The Digital Museum of the Future

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Outline

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Preface

“…transformations are not only due to the use of increasingly sophisticated technologies, which become obsolete more and more rapidly, but also due to a re-examination of the role of modern public institutions in today’s society and the related fast changing user demands. These trend affect all the functions of the modern culture institutions, from collection management and scholarly study through restoration and preservation to providing new forms of universal and dynamic access to their holdings.”

Bernard Smith, Head of the Preservation and Enhancement of Cultural Heritage Unit, European Commission (EC) 2002
As we proceed in the new millennium, the museum nowadays is facing some new challenges. Whether it is from the need for the museum to re-examine its administrative structure, or from the changes in the role that audiences expect the museum to play, the museum is confronting unavoidable trends and must adapt to new generations of audiences.
II Definition

• What is the definition of “Digital Museum of the Future”?

• “Future” indicates “Futurization”.
  – How well can the museum adapt to the arriving of the new era
  – How well can the museum deal with the fast changing taste of visitors
  – How well can the museum deal with the unknown challenge and risk in advance.

• “Digital” indicates “Digitalization”.
  – The actions many museums take to change the traditional ways they manage, preserve, display, and marketing by using modern technologies like computer.
II Definition

• “Digital Museum of the Future” is a trend of “Futurization” and “Digitalization”.

• It is also a total revolution affecting the museum in the aspects of management, preservation, display, architecture, circulation path, and its relationship with the surrounding environment.

• It’s the motive power to force the museum to rethink about the role it should play in the audience’ visiting experience.
Ⅲ Case study of the world-wide trends

• When the museum faces the tide of futurization and digitalization, there are a few influential trends:
  – The emphasis on the recreational value.
  – The construction of landmark museum architecture.
  – The integration with the natural environment.
  – The rise of enterprise management types and marketing tactics.
  – The tide of digitalization.
  – The adoption of new media and new materials.
- The emphasis on the recreational value.

• With less and less budget each year, it is an important topic for the museum to raise its recreational value, and to provide a place for the audience to have better visiting experience.

• The “Peripheral Value” of the museum
  – Does it have a café with nice atmosphere?
  – Does it have a gift shop with stylish souvenir?
  – Are the staff in the museum friendly enough?
  – Are the display instructions lively and easy to follow?
MOMA (Museum of Modern Art), NY
The exhibition space is bright and open.
Popular Restaurants and Cafés

Photo by Quentin Bacon
The 2005 Holiday Card Collection

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All purchases support the exhibitions and programs at The Museum of Modern Art.
Swarovski Kristallwelten, Austria

Like a theme park.
An exhibition hall with dream-like atmosphere.

The giant's belongings

View into the main hall
Combining sculpture, 3D installation, video art, music, and poem, the artists created an enchanted world for the museum to represent the beauty of crystal,
As described in its website, "...Whether it's for a product presentation, company bash, cocktail party or wedding reception, the Giant seduces his guests into a world of sparkling inspiration, spoils them with culinary delicacies and provides a supporting program that is full of panache."

...Museum caters your needs.
The construction of landmark museum architecture.

- “Art gallery is an environment between public and private. I don’t want it to be a place piled up with lots of art pieces, or a noisy space with crowded people. I hope it to be a place that the visitors can enjoy the quietness and nature, while appreciating the beauty of architecture and works of art.”

  » Pritzker Prize winner, Tadao Ando
- The construction of landmark museum architecture.

- The early types of museum architecture convey two messages:
  - 1. Many of the valuable possession in museums are once belong to the royal and noble classes. Therefore, there should be a mighty architecture to rival its greatness.
  - 2. Elite culture

- Questions:
  - The building is not designed specifically for the museum and its visitors.
  - Not enough storage space for artworks.
  - Circulation paths are not fluent

- Answers
  - The construction of new museum buildings.
  - The renovation and expansion of the old buildings.
Guggenheim Bilbao, Spain

Who will be the next miracle?

Kunsthaus Graz, Austria

An exhibition hall of modern art…inside out.

