

The Potential of AI in Improving the Media Role of Audiovisual Content in Oman

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Abstract

The study aimed to explore the importance of audiovisual content in enhancing the media functions of media institutions, the obstacles associated with the management and preservation of audiovisual media, and the possibility of benefiting from artificial intelligence to improve the use of audiovisual content. The study focused on the Ministry of Information in the Sultanate of Oman, and relied on the descriptive approach using a survey to identify the importance and benefits of audiovisual content and the challenges of its preservation and management. The survey was distributed using Google Forms to users of audiovisual content in the Ministry of Information. One of the most prominent results of the study is that more than two-thirds of respondents believe that audiovisual content plays an important role in supporting the Ministry of Information in its activities, in addition to its social and cultural value. Among the challenges of managing and preserving audiovisual media content is the lack of a strategy to protect it, and there is a lack of expertise related to preserving audiovisual media. The study suggests using artificial intelligence as a tool to support the archiving of audiovisual media content, and to increase efforts to digitize media materials that have not yet been digitized.

Keywords: *Audiovisual Media, Digital Preservation, Ministry of Information, Artificial Intelligence, Audiovisual Archives.*

Introduction

Audiovisual content includes auditory, visual or textual information in a digital form on a medium and can be referred to as multimedia. By combining sound and images, audiovisual information provides a level of communication that goes beyond textual content, enhancing understanding and increasing the impact of the content, especially with regard to ideas related to emotions, context and complex concepts. This impact is increased by the amount of knowledge contained in the audiovisual media, which helps media institutions perform their activities and achieve their goals. Audiovisual content is an essential support for the media activities of institutions such as radio, television, press institutions, news agencies, etc. It is also a source of analysis and community studies; it contains many cultural and personal stories that help document important stages in national history and understand the specificities of each culture. Among the characteristics of artificial intelligence (AI) are the great diversity of knowledge and related technologies, including learning patterns and machine learning, automatic speech processing, and analysis and processing of signals and images. Audiovisual Archives are concerned with collecting, preserving, managing, and making available audiovisual media, and their presence became widespread in the second half of the twentieth century (National Archives and Records Administration, 2016).

In the Sultanate of Oman, the first Ministry of Information was established in 1970 during the reign of Sultan Qaboos. Since then, the Ministry has worked to develop and strengthen the media infrastructure by focusing its efforts towards directing media activity to support the process of sustainable development (Omanuna, 2024). The Omani Radio and Television Authority was established by Royal Decree No (108/2010) on October 19, 2010, whereby the Authority gained financial and administrative independence and was affiliated to the Council of Ministers. On August 18, 2020, Royal Decree No. (2020/95) defined

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the competencies of the Ministry of Information and ended the Public Authority for Radio and Television; which led to the transfer of employees, rights and obligations to the Ministry of Information.

The Ministry of Information seeks to achieve several strategic objectives, including those related to enhancing the value of the Ministry's audiovisual archives as a media institution, such as proposing draft laws and issuing regulations related to its work, and providing information to citizens about internal and external events and the development progress in the country (Information Portal, 2024).

The media sector in the Sultanate includes several media outlets that play a vital role in providing a distinguished and diverse media content, including a number of radio stations that focus on preparation and production, such as the various Omani radio stations (General, English, Youth, Holy Quran, and Classical Music), television channels (such as the General Channel, Sports, Cultural, and Oman Live Channel), and the News Section, which is considered the main source of local events and activities and highlighting new decisions and legislation. In addition, electronic media represents a modern interface that links radio, television and the public via the Internet via electronic social media and many websites and electronic platforms that provide content that suits all categories of the society.

Study Problem and Questions

Audiovisual archives are recognized as crucial repositories for the memory of media institutions. Consequently, significant emphasis is placed on their preservation, with substantial efforts directed towards creating suitable preservation environments and developing the essential human skills required for effective management and utilization. The evolution of digital audiovisual content presents a significant challenge for media institutions in optimizing its utility. Technological advancements enable the transition to various electronic formats, including digitization and electronic archiving on servers. Nonetheless, the management of this expanding collection of audiovisual content presents challenges, particularly in terms of organization, preservation, and efficient information retrieval.

