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Metadata and its Elements for the Storage and Retrieval of Graphic Material and Artwork: A Study

Rekha Rani

Librarian, School of Directorate of Education, Delhi, INDIA Email: ranirekha191@gmail.com

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ABSTRACT: In today's digital age, the management and preservation of artwork have taken a digital turn, necessitating the use of advanced tools and methodologies. One such crucial aspect is metadata – the structured information that provides context, description, and organization to artistic creations. The current research delves into the diverse forms of metadata and their constituent elements utilized in the context of Graphic Material/Artwork across a range of institutions, museums, and galleries. Metadata standards, that aid in managing, describing, indexing, and ensuring the long-term preservation of digital information. This article will prove to be a valuable reference for professionals such as Fine Arts College Librarians, Archivists, Technicians, and other personnel involved in describing Graphic Material/Artwork. Within this piece, a presentation is made of the various metadata standards and their corresponding components, encompassing frameworks like Categories for the Description of Works of Art (CDWA), CDWA Lite, Dublin Core, VRA (Visual Resource Association) Core 4.0, RLG REACH (Record Export for Art and Cultural Heritage), and Object ID. These standards are employed to organize and characterize Graphic Materials/Artwork, underscoring the significance of metadata in the art world. This significance is highlighted by showcasing its diverse types, elements, and standards that collectively facilitate efficient organization, accessibility, and preservation.

KEYWORDS: Metadata, Storage and Retrieval, Graphic Materials, Artwork

1. INTRODUCTION

Metadata, often referred to as "data about data," serves as the backbone for effective artwork management. It comprises essential information that helps in the identification, classification, and retrieval of artistic pieces. Metadata not only aids artists, curators, and collectors but also plays a pivotal role in enhancing the experience of art enthusiasts and researchers. Commonly, it referred to as 'data about data' or 'information about information,' metadata encapsulates details of objects in both conventional and digital formats. While terms like "metadata schemes that describes any document," "metadata standards," "metadata elements," and "metadata schemas" possess nuanced distinctions, they are often used interchangeably. Different communities may also employ varied terminology to discuss components of metadata; for instance, a database designer might term a metadata component as "data fields" rather than "elements." In essence, metadata functions as supplementary data about the objects housed in a collection, irrespective of whether these objects exist in traditional or electronic form. In the realm of standard library practices, catalogue records express metadata, as they provide information concerning the library's verity of data (Bekaert, Ville, & Rogge, 2012).

1.1 Types and Elements of Graphic Materials/Artwork Metadata

Descriptive Metadata: This type of metadata encompasses information that describes the essential characteristics of the artwork, such as the title, artist's name, creation date, medium, dimensions, and a brief description. Descriptive metadata provides vital context for understanding the piece

and its historical or cultural relevance.

Administrative Metadata: This category includes details about the artwork's ownership, provenance, rights management, and usage restrictions. Administrative metadata ensures the proper management and legal compliance of the artwork.

Technical Metadata: Technical metadata focuses on the technical aspects of the artwork, including its file format, resolution, color profile, and other technical specifications. This information is crucial for digital preservation and accurate reproduction.

Structural Metadata: Structural metadata outlines the relationships between different components within a complex artwork, such as multi-part installations or multimedia pieces. It helps maintain the integrity and intended presentation of the artwork.

2. LITERATURE REVIEW

In the digital age, the management, preservation, and accessibility of artwork have been significantly impacted by the implementation of metadata standards. This literature review examines the role of metadata in the art world, focusing on its diverse applications, benefits, and challenges.

The repository of the digital library houses metadata that facilitates the management of information, aiding in identifying, describing, and pinpointing the stored data. This metadata serves the purpose of representing the information's content for the processes of indexing and retrieval (Tsai, 2007). Metadata for artwork encompasses descriptive, administrative, technical, and structural information. Descriptive metadata offers crucial context by providing details such as the artist's name, creation date, medium, and brief description. Administrative metadata manages ownership, rights, and provenance information. Technical metadata focuses on technical specifications like file format and resolution, ensuring proper preservation (Simor, 2015). Various metadata standards have been developed to maintain consistency and interoperability within the art community. These standards, such as Dublin Core, VRA Core, and REACH, are designed to accommodate different types of artwork and collections. They facilitate efficient organization, retrieval, and dissemination of artwork-related information (Greenberg, 2001). The Metropolitan Museum of Art located in New York offers a variety of options for observing outcomes from a basic search, including thumbnails, thumbnails coupled with fundamental metadata, or a filmstrip view that showcases larger images. In each of these, users can interact with the images and access comprehensive item records. Furthermore, when conducting a search focused on a specific category like "ceramics," results can be sorted using five criteria: firstly, by the person associated with it (artist, maker, culture); secondly, by its attributes (material or method); thirdly, by its origin (geographic location); fourthly, by its historical context (era or date); and fifthly, by its place in the museum (department). Each of these criteria further offers specific subcategories using controlled terminology, functioning as links to refine results. Notably,

