, visitors expect access to a broad spectrum of information sources and cultural perspective, and also the ability to respond and be taken seriously. They expect the ability to discuss, share, and remix what they consume. When people can have a real communication with interaction and actively participate in an event and exhibitions of art museums, those places become central to cultural and community life.
PART 4
PROJECT

Introduction
Background
Research
Personas
User Journey map
Wireframes
Visual design
PART 4  PROJECT

Introduction

PSA means A POWER STATION OF ART, is an art museum forum visitors can sharing photo and storytelling, reflecting a contemporary scene which is happening in the art museums, and a relationship between the visitors and art museums. This is a new way to experience in art museums, inspire people to watch for the artworks and pay attention to others in the museum at the same time. The project committed to designing communicate solutions for wide visitors, it is a platform to discuss any confuses the visitors have about contemporary art or museums. Every spectator is a participant and creator in contemporary art.

A considerable part of the contemporary art museum developed by the power station is a typical and interesting existence. This type of contemporary art museum usually retains the imprint of history and is remodeled quite modern, in harmony with the temperament of contemporary art and social theater. So I continued this name with artistic power as the name of the App. The goal is to develop a community that can supplement the artistic energy of people at any time, and enhance the experience dimension of the art museum.

Background

As a student who has received systematic art education, I enjoy the time spent in various modern and contemporary art museums in Europe, but at the same time, many questions in my mind have no answers to find out. Art is too obscure for a lot Of people, too full of mystery, especially contemporary art, what exactly is it, why do we always fail to understand the exhibitions of contemporary art? During
my research, a number of art museums have made great efforts to introduce them to the public, Inviting people to actively engage as art participants, not passive consumers, providing them an integrated environment with Hans's philosophy, which is to use the museum as a new concept of space, giving it a multi-dimensional and diverse space of thinking, and extending this Concept of space to the relationship with the city.

Art and communication are interlinked, from the earliest cave paintings, the intention of art is to be seen. New media images may be the fastest and most effective way for a piece of work to spread in human history. Digitization brings a lot of fresh topic for the discussion to the museum field. To a certain extent, the museum of modern and contemporary art has become a media producer, it explores and moderately spreads through a variety of contemporary art expressions reflected on a social problem or new ideas. Artworks collected in museums gain new life by constantly being seen and discuss, sometimes spread themselves and grow new vines.

Hockney believes that good painting not only accommodates time but also creates time. The painting is owned by time after the end and has been always following the time. To some extent, the collections of art museums are the time of overlapping. Now is probably the best time to talk about paintings and art, and the art museum is the key place to make this happen.

The museum of modern and contemporary art is undoubtedly the product of the fusion of art, design, consumption and social theater. So I want to design a platform dedicated to recording interesting contemporary scenes in art museums, and it is also a forum to discuss all Of the curious about the art and museums, even our society. Using the format of photo and video, build a thought experiments platform to make a new experience in the art museums for the smartphone generation.
Research

Quantitative Research: This quantitative research is cited from the Field Study of Benchmarking Visitor Behaviors and Mobile Device Usage in the Museum by the Studio at CMP in July of 2017. The data from 324 visitors, equally distributed across the three museums to find out the visitors’ experience in the museum.

How often do you visit museums in general?
324 responses
Where did you find information about the museum prior to your visit to your visit?

While visiting the museum, did you have any questions about exhibitions, individual objects or the facility itself?

How did you find the answers to those questions?
Do you have any museum apps on your phone?
324 responses

Did you take any photos while at the museum?
324 responses

If YES, what did you photograph?

- Museum objects: 138 (59%)
- Labels or wall text: 36 (15.4%)
- The people I was with: 216 (92.3%)
- Selfies: 11 (4.7%)
- Photos: 1 (0.4%)
In total, approximately how many times did you use your phone while visiting the museum today?

324 responses

What did you use your phone for while in the museum?
Research Analysis

I summarize the results of the research, extract the elements that can be designed. Combine the similar problems and classify them into the previous design template to find out the solution of the experience process, especially direct at a phenomenon that the most questions from visitors have no way to get an answer. The data shows that most visitors do not have the habits of using museum applications. Or most of the museum apps are used as ancillary devices for live visiting, such as audio guides. When the visitor leaves the museum, the app will be deleted. The existing museum app lacks a complete communication solution between the museum and the visitors. We must notice the pain points that occur in one visiting experience always led by the useless solutions from the previous guiding stage.
Target - Smart phone generation
| Audiences of the contemporary and modern art

According to the purpose of the visitors, we can classify the visitors of the museum into three categories:

**professional researchers**: museum professional, historical relics researchers, archaeologists, museum-related practitioners, etc.