This study was dedicated to uncovering the significance of audiovisual content within the Ministry of Information in the Sultanate of Oman, examining the media functions of the audiovisual archive as perceived by users, the obstacles encountered in managing and preserving it, and the potential of AI in improving access to such content. In light of these considerations, the study raises the following questions:

Why is audiovisual media content important for media institutions, and which groups benefit from it?

What challenges might impact the media function of audiovisual media content?

How can AI contribute to enhance the media function of audiovisual content?

Importance of the Study

The study holds theoretical significance in enriching Arab literature concerning the documentation and digitization of audiovisual content, while also illuminating the media role of audiovisual archives. Its practical importance for both officials and information specialists within the Ministry of Information lies in exploring the significance of audiovisual content and identifying the challenges that information specialists face in its management and preservation. Additionally, this research serves as a valuable addition to existing studies that delve into the impact of AI on emphasizing the importance of audiovisual content for the Ministry of Information and its stakeholders.

Study Methodology

This study relied on a descriptive approach to examine the media role and benefits of audiovisual content within the Ministry of Information (addressing the first and second objectives). Data regarding the significance of audiovisual content and the challenges in its management and preservation within the libraries of Oman Radio and Television at the Ministry of Information were gathered through a survey.

This survey was distributed to radio and television users in Oman via a Google Forms link. Designed as a textual tool, the survey aimed to introduce participants to the study's problem and its impacts, featuring questions or prompts for responses (Young, 2016).

To ensure the survey's validity and alignment with the study's objectives, it was sent for evaluation by three specialists in information and document studies from Sultan Qaboos University (Oman), Cairo University, and Beni Suf University (Egypt). The survey involved inquiries aimed at assessing the importance of audiovisual content to users, the level of interest among Omani media institution officials in digitization, their suggestions for supporting electronic archiving, as well as challenges related to management and preservation. Moreover, the study incorporated an objective analysis by examining literature on AI to determine its role in managing, preserving, and facilitating access to audiovisual content. This analysis involved systematic collection and categorization of relevant topics, identification of gathered elements into conceptual categories, and detailed descriptions. The search process involved the use of keywords such as "AI," "audiovisual content," and "audiovisual media."

The study community involved 512 participants, including radio and television officials, program producers and directors, media professionals, and others, distributed as follows: 386 in television, 95 in radio, and 31 in electronic media (Ain platform). The survey was conducted during February and March 2024. The researchers received 148 responses, representing a rate of 31% of the study community.

Table 1 presents the breakdown of respondents based on gender, experience, and academic qualifications. The data reveals that three-quarters of the respondents were male (75%), while the remaining quarter were female (25%). This gender distribution aligns with the prevailing trend in the radio and television sector in the Sultanate, where male participation tends to be higher than female's. In terms of experience, the largest percentage (24.3%) of respondents fell within the range of 5 to less than 10 years of experience. Regarding educational qualifications, the majority (60.8%) held a bachelor's degree, while approximately 19% possessed a master's degree or doctorate. This distribution indicates that the respondents possess a solid educational background in the field of media, reflecting a sufficient level of expertise in this domain.

Table 1. Distribution of Respondents According to Gender, Experience and Academic Qualification Variables

N.	Variable	Respondents	Number	%
1	Gender	Male	111	75%
		Female	37	25%
		Total	148	100%
2	Years of Experience	Less than 5 years	17	11.5%
		5 years to less than 10 years	36	24.3%
		10 years to less than 15 years	35	23.6%
		15 years to less than 20 years	33	22.3%
		20 years and more	27	18.3%
		Total	148	100%
3	Educational Level	Audio Engineering Courses	1	0.7%
		General Education Diploma	22	14.9%
		Post-Secondary Diploma	1	0.7%
		Higher Diploma	4	2.7%
		Technical College Diploma	1	0.7%
		University Diploma	1	0.7%
		Bachelor's	90	60.7%
		Master's	24	16.2%
		PhD	4	2.7%
Total	148	100%		

Study Terminology

Artificial Intelligence (AI): In this study, AI refers to a scientific discipline that involves implementing techniques enabling machines to emulate forms of human intelligence. Within the context of document and data management, AI utilizes learning methods to analyze data for the purpose of organizing, managing, and archiving it effectively.

Audiovisual Media: Described as all technologies and diverse media and tools facilitating the transfer or communication of content (ISO, 2017). This involves audio recordings, films, videos, images, and other visual works associated with audiovisual media (Society of American Archivists, 2024).