initial keyword, enabling effortless and rapid access to images and their associated metadata with escalating levels of detail (Menard & Smithglass, 2014). At the German Institute for the History of Art in Florence (Kunsthistorisches Institute in Florenz, KHI). approximately 15 percent of the institute's photo collection has been integrated into HiDA (hierarchical data administrator), and with ongoing efforts to catalogue all newly acquired items within HiDA. The metadata within HiDA is interconnected with digital images, facilitating search accessibility and providing contextual information for interpreting the images. The linkage between the two data sources is established via the image file name, which is entered for each photo document in HiDA. The data within HiDA and the accompanying images are stored within the web database ZOPE, an Open Source Software employed for web publishing (Bieber, Schweibenz, Bieber, & Schweibenz, 2005). Thorough scrutiny of the metadata connected to images provided by libraries and museums unveiled a consistent pattern in the details featured within an item record. These details encompass the title, date, creator, subject, original source, and collection. In relation to the original artifact, approximately 40 percent of the resources encompass dimensions, material, and source information (Gupta et al., 2022). Furthermore, around 50 percent of the resources address copyright considerations related to either the original piece or the corresponding image (Menard & Smithglass, 2014). The metadata standards set forth by the Getty Research Institute and the Visual Resources Association - including VRA Core and CCO (Cataloging Cultural Objects) - have been meticulously tailored to suit art objects and their visual counterparts (Ann, 2015). Notably, NTU boasts an extensive collection of electronic resources encompassing diverse databases, image databases, e-journals, e-books, NTU publications, and a broad array of audio-visual content available in VHS, VCD, DVD, and audio disc formats. This multimedia assortment spans documentaries, lectures, feature films, music discs, and student works (Cheong, 2008). Metadata has emerged as a potent tool for organizing and navigating the expanding reservoirs of digital content, spanning images, audio, videos, and diverse digital materials. Commonly known as 'data about data' or 'information about information,' metadata encapsulates the essence of objects in both traditional and digital formats. The terminologies "metadata schemes that describes any document," "metadata standards," "metadata elements," and "metadata schemas," although subtly distinct, are often used interchangeably. Different communities may employ varying language to reference metadata components; for instance, a database designer might label a metadata component as "data fields" instead of "elements." Essentially, metadata serves as supplementary data, enriching the context of items within a collection, regardless of whether they exist in traditional or digital mediums. In established library practices, catalogue records exemplify metadata, furnishing insights into the library's data collection (Bekaert, Ville, & Rogge, 2012). Metadata significantly aids in identifying, describing, and locating information in a digital library's repository. Moreover,