**consultants, learners**: primary and secondary school students, literary and artistic youth, culture and history art lovers, and families who want their children to receive museum education.

**tourists**: a group of tourists with an entertainment-oriented nature of sightseeing.
Samantha

"So many art museums I visited, the more I look, the more my eyes opened."

Demographic

Age: 25 years old

Language: English

Education: Bachelor’s degree

Occupation: Designer

Arts Awareness: Medium proficiency

Location: Boston, America

Motivation

I used to inspire some new ideas by artworks in contemporary museums. I don’t have enough time to attend an on-site activity, so I decide to try to use PSA, the advantage is that I can know about what other people's thinking and what is happening at the first time.

Needs

Get useful information for working
Find interesting photo
Share the ideas about art with others

Favorite Art Museums

The Museum of Modern Art
Metropolitan Museum of Art
Whitney Museum
Guggenheim

Commonly Used Museum App
Jessica

"My happiest time was at the art museums with my child during the weekends. I hope he seeing the world through art."

<table>
<thead>
<tr>
<th>Demographic</th>
<th>Motivation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age:</strong></td>
<td>I have a lovely son. We often go to the art exhibitions together at weekends. I like to use PSA to record his understanding of the world. Children always have more interesting points of curious. I hope that he will gain the power of art in the process of exploring the museum.</td>
</tr>
<tr>
<td><strong>Language:</strong></td>
<td>Italian</td>
</tr>
<tr>
<td><strong>Education:</strong></td>
<td>Bachelor’s degree</td>
</tr>
<tr>
<td><strong>Occupation:</strong></td>
<td>Marketing</td>
</tr>
<tr>
<td><strong>Arts Awareness:</strong></td>
<td>Low proficiency</td>
</tr>
<tr>
<td><strong>Location:</strong></td>
<td>Milan, Italy</td>
</tr>
</tbody>
</table>

**Needs**

- Art education for child
- Record child's growth
- Social community

**Favorite Art Museums**

- Museo del Novecento
- Villa Reale - Galleria d'arte moderna
- Triennale Design Museum
- Gallerie degli Uffizi

**Commonly Used Museum App**

- No habit of using a museum app
Richard

"The time spent at the art museum is the same choice for me as eating and sleeping."

### Demographic

**Age:**
28 years old

**Language:**
English

**Education:**
Graduate degree

**Occupation:**
Full time employee

**Arts Awareness:**
High proficiency

**Location:**
Birmingham, England

### Motivation

The contemporary art museums' collection has always surprises in store for me, I love painting and also those absurd installation artworks. I look forward to getting to know some new friends to discuss about art and to witness the sights of our Time.

### Needs

Social community
Experience new ways of visiting
Record the amusing scence of the art museums

### Favorite Art Museums

- Tate modern
- British Museum
- Victoria and Albert Museum
- Birmingham Museum & Art Gallery

### Commonly Used Museum App

![Museum App Icon]
Wireframe

Homepage NEWS

Homepage LABS
Step 1
Homepage NEWS

Step 2
Enter photo showing

Step 3
View all + information

Redical experiment
#cammuseum #modemartmuseum #abstractart
CAMmuseum reflecting a contemporary scene which is happening in the art museums, and a relationship between the visitors and art museums...
Step 1
Homepage LABS

Step 2
Enter discussing

Step 3
Give a vote
Step 1
Search Art Museum

Step 2
Enter Museum homepage

Step 3
View related information
Action 1
Frame a scene

Action 2
Take a picture

Action 3
Edit and share
Profile

Antony Marshall
Senior visual designer

- 196 Posts
- 126 Collection
- 360 Followers

About
The time spent at the art museum is the same choice for me as eating and sleeping.

My Story
View all

Collection

#cammuseum #mo
#cammuseum #mo
#cammuseum #mo
#cammuseum #mo
| REFERENCE |

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Lee Rosenbaum. July 25, 2016. At SFMOMA, Tech and Culture Meet/ When it comes to museums’ digital offerings, content is best left to curators.
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Screenshot of the motivations for visiting the calendar, moma.org/calendar. Available from: https://medium.com/digital-moma/what-motivates-a-visit-to-moma-s-website-ebad33e67ef0


moma/

*MoMA channel in Medium.* Available from: https://stories.moma.org


Figure. Data collected from social media account between August 1, 2018 - November 1, 2018.