Previous Studies

According to the objectives of the study, by reviewing databases and searching online, the researchers found a number of studies related to AI and audiovisual media content as follows:

In terms of the significance of audiovisual content and its role in media, UNESCO (2016) highlights that many countries invest substantial resources in ensuring appropriate archival storage for audiovisual materials, implementing measures to ensure their longevity, and recognizing their significance as a fundamental component of national identity. Audiovisual content serves various purposes related to heritage preservation and memory, offering a diverse range of information compared to traditional written sources (Nadhir et al., 2013). Audiovisual documents play a crucial role in analyzing and understanding societal realities, as archives of audiovisual media contain narratives depicting the lives and cultures of diverse societies (Oussama, 2021). Moreover, these materials are utilized in education, training, research, and entertainment (Mulauzi et al., 2021), impacting both literate and illiterate populations (Al-Hazeq, 2019). Films, radio broadcasts, television programs, and audiovisual recordings hold significant influence over various sectors of society, contributing to cultural enrichment and knowledge dissemination.

Regarding challenges that may impact the media role of audiovisual content in media institutions, research by Mensah et al. (2017) highlights issues related to audiovisual archive preservation in Ghana, such as the obsolescence of playback devices, which hampers access to information contained in audio and video recordings. In Algeria, within television institutions, challenges related to the preservation and management of audiovisual media include poor organization stemming from spatial constraints and employee neglect. Additionally, a lack of training for archives management personnel due to budget constraints impedes effective management practices (Khadija, 2008). Furthermore, audiovisual documents are highly susceptible to environmental factors, necessitating the maintenance of appropriate temperatures and humidity levels suitable to each type (magnetic, film-based, or digital) to safeguard the security and integrity of audiovisual archives (Deemesh & Ben Sebti, 2022).

As per Mosweu and Rakemane (2021), audiovisual documents within archival institutions in sub-Saharan Africa face challenges related to inadequate environmental controls, staffing issues, technological obsolescence, and preservation weaknesses. Lukileni-Ipinge and Mnjama (2018) highlight that the constant evolution of technology poses a significant hurdle in preserving audiovisual documents, necessitating transitions between different systems. They advocate for storing documents separately under their original file numbers to maintain the intellectual organization of collections consistently. Improper handling and inadequate storage conditions accelerate the deterioration of audiovisual media (Lukileni-Ipinge & Mnjama, 2018). However, advancements in digital technology have brought about improvements in preservation methods but have also introduced new complications (Schüller, 2008). Archives need to adapt to changing standards and formats to ensure the ongoing usability of their collections (National Archives, 2019).

Digitization and archiving of audiovisual media play a vital role in converting audio and visual data into compressed formats, facilitating efficient transmission over communication networks (Lukileni-Ipinge & Mnjama, 2018). Digitization is recognized as a strategic initiative for preserving audiovisual memory within media institutions. According to Gharbi (2013), the digitization efforts at the Bahrain TV archives were

aimed at enabling quick access to archives, consolidating documents into a unified platform stored in various content system files, and establishing a searchable online database accessible to producers, broadcasters, and researchers.

For effective long-term digital preservation and storage, it is essential to supplement all procedures with precise documentation containing relevant specifications. This documentation serves to uphold the authenticity of the primary data and mitigate the risk of data loss (Ethical Principles for Sound and Audiovisual Archives, 2011). Significant measures involve controlling the preservation environment for audiovisual materials, implementing disaster preparedness plans, and ensuring the maintenance of audiovisual equipment (Rakeman & Mosweu, 2021).

When reviewing intellectual production, it becomes clear that audiovisual media with significant informational, cultural, historical and educational value require preservation and access to the public through audiovisual archives. One of the prominent challenges in managing and preserving audiovisual media lies in the rapid obsolescence of information technologies, which emphasizes the importance of taking into account their unique characteristics in long-term maintenance, restoration, processing and preservation procedures. This study stands out from previous research by focusing on identifying the role of audiovisual media in media content within the Ministry of Information in the Sultanate of Oman and leveraging AI to enhance this role.