there's no requirement for additional textual input after the

metadata is pivotal in representing content for indexing and retrieval purposes (Tsai, 2007). When it comes to digital documents, their proper representation relies on a set of metadata, allowing for identification by a wide audience. Absent metadata, a digital document remains inaccessible, rendering it virtually nonexistent (Smithglass, 2012). The Metropolitan Museum of Art in New York offers diverse viewing options for search results. Thumbnails, thumbnails with basic metadata, and a filmstrip view showcasing larger images are all available. Users can click on an image to access a comprehensive item record. Results of categoryspecific searches can be filtered by Who (artist, maker, culture), What (material or method), Where (geographic location), When (era or date), and in the Museum (by department). Each filter presents subcategories via controlled vocabulary, serving as links to refine results, providing swift access to images and their metadata (Menard & Smithglass, 2014). The German Institute for the History of Art in Florence (Kunsthistorisches Institute in Florenz, KHI) has incorporated 15 percent of its photo collection into HiDA (hierarchical data administrator), with plans to continue cataloguing new acquisitions. HiDA's metadata, linked to digital images, enhances search accessibility and image interpretation. The connection between HiDA data and images rests on the image file name, entered for each HiDA photo document (Anusha et al., 2023). Both HiDA data and images reside in the web database ZOPE, an Open Source Software used for web publishing (Bieber, Schweibenz, Bieber, & Schweibenz, 2005). A detailed analysis of metadata associated with images from libraries and museums reveals consistent presentation of information in item records: title, date, creator, subject, original source, and collection. In relation to the original object, approximately 40 percent of resources include dimensions, material, and source details. Additionally, around 50 percent address copyright matters pertaining to the original or the image itself (Menard & Smithglass, 2014). Metadata standards from the Getty Research Institute and Visual Resources Association - VRA Core and CCO (Cataloging Cultural Objects) - were tailored for art objects and their visual representations (Ann, 2015). NTU boasts an extensive collection of e-resources encompassing image databases, e-journals, e-books, NTU publications, and audio-visual content in various formats (Cheong, 2008). Metadata acts as a guide, enabling users to discern which images warrant deeper exploration, align with their search criteria, and are suitable for their intended task. The Corcoran Library Image Collection integrates art, photography, and graphic design images primarily from its slide collection. Users can employ keywords, creators, titles, dates, materials, techniques, styles/periods, subjects, work types, or classifications for searches. Records can be browsed while filtering by classification, work type, style/period, and date. Image records incorporate a sizable image window followed by descriptions. Users have the ability to zoom, pan, rotate images, and use various tools through the CONTENTdm Website Configuration Tool. This collection employs a VRA Core 4.0 schema crossreferenced with Dublin Core. Due to copyright concerns, full-size images are accessible only within the Corcoran campuses via IP authentication, while metadata remains

open access (Press et al., 2015). A digital document is portrayed as an assembly of files distinguished by a distinctive identifier. Regardless of the document's nature, it is imperative to provide a description that renders it recognizable to the majority. This description encompasses a collection of metadata. In the absence of metadata, the digital document essentially lacks true existence, as it remains beyond reach and inaccessible (Smithglass, 2012).

3. METADATA STANDARDS FOR GRAPHIC MATERIALS/ARTWORK

Numerous public and research libraries, museums, archives, local historical societies, corporations, professional associations, and private collectors assume the role of guardians for a diverse array of graphic materials and artworks. Within these entities, an assortment of graphic materials and artworks, including paintings, sculptures, photographs, posters, and portraits, are meticulously curated. These organizations employ various methods to arrange these materials, encompassing techniques like assigning accession numbers, classifying them under specific numbers, and categorizing them based on material type or technique. The integration of computer technology has emerged as a pivotal factor in streamlining the organization of these materials, facilitating enhanced efficiency and accessibility. Several metadata standards have been established to ensure consistency and interoperability in the description and management of artwork. These standards enable seamless communication between institutions, galleries, and databases. Some notable metadata standards include:

3.1 Categories for the Description of Works of Art (CDWA)

The inception of the Categories for the Description of Works of Art (CDWA) took place during the early 1990s and is attributed to the efforts of the Art Information Task Force (AITF), which received funding from the Paul Getty Trust. Comprising individuals from various sectors involved in providing and utilizing art information, such as art historians, museum creators, registrars, visual resources experts, art librarians, information managers, and technical specialists, the task force collaborated on this initiative. CDWA encompasses 31 overarching categories and over 380 subcategories. Its primary aim is to establish a framework that not only aids in aligning existing art information systems but also facilitates the creation of new systems.

3.2 CDWA Lite

Termed CDWA Lite, this variant signifies a streamlined iteration of CDWA, encompassing the essential elements utilized for the depiction of cultural artifacts. The development of CDWA Lite was a collaborative effort involving the J. Paul Getty Trust and ARTstor, with a specific emphasis on its compatibility with the Open Archives Initiative's Protocol for Metadata Harvesting (OAI-PMH). Comprising a total of 22 elements, CDWA Lite comprises 19 elements devoted to descriptive metadata and 3 to administrative metadata, out of which 9 are mandatory for inclusion.

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3.3 Dublin Core

Dublin Core, known as the Dublin Core Schema, comprises a concise collection of vocabulary terms adept at characterizing a range of resources – from web assets like videos, images, and web pages, to tangible items such as books or CDs, and even intricate creations like artworks. The utilization of Dublin Core Metadata serves diverse functions, spanning from straightforward resource depiction to the amalgamation of metadata terminologies from various standards. This extends to fostering interoperability among metadata vocabularies within Linked Data networks and Semantic Web applications. The foundational Dublin Core Metadata Element Set comprises 15 distinct metadata elements.