It is also a permanent light and media installation called “Bix”. A matrix of 930 fluorescent lamps is integrated into the eastern acrylic glass façade. Films and animations can be displayed.
Walker Art Center, USA

http://expansion.walkerart.org/
Tate Modern

The re-utilization of abandoned space and buildings.
The integration with the natural environment.

- Back to nature, the “Zen” philosophy.
- Location: Japan
- Indicative examples:
  - EXPO 2005 AICHI JAPAN not only gave visitors a chance to experience first-hand leading-edge technologies, but also put an emphasis on the close links binding humanity to nature in the 21st century through its theme of "Nature’s Wisdom."
  - MIHO museum designed by I.M. Pei.
The building looks like a huge, glass-encircled disc from the sky.

Exhibition halls has only one floor but different in height and lighting conditions.

No primary façade or entrance. Easy to access from all directions.

Well blending with the streets of Kanazawa.
Chichu Art Museum

- Concept:
  - Environmental art museum

- Blending the natural island environment of Naoshima with modern arts, the museum architecture was built underground

- Within a few more years, the roofs of the museum architecture are planned to be covered fully with plants and trees, and the museum will be totally hidden underground

Chichu Art Museum, designed by Tadao Ando
The rise of enterprise management types and marketing tactics.

- Guggenheim Museum
- The strategy of global management.
- Constantly forming alliances and integrating resources.
- Integrating resources from countries, local governments, private enterprises and museums.
- Construction of landmark museum architecture.
  - Ex. Guggenheim New York, Guggenheim Bilbao
- Flexible strategies toward the flow of collections.
- Influences
  - Great economical benefit
  - Great international visibility
  - A global chain effect for the museums to work hand in hand with urban development plans
    - Ex. La Louvre Lens
– The tide of digitalization

• Digital archive

• Purpose:
  – Preserve the real art pieces
  – Provide materials for long-distant and interactive study
  – The need for advertisement

• Problems:
  – Huge amount of collection
  – New artworks are constantly created in various formats
  – The varieties of collections are too many to categorize

• Subject:
  – How to efficiently and systematically transform the artworks into useful digital data?
  – How to make the losses of truthfulness to the minimum scale in the process of digitalization?
  – How to create the “win-win” situation between “virtual” and “real” by well adopting the advantages of digitalization?
The adoption of new media and new materials

- One important subject for museums nowadays is the demand to actively create closer relationships between its collection and visitors.

- The characteristics of New Media Arts:
  - High degree of interactivities
  - The emphasis on the participating experience

- The year when “New Media Arts” first enter the territory of museum in a formal manner: ZKM Center for Art and Media, Germany, 1997.
The adoption of new media and new materials

• Advantage:
  – Shorten the distance between museum and its visitors
  – Attract young generation to visit the museum
  – Provide another option for museum display

• Dispute
  – Are new media and new materials eligible to be placed in the sanctuary such as art museum?
  – Are they profound in content?
  – Difficulties for the museum researchers to study, explain, and maintain.
  – Some of them are difficult for the audience to understand and manipulate.
“The Weather Project”

- Artist: Olafur Eliasson
- Location: Tate Modern, London
- A giant projection installation art
- Bring the favorite topic of London citizen, the weather, inside the museum.
- Visually intensify the vastness of the great interior space.
- Respond to Turner, British master of riverscape painter, this project also worship greatness of the Nature.
“The CAVE”

- **Artist**: one artist is invited to design the project each year.
- **Location**: ARS Electronica-Museum of the Future
- **A 3x3x3 meters cube with one side open**
- **Visitors wear special glasses and control devices to interact with virtual images produced constantly inside the cube.**
- **Images change in real time according to visitors’ positions and movements, which are detected by the CAVE.**

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“Swimming Pool”

- **Artist:** Leandro Erlich
- **Location:** 21st Century Museum of Contemporary Art Kanazawa
- **The surface of the swimming pool is a tempered glass with water on it. Under the glass is a hollow space that people can walk inside.**
- **Subject:**
  - the relationship between human beings
  - View and / or being viewed? The possible misplacement and change of roles.
― Brain Forest "