Study Results and Discussion

The Importance of Audiovisual Content and Its Media Role

Audiovisual content, including films, television programs, and audio recordings, wields substantial influence on the strategies of media institutions and serves as a crucial testament to cultural and social diversity. Within the Radio and Television Libraries of the Ministry of Information in the Sultanate of Oman, various roles can be discerned concerning the creation, development, utilization, supervision, and accessibility of the shared content:

Content creators such as authors, composers and broadcast program makers who are actively involved in the creation of content and the fixation of audiovisual recordings,

Intellectual property owners who have rights to original works and recordings; such as content creators and recorders,

Audiovisual archivists who organize and make accessible multimedia collections, provide archival services and transfer data from one medium to another,

Users of audiovisual content; where audiovisual media are collected and organized in two radio and television libraries that are controlled, organized, managed and made accessible to digitized content through the Ain platform. The audiovisual content constitutes a reference for media professionals and researchers, in addition to its contribution to enlightenment and raising awareness of national issues through exhibitions and other means.

Information specialists at the Ministry of Information emphasize that the Ministry places significant importance on audiovisual media due to their media impact, cultural significance, and as integral components of heritage and collective memory. The audiovisual archives housed at the Ministry of Information serve as a vital repository of national memory, reflecting the comprehensive development journey in Oman. The digital audio library involves over 262,000 audio materials spanning various subjects. Consequently, the audio Archive stands as a crucial resource for understanding the significant transformations that Oman has undergone at both local and international levels. Radio has played a pivotal role in capturing and broadcasting various events and situations in Oman since the 1970s to the present day.

The audio Archive includes media materials crucial for the sustainability and effectiveness of media institutions like radio and television in executing their tasks seamlessly. At the Ministry of Information, information specialists regard the audio library as a central hub for radio operations, facilitating program management for all recorded materials that typically air during broadcast hours. On the other hand, the television library is recognized as a national Archive housing documentary materials and visual recordings capturing cultural, political, and social activities. Leveraging the management and archiving of audiovisual media, the Ministry of Information enhances the media output in terms of content and substance across radio, television, news programs, and drama productions to fulfill the Ministry's main objectives. These efforts aim to strengthen the spirit of citizenship among the public and showcase Omani achievements effectively.

When queried about the significance of audiovisual content, the majority of users (86.5%) acknowledged the social and cultural worth of audiovisual media, closely followed by aesthetic value (63.5%). Only a few respondents (3%) mentioned other values such as political and humanitarian significance (Figure 1). These findings align with Ongena et al.'s study (2013), which highlights that the rapid advancement of radio and television in recent years has imbued audiovisual content with historical and cultural importance. UNESCO (2016) further point out that audiovisual archives serve as invaluable repositories of knowledge, summarizing the cultural, social, and linguistic diversity inherent within societies.

Emphasizing the significance of audio content, information specialists at the Ministry of Information's audio library emphasize the wealth of audio materials serving as references across various realms: social, economic, political, cultural, and beyond. Notably, the Ain platform (Ministry of Information, 2024) has emerged to align with evolving archiving trends by converting a selection of library materials into digital content tailored for broadcast on the platform. These materials undergo technical processing, including editing through montage, color correction, image size adjustments, and other necessary technical enhancements. In doing so, the platform encapsulates a fragment of Omani media memory. It's important to note that the transition of archival content to the platform is an ongoing endeavor that demands time due to the substantial volume of materials involved.

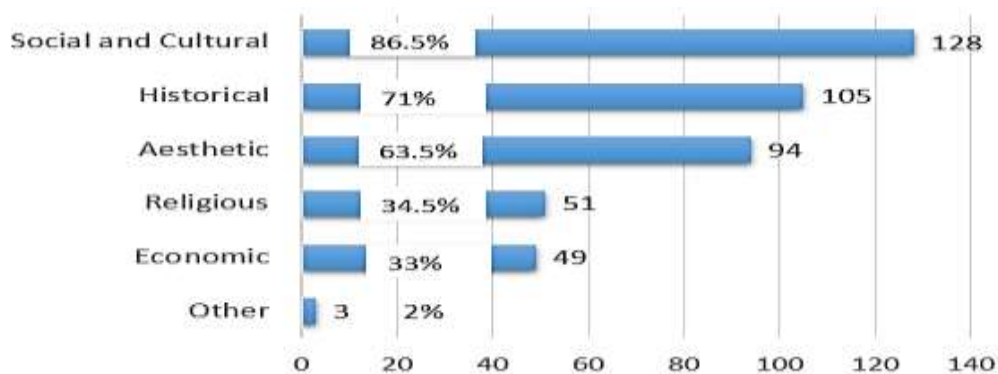


Figure (1). The Value of Audiovisual Content from The Respondents' Point of View

The data presented in Figure (2) reveals that 41.2% of respondents perceive the responsiveness of audiovisual content in aiding them with media tasks as ranging from sufficient to very sufficient. Conversely, 18.3% express that this responsiveness falls between weak and very weak. They define the value of audiovisual content for both themselves and their media institution in the following ways:

It provides them and the institution with pertinent information or knowledge on specific topics they are preparing.