3.4 Visual Resource Association (VRA) Core

Designed specifically for visual resources like artwork, VRA Core includes elements for capturing complex attributes such as visual content and relationships between different pieces. The VRA Core, formulated by the Data Standards Committee of the Visual Resources Association, stands as a definitive data standard designed for cultural heritage resources. Its genesis dates back to 1996, while the latest iteration, version 4.0, was introduced in 2007. This version has found extensive application within art libraries, museums, archives, and diverse institutions committed to managing cultural heritage and images. At its core, the VRA Core comprises a collection of metadata elements, each representing specific units of information like title, location, and date. This set of elements is complemented by an initial framework outlining how these components can be hierarchically structured.

The element set within VRA Core extends a comprehensive categorical framework for describing both visual cultural works and the accompanying images that chronicle them, known as "VRA Core Image Metadata." Notably, this standard is adept at accommodating the depiction of interrelated resources at multiple levels. For instance, it effectively represents an original painting, a slide capturing the painting, and a digitized version of that slide. VRA Core adeptly captures details about work records, encompassing tangible items like paintings, photographs, sculptures, and buildings. It further extends to encompass image records, offering descriptions of representations of these objects, including slides and digital images, preserved within an institution's holdings.

The utility of VRA Core shines particularly bright in contexts such as art collections, where users necessitate exhaustive indexing and retrieval capabilities, employing specialized terminology for aspects like genre, culture, style, and period. This standard has garnered significant adoption in various cultural heritage initiatives centered on art collections, demonstrating its effectiveness in organizing and presenting visual materials in a detailed and meaningful manner

3.5 RLG REACH (Record Export for Art and Cultural Heritage)

Engineered for online accessibility to descriptive data concerning museum objects, such as paintings, etchings, and various other object types, logged within collection management systems, RLG REACH (Record Export for Art and Cultural Heritage) aims to streamline museum object access through shared descriptive methodologies. The overarching objective of REACH is to extract machinereadable data from diverse museum collection management systems, amalgamating this data into a single interface for researchers to explore. The REACH testbed database comprises a substantial collection of over 10,000 records originating from art and cultural heritage institutions. Notably, this database pertains to the actual museum objects themselves rather than their surrogates, encompassing a wide array of art objects and cultural artifacts.

3.6 Object Identification (Object ID)

Object ID establishes a standardized protocol for documenting and delineating collections of archaeological, cultural, and artistic items. This standardized documentation not only aids in identification but also proves valuable in instances of loss or theft, facilitating the potential recovery of these items. Developed in collaboration with a broad spectrum of stakeholders, including the museum community, law enforcement, customs agencies, the art trade, and insurance sector, Object ID addresses the illicit trade of cultural heritage. By promoting the use of this standard and fostering global collaboration among pertinent organizations, Object ID serves as a deterrent to the illegal trade of cultural assets. In cases of theft, the information documented through the Object ID standard can be crossreferenced with databases containing information about stolen artifacts, such as INTERPOL's database of stolen artworks. What was initially conceived as a pragmatic tool to aid in recovering pilfered cultural treasures has now earned international recognition as an indispensable and efficacious asset during inventorying processes. Object ID encompasses nine distinct categories for objects.

3.7 Cataloguing Cultural Objects (CCO)

A comprehensive guide for documenting, describing, and cataloging cultural artifacts alongside their visual surrogates, Cataloguing Cultural Objects (CCO) zeroes in on art and architecture, spanning prints, manuscripts, sculptures, paintings, photographs, and constructed structures, among other visual media. Its scope extends to encompass an array of cultural objects, ranging from artifacts to utilitarian items within the realm of material culture. Central to CCO are its nine core elements, supplemented by an additional 116 elements that further refine its comprehensive framework.

4. DATA ANALYSIS AND INTERPRETATION

Data was gathered from a diverse range of sources, including journals, online resources, websites, and articles from well-known databases such as Emerald, Scopus, and JSTOR. Subsequently, this data was structured, organized, and subjected to analysis, both in tabular form and through paragraphs. The references were meticulously formatted in accordance with the guidelines outlined by the American Psychological Association (APA).