- Artist: Gerda Steiner & Jorg Lenzlinger
- Location: 21st Century Museum of Contemporary Art Kanazawa
- Material: artificial flowers, local gold foils, trees and abandoned electric devices, etc.
- Like networks of the nerve system inside the brain
- Subjects:
  - Artificial v.s Natural
  - Inorganic v.s organic
  - Objective v.s Subjective

Gerda Steiner & Jorg Lenzlinger 《Brain Forest》 2004
IV Futurization of National Palace Museum

• The renovation
• National Palace Museum Southern Branch
• Diverse marketing approaches
• Digitalization in NPM
• The integration with new media
The renovation

• Problems:
  – With over 654,500 artifacts in its collection, the 27,438-square-foot (15,118.2-square-meter) gallery area of the Main Exhibition Building is insufficient for the National Palace Museum’s current exhibitions needs.
  – Most of the collection laid inside the boxes in the storehouse for a very long time, which is a great waste.
  – Museum's facilities do not always provide a clear sense of direction or adequately provide guidance through the exhibition galleries
  – Out-of-date display techniques
  – Unqualified emergency and handicap facilities
  – Lack of educational space
  – Vulnerable to earthquake vibrations

• The renovation began in July 2004, and is projected to be finish on June 2006.
National Palace Museum Southern Branch (NPMSB)

- Location: Taibo City, Chiayi County, Taiwan
- Theme: Asian culture and art
- Collection:
  - Islamic jade ware from Central Asia
  - Tibetan-Buddhist artifacts and thangka,
  - Japanese lacquerware, paintings and manuscripts
  - Trade ceramics exchanged through commercial activities among different Asian regions
  - Diplomatic documents among Asian countries, geographies and maps
Architecture and courtyard in NPMSB

- Architect: Antoine Predock
- Inspired by Hwai-min Lin and Cloud Gate Dance Theatre of Taiwan’s 2001 production, “Cursive”
- Combine the Western style of succinct outlines with Oriental philosophy of co-existence with the nature.
- Use the common resources in Taiwan, such as marble, Chinese juniper wood, bamboo, pine, etc. as the building materials.
- Jade Mountain, the highest mountain in Taiwan, was the image for the architecture.
Architecture and courtyard in NPMSB

- The philosophy behind the design of interior space:
  - "... visitors move through space and atmosphere, 'imitating the linear route of ink, full of lyrical flows and strong punctions, with rich variations in energy.'
    » ~Antoine Predock
New Media Gallery

• NPMSB will put an emphasis on the application of new technology and multimedia.

• Help the audience to understand and interact with the collection in the museum.

• “The display style will be different from the classical style of Taipei NPM. There will be a special simulation exhibition area where visitors can experience with, a mini theatre for young audience, a discover zone that achieves its educational purpose by the special designed game and DIY activities, and a reading section that has information related to the exhibition and display.”

  » Dr. Shou-chien Shih, Director of NPM
-Diverse marketing approaches

• Budget issue
  – gradually tightened budget from the government
  – The possibility of corporationized

• Solutions
  – A “Foundation Department” was established in 2001
  – Bring in the idea of marketing, and run the NPM as an international brand
  – Change prices of some products to adjust to market-oriented economy standard
  – Propagate the idea of “Old is New”
  – Actively seek out international vendors
  – By cooperation with well-known international brands and designers, NPM is developing various new product lines.
- Diverse marketing approaches

• Collaboration example: Franz, the well-known company who won “The Best In Gift Award” in New York, 2002.

• A series of elegant china-ware titled “A pair of swallows resting among peach blossoms” developed by Franz.

• Franz incorporated images from a work by Giuseppe Castiglione, an Italian artist of the Qing court, into vases, spoons, and teapots.

• US$6,000 limited edition for a set.

• All 38 sets in Taiwan are sold out within one month.