Audiovisual media serve as a crucial resource for media professionals, offering vital support when there is an urgent need for information, illustrations, images, or film material to strengthen their creative endeavors or contributions to ongoing projects.

Audiovisual content assists directors, filmmakers, and other media professionals in crafting exceptional works. Within this framework, the strength of an institution's archive and the breadth and depth of its audiovisual content play a pivotal role in setting one media institution apart from another

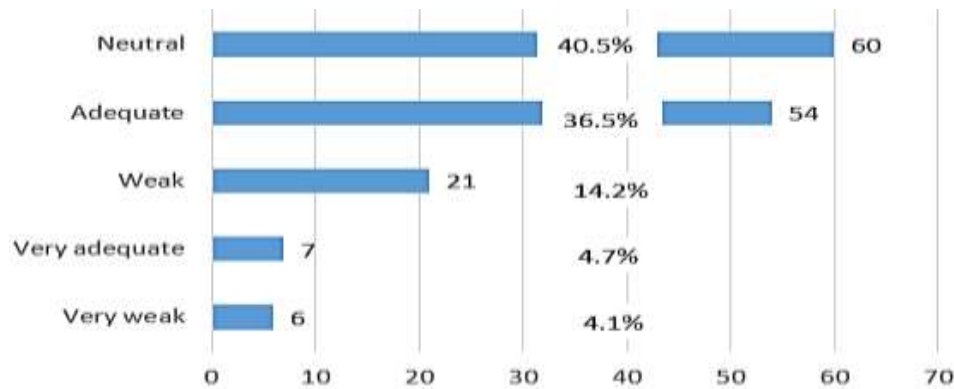


Figure (2). Degree Of Response of Audiovisual Content to Perform Media Tasks

The data outlined in Figure (3) reveals that 68.9% of respondents perceive the Ain platform as significantly contributing to facilitating access to audiovisual media content, rating its impact as good to very good. Conversely, 13.5% of respondents rated the platform's contribution as ranging from weak to very weak. Furthermore, within the Sultanate of Oman, there are governmental initiatives and endeavors focused on the preservation and archiving of audio and visual content. The Documents and Archives Authority has formulated plans and projects in this domain. Over the years, the Ministry of Information has been actively engaged in transitioning its audio and visual archive into a digital repository to align with advancements in archiving practices. Consequently, the necessity arose for a digital archiving system capable of accommodating a vast array of materials within the radio and television technical library, a need that is met through the Ain platform.

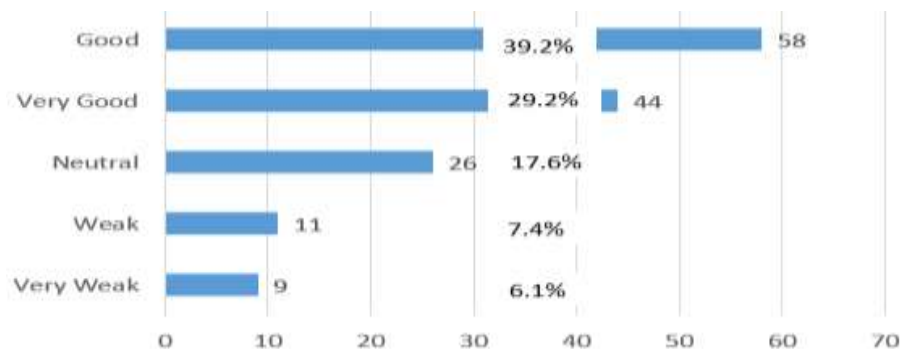


Figure (3). The Contribution of The Ain Platform in Facilitating Access to Some of The Contents of The Audiovisual Library

In Figure 4, it is indicated that 21.6% of respondents consider the materials on the Ain platform for documenting and conserving audiovisual cultural heritage to be sufficient or very sufficient. Contrarywise, 42.6% of respondents believe that the available materials on the platform are insufficient or very insufficient.