S	CDWA	CDWA Lite	Dublin	VRA Core	RLC (RFACH)	Object ID	000
N.	CDWA	CDWA Lite	Core	4.0	KLO (KEACH)	Object ID	
0	Object/Work	Object/Work Type	Title	Work	Type of Object	Type of object	Object/Work
1.	Object Work	Object work Type	THE	Collection of	Type of Object	Type of object	Type/Title
				Image			-) [
2.	Classification	Title	Creator	Agent	Date of Creation/Date	Material and	Creator/Creator
					Range	Techniques	Role
3.	Titles/Names	Display Creator	Subject	Cultural	Place of	Measurement	Physical
4	Creation	Indexing Creator	Description	Dete	Origin/Discovery Object Name/Title	Incorintions and	Characteristics Style/Culture/Date
4.	Creation	indexing Creator	Description	Date	Object Name/Title	markings	Style/Culture/Date
5.	Style/Periods/Movements	Display Measurements	Publisher	Description	Techniques/Process	Distinguishing features	Location and Geography
6.	Measurements	Indexing Measurements	Contributor	Inscription	Medium/Materials	Title	Subject
7.	Materials and Techniques	Display Materials/Techniqu es	Date	Location	Dimensions	Subject	Class
8.	Inscription/Marks	Indexing Material/Technique	Туре	Material (Type)	Subject Matter	Date or period	Description
9.	State	Display State/Edition	Format	Measurement s	Style/Period/Group/Mov ement/School	Maker	View Information
1	Edition	Style	Identifier	Relation	Creator/Maker		
11	Facture	Culture	Source	Rights	Nationality/ Culture of Creator/Maker		
1.	Orientation/Arrangement	Display Creation Date	Language	Source	Current Owner		
13	Physical Description	Indexing Date	Relation	State	Current Repository Name		
14	Condition/Examination History	Location/Repositor y	Coverage	Style Period	Current Repository Place		
15	Conservation/Treatment History	Indexing Subject	Rights	Subject	Current Object ID Number		
16	Subject Matter	Classification		Technique	Provenance		
17	Context	Description/Descrip tive Note		Textref	Language		
18	Descriptive Note	Inscriptions		Title	Electronic Location & Access		
19	Critical Response	Related Works		Work Type	Related Object		1
20	Related Works	Rights for Works			Notes		
2	Current Location	Record					
2	Copyright/Restriction	Resources					
23	History						
24	Exhibition/Loan History						
25	Cataloguing History						
26	Related Visual Documentation						
27	Related Textual References						
28	Person/Corporate Body Authority						
29	Place/Location Authority						
30	Generic Concept Authority						
31	Subject Authority						

Table 1: Various Types of Metadata and its Elements

4.1 Occurrence of Metadata Elements

Figure 1 presents the occurrence of Metadata Elements of various metadata standards i.e. Categories for the Description of Works of Art (CDWA), CDWA Lite, Dublin Core, VRA (Visual Resource Association) Core 4.0, RLG REACH (Record Export for Art and Cultural Heritage) and Object ID used for organizing and describing the Graphic Materials/Artwork to organize the Graphic Materials/Artwork. It shows frequency of Object/Works Type, Title, Classification, Creator/Maker/Indexing Creator, Agent, Date of Creation, Materials and Techniques, Subject/Authority etc. that how frequently these Metadata Elements are being used in various Metadata Standards.



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Figure 1: Occurrence of Metadata

. 4.2 Occurrence of Other Metadata Elements

Table 2 shows that out of 51 Metadata Elements, 29 Metadata Elements occurring once example Agent, Physical Characteristics, Publisher, Distinguishing Features, Contributor, Medium, Format, View Information, Facture, Culture, Nationality, Orientation/Arrangement, Language, Condition/Examination, and Coverage etc.

Table 2: Occurrence of other Metadata

		METADATA STANDARDS							
S. N 0.	Metadata Elements	CDWA	CDWA Lite	Dublin Core	VRA Core	RLG	Object ID	CC0	Occurr ence of Various
1.	Agent				\checkmark				1
2.	Physical Characteristics							\checkmark	1
3.	Publisher			\checkmark					1
4.	Distinguishing Features						\checkmark		1
5.	Contributor			\checkmark					1
6.	Medium					\checkmark			1
7.	Format			\checkmark					1
8.	View Information	,						\checkmark	1
9.	Facture	\checkmark							1
1 0.	Culture		\checkmark						1
1 1.	Nationality					\checkmark			1
1 2.	Orientation/Arrang ement	\checkmark							1
1 3.	Language			\checkmark					1
1 4.	Condition/Examina tion	\checkmark							1
1 5.	Coverage			\checkmark					1
1 6.	Conservation/Treat ment History	~							1
1 7.	Provenance					\checkmark			1
1 8.	Context	\checkmark							1
1 9.	Electronic Location & Access					\checkmark			1
2 0.	Critical Response	\checkmark							1
2 1.	Related Works	\checkmark							1
2 2.	Record		\checkmark						1
2 3.	Copyright/Restricti on	\checkmark							1
2 4.	Exhibition Loan History	\checkmark							1
2 5.	Cataloguing History	\checkmark							1
2 6.	Related Visual Documentation	\checkmark							1
2 7.	Related Textual References	\checkmark							1
2 8.	Person/Corporate Body Authority	\checkmark							1
2 9.	Generic Concept Authority	\checkmark							1