• Possible collaboration partners in the future: Alessi, CHANEL, ANNA SUI, etc.

“A pair of swallows resting among peach blossoms” limited edition by Franz.
-Digitalization in NPM

- Accomplished by the collaboration between NPM, government, research institutes, schools, and private corporations.

- Develop process: seeding period, sprouting period, growing period, spreading period

- Starting point: 1999, a cooperation with IBM, to build up a prototype system and a few amount of Hi-resolution image files.

- Present: “growing” period, which has “Digital Archive”, “Digital Museum”, and “e-Learning” programs.
Digital Archive

- **Task**: photographing, scanning, color correction, watermark protection, printing, description writing, metadata design, knowledge database design, and application program development for NPM collection.

- **Objective**: to build up a complete database system consists of pictures and description words of the cultural relics.

- **Achievement**:
  - A foundational database system
  - “3D Virtual Exhibition System for NPM Collection”
3D Virtual Exhibition System for NPM Collection

• Advanced technology:
  – Panoramic photography
  – 3D Lacer scanning
  – Image-based Modeling

• Content:
  – Five of the most treasured items of NPM: Ivory Sphere, Boat carved from an Olive Pit, Mao-Kung Ting, Revolving Vase, Jadeite Cabbage
  – Application: 5 short animated films
Digital Museum

• Task:
  – Resource: products from “Digital Archive”
  – Adopt the latest multimedia and exhibition technology with lively and abundant content from NPM collection and make the best use of it.

• Objective:
  – Promote the outcome results of digitalization in NPM
  – Multiple international award-winning websites, CDs, DVDs
  – Multimedia display system
  – Movies

DVD video & Interactive CDs

Movies—“Craftsmanship of the Golden Age” (left), “The Passage” (right)
e-Learning

• **Task:**
  - Turn the products from “Digital Archive” into learning materials for various target audience
  - Work with teachers from different schools to develop learning programs

• **Objective:**
  - Digitalizing all the learning content and make them available through internet.

• **Achievement:**
  - An exhibition that held in many places in Taiwan
  - Title: “A Butterfly in the Evening Breeze-The Imperial Gardens of Emperor Hui-tsung”
  - An exhibition that allow one or more audience to interact with the artwork in the same time
  - Without real antique or its replica, the exhibition has already attracted more than 130,000 visitors within one year

The exhibition of “A Butterfly in the Evening Breeze-The Imperial Gardens of Emperor Hui-tsung”
The integration with new media

• Mobile Digital NPM

• Starting point:
  – to improve the interactivity between visitors and the museum exhibition.
  – To integrate the achievements of “Digital Archive”, “Digital Museum”, and “e-Learning” programs.

• Objective:
  – To bring in the concept of New Media Art
  – To diversify display methods
  – To overthrow the common fixed impression that NPM only exhibit historical important antique

• Method:
  – Cooperate with international and domestic curators and digital artists
  – Integrate with resources from schools, research institutes, and private corporations
  – By using the materials from NPM collections, we hope to develop a new media exhibition form that is fresh, unique, and profound in content.
V Conclusion

- The trends of futurizarion and digitalization will still play important roles in museum management and its thinking style.

- Two extremes:
  - 1. new technologies, digitalization, new media
  - 2. primal, unadorned exhibition

- New technologies doesn’t guarantee good exhibitions. A thoughtful exhibition, even with the most modest elements and decoration is still possible to make it touch its audience and shake to their very cores.

- Museums that are thoughtfully and creatively planned will be most appreciated.

- Under the constantly changing environment, the museum needs to carefully examine itself in the aspects of its targeting, missions, demands of audience, etc., and make the most possible exhibitional, educational, and economical value out of limited resources.
V Conclusion

• Many people come to the museum for a metaphysical and spiritual desire, a sublimation of inner peacefulness. The vibration, as pure as religions.

• “When our lives gradually surrounded by high-tech products like mobile phones and internet, more and more people will eager to find their ways back to the nature, to feel the origin of life.”
  » International acclaimed architect, Toyo Ito

Thank You