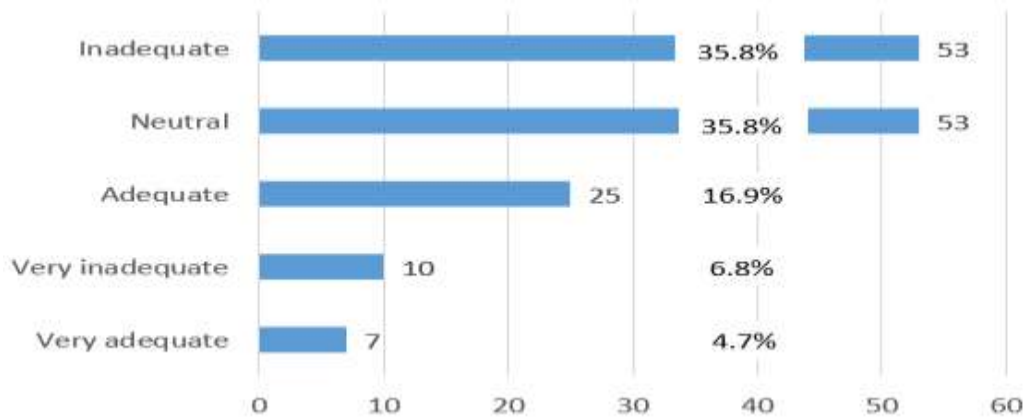


Figure (4). Evaluation of the materials available on the Ain platform for documenting and preserving audio-visual content

Forms of audiovisual media and the beneficiary categories

The study revealed a diverse range of beneficiaries of media content, including media professionals, program producers, directors, filmmakers, and other media enthusiasts striving to create exceptional works. Among the most utilized forms of audiovisual content by respondents at the Omani Ministry of Information are radio and television programs and episodes, with 50% of respondents utilizing them. Photographs follow closely behind, being used by 16.9% of the respondents (Figure 5).

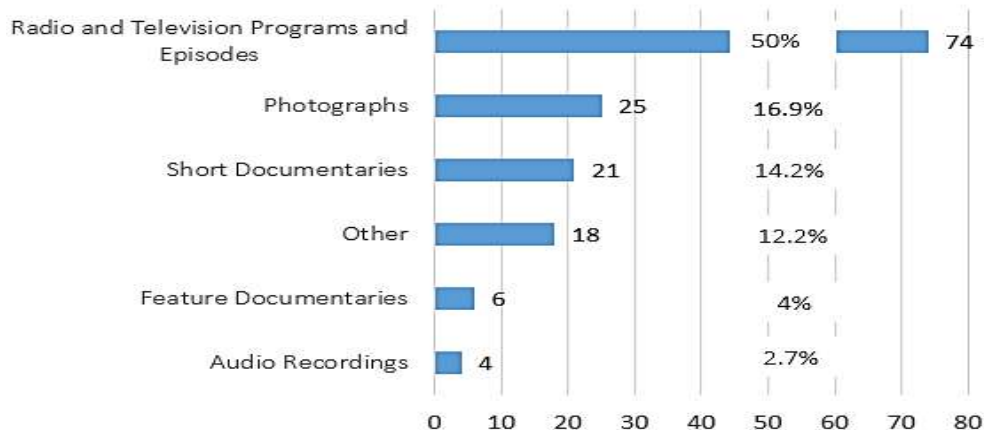


Figure (5). Forms Of Audiovisual Content Used by Respondents in The Ministry of Information

Challenges Impacting the Role of Audiovisual Media

The management and preservation of audiovisual media encounter numerous obstacles. According to table 2, within the Ministry of Information in Oman, approximately 46.6% of respondents consider the insufficiency of budgets to support activities related to preserving audiovisual media as one of the most critical challenges. Additionally, 35.8% of respondents highlight the lack of expertise in preserving these materials as another significant difficulty.

Table (2) This finding aligns with Al-Suwaifi's study (2020), which emphasizes that audiovisual archives require specialized equipment for information retrieval, catering to both visual and auditory senses for watching and listening purposes. This aligns with findings from Oussama's study (2021) which reaffirmed that audiovisual documents encounter various challenges concerning their sustainability, preservation conditions, processing, and accessibility. A notable 10.6% of respondents express concerns about the absence of a robust strategy to efficiently safeguard, manage, organize, and extract valuable information

from audiovisual media. Moreover, specialists encounter obstacles like the quick obsolescence of storage mediums due to the passage of time and technological advancements that continually introduce newer products.

