

Metadata Standards for Digitization of Traditional Textile Design

R. Anil Kumar¹

UGC-SRF, Department of Home Science
The Gandhigram Rural Institute – Deemed University
Gandhigram, Dindigul, India
anilfashion@gmail.com

Dr. R. I. Sathya*

Prof, Department of Home Science
The Gandhigram Rural Institute – Deemed University
Gandhigram, Dindigul, India
sathyaashok99@gmail.com

Abstract - This paper describes the applicability of Metadata Standards for the purpose of digitization of selective Traditional textile designs of India. There are wide classes of metadata Standards and only those Standards found applicable to textiles and fashion has been sorted under consideration for the study purpose. Further while describing textiles objects and materials the metadata Standards can be considered. It is very clearly described that while digitizing process of traditional textile design; the cataloguing format should follow the principles and Standards of metadata that is accepted globally. The main objective of this study is to establish metadata Standards to unify the representation, manipulation or transmission of information related to the traditional designs so that two or more different systems can understand in the same way.

Keywords - Metadata, Digitization, Textile, Design, Standards, Data

1. INTRODUCTION

In Fashion designing digitization plays a wide-range of extensive application. To have an elegant and competent work almost every machine can be interfaced with computer. By knowing the steps of clothing construction and fashion designing, digitizing technologies used in fashion designing can be illustrated well because in each step use of CAD-CAM can develop the process.

Since it digitizes and simplifies the entire design process, CAD software has all but replaced the traditional drawing board. Recent CAD software affords opportunity to stay away from small operations and manual work, to lift up meticulousness, productivity and organize information flow. The usage of garment designing systems eliminates the time-consuming manual preparation of patterns, creation of layouts and repositioning of written information. The computer systems are meant for the execution of every single process and the integration of all processes into one joint flow, for the organization of logistics and the mobility of work tasks.

CAD (Computer Aided Design) software has been in use by designers to create sketches, croquets, patterns and silhouettes. Convergence of CAD technology with web technology is now aiming to increase production efficiency, customer satisfactory degree with modern-cheep-fit garments and reduce delivery times. [16]

It is now common knowledge that digital information is fragile in ways that differ from traditional technologies, such as paper or microfilm. The fact that information is increasingly stored in digital form, has led to an accelerated search for effective methods of managing electronic information resources.

Today, with the introduction of CAD and its many software capabilities, the possibilities are endless. These challenges can be faced by combining solutions such as CAD/CAM and 3D technologies with Internet tools to provide optimal solutions for meeting all requirements, from collection design to visual merchandising through production. Automation (CAD/CAM)

involves all the processes of conceptualizing, designing, analyzing, prototyping and actual manufacturing with Computer's assistance. [1]

2. DIGITIZATION

Digitization has started to play a major role in sustainability of rare Traditional Indian Textile Designs. Global factors like Modernization, Globalization and Technology upgradation has lead to the destruction of Traditional Crafts. Hence the need to preserve the designs has become the need of the hour. It has become an essence to gain knowledge on the concepts such as, defining digitization, examining process, assessing archival concerns and dissemination compression techniques. The purpose of digitization, Strategies behind digitization, its benefits, issues and challenges of digitization has become very important in the sustainability of Traditional Indian textile designs. Digitization is a process to capture an analog signal into digital form. The term digitization is a shorthand phrase that describes the process of making a digital version of a 'Real World' object or event, enabling the design of the textile materials to be stored displayed and manipulated on a computer, and disseminated over networks and/or the World Wide Web.

The purpose of digitization is to:

- To preserve the age old materials for long use that is important and valuable for future.
- To facilitate new forms of access and use.
- Better and enhanced access to a defined stock of research material
- Creation of a single point of access to documentation from different institutions concerning a special subject
- Support for democratic considerations by making rare textile crafts more widely accessible.

- Better search and retrieval facilities for library types of materials.
- Enhance access
- Improve preservation
- To give the institution opportunities for the development of its technical infrastructure and staff skill capacity.
- Digital projects allow the users to search collections rapidly and comprehensively from anywhere at any time.

3. METADATA

Metadata is a set of attributes used to describe an object. Metadata is structured information that describes, explains, locates, or otherwise makes it easier to retrieve, use, or manage an information resource. Metadata is often called data about data or information about information. In reviewing the library and information science literature of the past few years, there is no shortage of views of the significant role of metadata in meeting the most pressing needs and challenges of digital resource management. A number of researchers agreed that the underlying principle for metadata is to link and integrate heterogeneous, multi-platform, massive digital information collections that are contributed by different institutions into a single unified resource so these digital repositories are accessible by anyone, from anywhere, at anytime. [18][7][8][14][11]

Metadata assumes a key position and enables communication along various processes. It acts like a nerve centre in data warehouse. [12]

Metadata can be used to describe many different types of levels of entity from abstract concepts to physical objects. [13]

By documenting the workflow and metadata elements commonly used by museum professionals, a standardization of approach would eventually lead to coordinated efforts to share like information. [4]

There are three main types of metadata:

- Descriptive metadata - describes a resource for purposes such as discovery and identification. It can include elements such as title, abstract, author, and keywords.
- Structural metadata - indicates how compound objects are put together, for example, how pages are ordered to form chapters.
- Administrative metadata provides information to help manage a resource, such as when and how it was

created, file type and other technical information, and who can access it.