4.3 Metadata with Example of a Famous Painting

On the basis of above study these metadata have been identified which are given below:

Table 3: Metadata of a Famous Painting

Sr. No.	Metadata	Example
1.	Title	Mona Lisa
		Other Title(s)
		La Gioconda (In Italian)
-		La Joconde (In French)
2.	Artist/Maker/Creator	Leonardo da vinci
3.	Price	Rs. 5, 159 Crore
4.	Size/Measurement/Di	// cm X 53 cm
5	Medium	Oil paints on a poplar wood papel
5.	Material	Oil Paints on a popiar wood paner
7	Date	1503-1519
8.	Style	Renaissance
9.	Period	Renaissance
10.	Year	1503-1519
11.	Present Place	Louvre Museum, Paris
12.	Creation Place	Florence
13.	Geographic Location	The Musee du Louvre in Praris,
	of Work	france
14.	Institute/Oragnization	The Musee du Louvre in Praris,
15	Name	Irance
15.	Color	Red, Blue, Yellow and bright flesh
		Tones
16.	Starting Time for	1503
101	Work	
17.	Language	Italian
18.	Source	Musee du Louvre
19.	Type of Work	Portrait
20.	Subject Indexing	Oil Painting, Portrait, Renaissance
	Terms	Print
21.	Classification Terms	Engigmatic Expression, Stumato
22	A accession Number	NW 770 and MR (Department of
23.	Accession Number	Painting of the Louvre)
24	Exhibition History	1800 Napoleon Bonapart's Bedroom
21.	Enhouton mistory	1804-Grand Gallery of the Louvre
		1974- Tokyo National Museum etc.
25.	Loan History	1863- USA for seven weeks
		1974- Tokyo National Museum
26		1974-Pushkin Museum etc.
26.	Techniques used in	Stumato means Vanished or
26	Work Material used in work	Linseed Oil Turnentine or White
20.	Waterial used in work	Spirti and Varnish
27.	Description of Work	The most famous painting in the
		world. The woman sits markedly
		upright in a "pozzetto" armchair with
		her arms folded, a sign of her reserved
		posture.
28.	Object Type	Painting
29.	Genre	Portrait
30	History (Theff)	The Mong Liss Painting disappeared
51.	mony (mon)	from the Louvre in France in 1911
32.	Vandalism	In 1956 someone threw acid at the
		bottom half.
		Another vandal threw a rock at the
		work.
33.	Restoration/Preservati	Painting is under the bulletproof
	on	glass, which is 1.52 inch thick glass.
		Fermanent Temperature of 43 Degree
34	Special Record	In 1962 Mona Lisa was insured for
	-reena reesord	\$100 million holding the Guinness
		World Record

5. CONCLUSION

Metadata has revolutionized the way to manage, access, and appreciate artwork. Its multifaceted nature, encompassing descriptive, administrative, technical, and structural aspects, ensures comprehensive coverage of artistic pieces. This research investigates different metadata schemes and their components in systems like Categories for the Description of Works of Art (CDWA), CDWA Lite, Dublin Core, VRA Core 4.0, RLG REACH, and Object ID, all relevant to Graphic Material/Artwork. The study reveals that each of these analyzed metadata schemas includes elements that facilitate the exploration, utilization, verification, and management of Graphic Material/Artwork. Furthermore, the quantity and relative distribution of elements supporting these functionalities differ across the various schemes. By adhering to established metadata standards like CDWA, Dublin Core, and VRA Core, the art community ensures the accurate representation and preservation of these cultural treasures for generations to come. As technology advances and the digital landscape evolves, metadata remains an essential tool in fostering a deeper understanding and connection with the world of art

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