Difficulties facing the management and preservation of audio-visual content

Difficulties	N.	%
There are insufficient budgets to support activities related to the preservation of audiovisual media	69	46.6%
There is no strategy for the protection of audiovisual media	16	10.8%
There is a lack of expertise related to the preservation of audiovisual media	53	35.8%
Other difficulties	10	6.8%
Total	148	100%

Regarding the challenges and obstacles hindering the digitization of audiovisual content within the Ministry of Information in Oman, Table (3) illustrates a range of issues. These include the complexity of technical problems related to electronic archiving and the inadequate number of personnel required for converting audiovisual materials into digital formats, with a rate of 53.4%. Following this, the lack of expertise among those overseeing the archive is identified as a significant challenge by 46.6% of respondents, with the substantial volume of media production and accumulation, particularly in television, noted by 43% of respondents. Moreover, interviews highlighted various challenges, such as the absence of specialized professionals in the field of audiovisual archiving, the obsolescence of storage containers due to time and technological advancements facilitating the emergence of new products, and instances of loss of certain works from the television library. These findings align with Belkhiri's study (2011), emphasizing that the transition to working with electronic media in radio and television libraries necessitates preliminary steps involving design, creation, programs, and personnel training.

Table (3). Difficulties Facing the Digitization of Audio-Visual Content at The Ministry of Information

Difficulties	N.	%
Material problems of electronic archiving	79	53.4%
Lack of qualified personnel needed to convert audiovisual materials to digital format	79	53.4%
Lack of experience for those responsible for managing and preserving audiovisual content	69	46.6%
The huge amount of media production and its accumulation, especially in television	64	43%
Lack of indexes and poor efficiency in retrieving materials on demand	61	41.2%
Lack of training programs for those responsible for managing and preserving audiovisual content	59	39.9%
Lack of electronic equipment for digitizing audiovisual content	59	39.9%

Digitization And AI And Their Role in Enhancing the Media Value of Audiovisual Media Content

Digitization and AI play an important role in increasing the effectiveness of the media role of audiovisual content. Table (4) shows users' opinions on the importance of digitizing audiovisual content; they indicate the phrase "protecting documents from damage" as the highest percentage of importance 86.5%, followed by "enabling the beneficiary to quickly access the archive online" at 70.3%, then reducing the time and effort in accessing it at 63.5%. This was confirmed by Oussama's study (2021), which indicated that the shift towards digitalization is one of the strategic projects to preserve this audiovisual memory in various media institutions.

Table (4). The Importance of Digitizing Audiovisual Content

Importance	N.	%
Protecting media from damage	128	86.5%
Enabling the beneficiary to quickly access audiovisual content via the Internet	104	70.3%
Reducing time and effort in accessing audiovisual content	94	63.5%
Facilitates the scientific research process in the field of media and communication, especially for analytical studies based on the analysis of media content	90	60.8%
Simplifying the process of returning to historical sources of previous events and facts that developed for certain reasons	81	54.7%
Conveys the history, past achievements, prominent leaders of the media institution since its establishment	78	52.7%
Identifying changes and developments in the media message	74	50%
Contributing to reveal changes and developments at the level of media institutions' patterns towards important topics and events	68	46%
Defining the media institution, for free, especially if it is available on its website	59	40%
It is considered one of the material evidences that condemn or acquit the media person before the judicial authorities	18	12.2%
Other	3	2%

In recent years, technology providers have introduced innovative technologies to analyze and process big data, such as AI, enabling companies to leverage the value inherent in massive datasets (Mougayar, 2016; Phillipon & Besson, 2020). Consequently, archivists and document management specialists have shown a keen interest in AI due to its pivotal role in managing vast amounts of data effectively. This technology not only aids in enhancing internal processes within institutions but also accelerates implementation timelines and boosts overall productivity. Since 2015, AI has experienced rapid growth within the realm of digital media.

The utilization of AI in document management and archiving can enhance efficiency and accuracy, mitigating human errors and subsequently improving productivity, saving resources, and enhancing service quality. AI represents a significant technological advancement, enabling the streamlining and acceleration of various processes. For instance, AI can expedite and simplify tasks like writing emails, enhancing sales department presentations, and analyzing extensive datasets for research and development purposes (Escalé, 2024).