4. METADATA STANDARDS FOR FASHION COLLECTION

There are wide classes of Metadata Standards Globally, each system has its own set of principles and attributes. The following are few of the important Standards that is applicable for the description of fashion and textile materials more elaborately.

4.1 AACR2 – Anglo American Cataloging Rules, 2nd edition

AACR2 is the primary content standard used in the library field in the US, Canada, the UK, and Australia. Its use is almost exclusive to libraries, although there have been calls for the archives and museum communities to adopt it for the description of “bibliographic” types of materials. While primarily focused on descriptive metadata, instructions exist that cover technical, rights, and structural metadata as well. AACR2 is scheduled to be replaced by RDA. [2][10]

4.2 AAT – Art and Architecture Thesaurus

The AAT is one of a suite of controlled vocabularies maintained by the Vocabulary Program at the Getty Research Institute in Los Angeles. It focuses on generic terms for the description of works of art, architecture, and material culture. The AAT is organized hierarchically within seven facets: associated concepts, physical properties, styles and periods, agents, activities, materials, and objects. The vocabulary may be searched one term at a time freely on the web, and is available for license in bulk. [5]

4.3 CCO – Cataloging cultural objects

CCO is a content standard for the description of works of art, architecture, and material culture. It was developed in partnership between the Visual Resources Association and the Getty Foundation, and as such attempts to meet the needs of both the visual resources (frequently tied to libraries) and museum communities. [4]

4.4 CDWA – Categories for the Description of Works of Art

CDWA is a long-standing metadata standard from the museum community designed as a framework for the description of works of art and material culture. It is an extensive set of descriptive elements, including 532 categories and subcategories. Usage guidelines distinguish between data

elements intended for display and those intended for indexing. CDWA defines only category labels and definitions - it does not define a specific syntax for encoding them, although the CDWA guidelines suggest a relational structure providing for easy re-use of authority records. CDWA is commonly implemented in museum management software. [6]

4.5 CDWA Lite – Categories for the description of works of Art Lite

CDWA Lite is an XML representation of a subset of the full CDWA category set, explicitly designed for the sharing of descriptions of works of art and material culture via OAI-PMH. The OAICatMuseum OAI-PMH data provider software is designed to share CDWA Lite records in addition to Simple Dublin Core. There are ongoing efforts to harmonize CDWA Lite and MuseumDat into a new format called LIDO. [6]

4.6 DCAM – Dublin Core Metadata Initiative Abstract Model

The DCMI Abstract Model is a framework for the components of resource description and how they relate to one another. The structure of the DCAM is very similar to and inspired by the RDF model. The full model has three main sub-parts: the DCMI Resource Model, the DCMI Description Set Model, and the DCMI Vocabulary Model. These three work together to allow robust semantic relationships to be recorded between resources. The DCAM is a far cry from the 15 element set of simple Dublin Core that is familiar to many in the cultural heritage community, and represents a different and more robust approach to resource description. The DCAM is significantly more complex than the original simple Dublin Core, but offers a corresponding significant improvement in functionality and re-usability. Encodings of Dublin Core metadata in HTML, XML, and RDF all implement different subsets of the full DCAM. [3]

4.7 MuseumDat

MuseumDat is a metadata structure standard for museums. It is based upon CDWA Lite, but while CDWA Lite has a heavy focus on works of art and material culture, MuseumDat also is appropriate for other types of museums such as technology and natural history. MuseumDat is defined in a W3C XML Schema. The current version is 1.0. There are ongoing efforts to harmonize CDWA Lite and MuseumDat into a new format called LIDO. [9]

4.8 RDA – Resource Description and Access

RDA is the planned replacement for AACR2 as the predominant content standard in the library community. It is intended to be useful beyond the library community as well.

While primarily focused on descriptive metadata, some instructions exist that cover technical, rights, and structural metadata. RDA pushes the boundaries of a content standard, referring to sets of rules as “elements” which makes it closer to a structure standard than AACR2. Different communities will likely find either RDA’s rules aspect or its data element aspect more interesting than the other. The standard is currently in draft; the initial version of RDA is scheduled for release in the summer of 2010. The initial release will have placeholders for several planned chapters.

