

# TELDAP 2012

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## A Digital Museum Service Framework Based on the Integration of Virtual and Physical Membership

### **Content :**

To enhance their social education function and to realize their goal of sustainability, modern museums have introduced membership services and strengthened their visitor's interaction/participation to establish an important marketing channel for promotions and long-term loyal consumer groups. Traditional museums generally use membership cards to provide event information and benefits. The rise of computers and the Internet has now produced digital museums based on providing online or e-commerce services to its online members. Due to the differences in the time of creation and business requirements, the physical and online membership services usually operate independent of each other. The result is a lack of integration in membership, content, services or marketing. Aside from the ineffective integration between physical and online membership, even the membership services for the different applications of digital museum tend to develop and operate separately, weakening marketing and business management. To solve the above problems, this paper presents a digital museum service framework based on the integration of physical and virtual membership for the physical and digital museum membership applications and sustainable business issues. The virtual and physical integration is used as the basis to construct a digital museum service framework that will strengthen and expand the museum's customer relationship management, its quality of service and marketing resources.

The digital museum service framework for an integrated physical and virtual membership consists of three layers: the integration of membership, content and services layer, service linkage management layer and the virtual/physical integration service portal. The membership, content and service integration layer contains the membership, service and content management modules. The management of all membership data and activity records for physical and online membership is consolidated under membership management. The service management consolidates and manages all of the application services that span the digital and physical museum including digital archives, online exhibition, e-learning, mobile learning and educational activities. Content management covers several different levels including the management of collections, exhibits, science education and operations. Service linkage management consists of four main functions: access services, analytical services, recommendation services and content services. Access services provide members with an inter-service data access and linkage protocol while also recording each member's learning

activities and activity participation in the digital and physical museums. The analytical and recommendation service function is responsible for analyzing each member's browsing behavior or use of museum services in order to recommend other areas of interest to the individual or group as well as other integrated physical/virtual resources. The content services provide the multi-layer and unified contents required for the higher-level integrated virtual/physical services portal. This portal provides digital and physical members with a folksonomy platform for community and individual services. Members will be able to use this portal service platform to access unified contents and services that span the virtual/physical spaces and/or multiple disciplines. The museum can then use this integrated content and service environment that spans virtual/physical spaces and different disciplines to incorporate an all-spectrum service that links the collection, exhibition, educational and business activities of the physical and digital museums. The digital museum service framework for an integrated virtual and physical membership described in this paper has already been implemented by the National Museum of Natural Science through the Taiwan e-Learning and Digital Archives Program. Using an integrated database of nearly 100,000 physical and online members as the core, construct a museum business and service model that integrates digital and physical content, service, promotion and marketing. Through intensive customer relations interaction and participation, a sustainable business model based on digital and physical service synergies, mutual marketing and win-win situation of mutual prosperity has been developed.

Keyword: Virtual and Physical membership, Digital Museum, Customer Relationship Management, Sustainable Business

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