Upon examining the literature focusing on the impact of AI on enhancing document management processes, several emerging trends highlight how AI can boost audiovisual content and amplify its media influence. These trends can serve as guiding principles for the Ministry of Information in Oman to invest in and optimize the benefits derived from audiovisual content:

AI can facilitate and accelerate the indexing and classification processes of audiovisual content; AI-based systems can provide accurate analysis, classification, and efficient indexing of audiovisual content. In search engines, searching for information often relies on a database of keywords, and if there are relationships between the data, they are manually defined when stored so that these links can be discovered during the search. As for audiovisual content, interpreting the sound or image or assessing its importance or judging it depends on its context. Among the levels of documentation that can be used to analyze the context in audiovisual documents are: the context of expression, the context of recording, the context of transmission, and the context of reading (Oussama, 2021). AI can automate the search and creation of metadata on text or multimedia content, in order to improve its archiving and enhance its discovery; which will enhance the automatic classification of media to be archived, and the enhanced retrieval of information; which will consequently support the management and archiving of audiovisual content as one of the pillars of digital transformation to exploit the information assets of any media institution and increase its search capabilities and access to its content (Escalé, 2024).

AI technology allows for improved accuracy of content searches; AI uses techniques such as machine learning and natural language processing to understand the context of the search and analyze the content, allowing for more accurate and efficient retrieval of content (Gouyet, 2022). AI can extract good homogeneity and extract a large number of media regardless of their type, format or language. It also expands the possibilities of searching for information unlike conventional search engines (Marone et al, 2021). In addition, AI can be used to extract information and analysis from content and provide intelligent analysis to support the decision-making process. Security can also be improved and content confidentiality maintained by applying advanced protection measures, detecting manipulation and detecting breaches.

Generative AI can filter data and assist in searching and finding appropriate content, and accelerate the exchange of information within the media institutions. This will constitute an opportunity to improve audiovisual content archiving services and exploit it through search that no longer relies solely on semantics, but includes contextual data.

Study Recommendations

In light of the study's findings and identifying the media role of audiovisual content, and the challenges of managing and preserving it to maximize its benefit, the study recommends the following to develop and support audiovisual content in the Ministry of Information in Oman:

Work on developing a strategy to promote the archiving and protection of audiovisual content in Omani media institutions, and increase efforts to digitize non-digitized media materials.

Strengthen cooperation between audiovisual archives and the National Records and Archives Authority, especially with regard to adopting national and international standards and requirements related to the management, preservation and availability of audiovisual content.

The necessity of using AI as a tool to support the archiving and investment of audiovisual content and benefit from this technology in processing the huge volume of digital content and facilitating search in it, and enhancing the services provided to media professionals and members of the media institution.

Designing documentary systems in which document specialists in media institutions participate, considering the integration of AI technology; in a way that supports the archiving and availability of audiovisual content in Oman.

Preserving audiovisual content and protecting original media for their media, historical, archival and cultural value, and providing effective search interfaces so that users can easily use them to search and find media materials related to their interests.

Exchanging knowledge and expertise between document specialists in audiovisual archives in Omani media institutions to help develop appropriate methods and tools to fully benefit from the advantages provided by digital data and facilitate the extraction of relevant information.

Training technical personnel well on audiovisual content management and archiving systems and providing them with appropriate courses.

Conclusion

The audiovisual content of the media institution is viewed as a historical record of local or global events. The Ministry of Information in Oman has allocated units for the audio library, the audiovisual library and the Ain platform to document the audiovisual media content and ensure its safety and preservation in a scientific manner and the gradual conversion of audiovisual media from analogue to digital content. As media institutions are one of the important types of institutions, they focus on content management systems; which means maximizing the benefit from audiovisual content. In this regard, AI provides important advantages compared to traditional search engines because it expands the possibilities of searching for information, allows for more efficient processing and use of archived data, develops operations and activities in the media institution and improves decision-making. The Ministry of Information in Oman has taken important steps towards documenting audiovisual content, to increase the effectiveness of audiovisual content in supporting the professional activities of the Ministry of Information in Oman and achieving its goals, it must increase efforts to digitize non-digitized media materials and enhance search, processing and access capabilities using AI technologies.

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