4.9 REACH – Record Export for Art and Cultural Heritage

RLG is a not-for-profit membership corporation of over 160 universities, national libraries, archives, historical societies, and other institutions with remarkable collections for research and learning. Rooted in collaborative work that addresses members’ shared goals for these collections, RLG develops and operates information resources used by members and nonmembers around the world.

Founded in 1974 and incorporated in 1975 by Columbia, Harvard, and Yale Universities and The New York Public Library, RLG was conceived to help achieve the economies and power of service that come from pooling resources, expertise, and operations. The organization became a pioneer in developing cooperative solutions to the problems that research collections and their users face in the acquisition, delivery, and preservation of information.

In 1997, RLG launched the REACH project to explore how existing information in museum collection management systems could be extracted and repurposed to provide online access to museum object descriptive information. [15]

4.10 VRA Core – Visual Resource Association Core Categories

The Visual Resources Association Core Categories represent an early successful effort of a professional community to develop a metadata standard tailored to its own needs. VRA Core was originally built upon the Dublin Core base, adding features needed for the description and management of visual resources. It allows for the separate description of Images, Works, and Collections, reflecting the need of image repositories to manage data about the reproductions to which they provide users access separately from the metadata about works of art, architecture, and material culture themselves. The current version of this standard is VRA Core 4.0, which features two options for implementation: “unrestricted” which defines the VRA Core data elements, and “restricted” which

enforces data constraints on certain elements to predefined vocabularies or date formats. [17]

5. METADATA ELEMENTS

Table - 1: Desired Elements for the Registration of Information

| S.No | Desired Element | Description of Element |
|------|-------------------------------------|--|
| 1. | Accession Number / Number of Source | Unique number used to identify items and the name of agency which assigns the number |
| 2. | Original cataloguing source | The organization which created the original record and the language of cataloguing |
| 3. | Language of Information | The Language of any textual information accompany the costume |
| 4. | Geographical Information | The geographical information of the costume |
| 5. | Temporal Information | Time period of the contents of the costume |
| 6. | Work Type | Category of the costume being catalogued |
| 7. | Manufacture Information | Place, manufacturer and date. Others about manufacturer |
| 8. | Source / Donor | Name(s) of individual(s) who owned or donated the costume |
| 9. | Repository Name, Location | Name of Geographic place of the repository that currently hosts the costume |
| 10. | Tag collection | Location of the Tag |
| 11. | Electronic location and access | All the electronic information of the costume |
| 12. | Exhibition notes | Any exhibition History |
| 13. | Remarks | The History, role, criticism, special characters of the costume |

The desired elements of metadata related to production / manufacture that is required for Registration of information provided in Metadata Standards has been listed in Table 1. By accession to these descriptive information's, one would be able to know by whom and when the product was manufactured, place, date and time of manufacture, as well as a brief history and characteristics of the product.

Table - 2: Desired Elements for the Descriptive Information

| S.No | Desired Element | Description of Element |
|------|---------------------------------|--|
| 1. | Costume Title | Title of Costume being catalogued |
| 2. | Gender | Gender information of the object |
| 3. | Accessories | Accessories of the Costume |
| 4. | Dimension | Dimension or size or measurements |
| 5. | Techniques | Techniques Used |
| 6. | Materials | Primary and Secondary materials used |
| 7. | Colour / Pattern / Structure | Colours used, surface patterns-structural, decorative elements |
| 8. | Quantity | Number of pieces of a dress |
| 9. | Related person or organizations | The name(s) and age(s) of individual(s) or organization(s) who owned, worn |
| 10. | Cultural / Influence | Primary Cultural influence |
| 11. | Period | Time period of the contents of the costume |
| 12. | Index items | Uncontrolled terms which are not derived from a controlled subject heading system / thesauri |
| 13. | Descriptions | Terms from controlled subject systems / thesauri |
| 14. | Secondary Materials | Trimming (laces, beads, ribbons etc) |
| 15. | Citations | Published references |
| 16. | Remarks | The history, role, criticism and special characteristics of the costume |

The Metadata of textile articles that are essential for the purpose of digitization has been listed in Table 2. By accession to the metadata elements one can have a detail understanding on the functional and aesthetical parameters of the textile article like name of the costume, accessories, primary and secondary materials that are used in the costume and many other relevant information's.

6. CONCLUSION

While Designing Metadata, plan work should be formulated to frame Standards and Principles that suits the requirement. Hence while digitizing textile and fashion related materials the elements of the metadata Standards will be very much useful. For the purpose of digitization of Traditional textile designs variety of metadata format sheets is to be prepared. Hence in preparing a digital collection of these objects, a detailed description of Elements of metadata is to be framed out which could be chosen and managed carefully. If the metadata is

prepared on such global standards the information can be adopted to any system that follow such similar principle.

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