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Enterprise content management in cultural heritage institutions: A study of Sharjah landscape, United Arab Emirates

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ABSTRACT

This study examines the landscape of digital content management within heritage institutions in Sharjah, United Arab Emirates. It aims to evaluate the state, characteristics, and roles of these processes in preserving and promoting cultural heritage in the digital sphere. Utilizing a descriptive analytical approach, the research employs a checklist as the primary data collection instrument to investigate existing policies, plans, systems, and projects. Findings highlight the absence of formalized content management strategies in most institutions, which rely on unwritten, tacit policies. This lack of structured frameworks adversely impacts communication, operational performance, service delivery, and the long-term sustainability of their work. The study underscores the need for institutions to develop clear, written strategies and policies for digital content management and to conduct regular evaluations using metrics such as stakeholder feedback, statistics, and surveys. As the first study of its kind in the UAE, it provides a foundational understanding of digital content management practices in heritage institutions and offers actionable recommendations for policy and strategy development. The findings are expected to shape future practices, fostering improved digital preservation and accessibility of cultural heritage.

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Introduction

Current developments in information technology have revolutionized the way specialists work and deal with heritage and approach its content management mechanisms. Therefore, heritage institutions have embraced its tools resulting in a direct impact on their operations. Since cultural heritage is a non-renewable resource, managing it in conformity with the guidelines, tools and practices provided and facilitated by information technologies benefits societies economically through sustainable development and job creation, and socioculturally through the enhancement of national identity and cultural distinctive characteristics. Liu (2022) believes that a combination of numerous digital technologies is promising in its ability to ensure the protection, dissemination and exchange of intangible cultural heritage. Information technology is thus of paramount importance to ensure the preservation and conservation of heritage content and to ease access of its institutions to the knowledge society.

The choice of Sharjah for this study is due to it being largely known as the cultural capital of the United Arab Emirates (UAE). This attribute is gained through its dedication to preserving cultural heritage as demonstrated by the number of museums, cultural festivals, and hosted local and international cultural heritage institutions. Sharjah is a host to many international institutions working in the field of cultural heritage. The Centre for International Cultural Heritage Organizations is home to six international organizations namely: International Centre for the Study of the Preservation and Restoration of Cultural Property (ICCROM) Center - Sharjah, the Middle East and North Africa Regional Centre of International Organization of Folk Art (IOV), the International Council of Organizations of Folklore Festivals and Folk Arts (CIOFF), Olymias Giochi Tradizionali Della Sardegna (Olymias of Traditional Games in Sardinia-MENA Office), the Chinese Centre for Cultural Exchange (ZJSU University), National Institute of Archeology and Heritage in Rabat (MENA Office).

These organizations work to preserve and protect tangible and intangible cultural heritage and to make significant contributions in the field of care and protection of heritage from loss and extinction. Their presence makes Sharjah an incubator for world heritage protection and preservation. This does not come as a surprise given Sharjah's rich past. Recent archaeological discoveries present evidence that the town of Mleiha in Sharjah was at the heart of the ancient civilization of the region as far back as 3000 BCE (Jasim et al., 2016). With cities on the coasts of the Gulf of Oman, the emirate later attracted the attention of the Portuguese, Dutch and English in their quest to control trade routes with the Far East (di Cardi, 1971). Cultural goods inherited from the past need conservation efforts of which content management is the lifeblood.

This study investigates the state of digital content management in cultural heritage institutions in Sharjah (UAE). It particularly aims to highlight content management strategies adopted by cultural heritage institutions in the Emirate. It will also try to determine the characteristics of the manpower working in digital content management within those institutions. Furthermore, it will attempt to pinpoint digital content management challenges in cultural heritage institutions and suggest ways to mitigate them.

In doing so we aim to dissect the digital content management landscape in the heritage institutions including determining its scope, characteristics, and the roles it plays in showcasing the presence of heritage

content in the digital world. As well as present recommendations on necessary studies, policies, plans, programs, and projects. To meet these objectives, the study will attempt to answer the following research question: What is the state of digital content management in cultural heritage institutions in Sharjah and what are ways to develop it? The following specific questions stem from this main question: Are there any strategies for digital preservation in cultural heritage institutions in Sharjah? What are the characteristics of manpower working in digital content management in cultural heritage institutions in Sharjah? What are the challenges facing digital content management in Sharjah and how can they be mitigated?

The study investigated Digital Content Management in institutions mandated with preserving and disseminating cultural heritage in the emirate of Sharjah (UAE). The seven institutions are indicated with the following symbols: I1, I2, I3, I4, I5, I6, & I7. The investigation adopts the descriptive analytical approach to determine the state of digital content management in heritage institutions under investigation. In addition, a checklist was used to collect administrative data and insights on institutional practices.

The significance of the study stems from the fact that it is one of the few studies in the UAE and Arab context, to our knowledge, that investigate enterprise digital content management in the field of heritage, and its role in linking these institutions to the knowledge society, sustaining their digital content, and introducing local cultural heritage on a large scale locally, regionally and globally. In addition to revealing existing obstacles and difficulties in the digital content management process, identifying areas of strength and weakness, discovering and pinpointing the mechanisms to address those shortcomings, and arriving at serious indicators to help develop the content management strategies at the institutions under study.

Through a critical review of previous studies, the researcher observed a lack of interest on the part of Arab researchers, whether at the technical or cognitive level to fill that knowledge gap in Arab research output on the subject, except for very few studies, which addressed some of its aspects. The researcher also found that there is a large group of researchers who used the term digital content to indicate the process of digitization, reducing the definition of digital content and its related processes to the concept of digitization and its associated processes. Hence, the researcher believes it is necessary to disambiguate both terms. Digitization is only a process within a series of processes that aim to manage digital content in institutions. It is, thus, only a small part of institutional digital content management. As for the rest of the studies, they dealt with digital content and its management partially, as they dealt with it in terms of web content or the electronic portal and not at the level of the institution as a whole as an integrated institutional system.

The researcher identified an abundance of studies that dealt with digital content creation, digital preservation, and building and managing institutional digital repositories, anda scarcity of studies that dealt with aspects of Enterprise Digital Content Management. The review of previous studies also showed the need for a comprehensive reference model for implementing content management in the institutions. This study is distinguished from previous studies in addressing the reality of Enterprise Digital Content Management, especially in the field of heritage, and is not merely an evaluation of institutional websites or portals, as in most previous studies.

On the other hand, the current study agrees with other studies on the importance

of building and managing digital content in institutions and information centres, and the necessity of adopting an effective and flexible system for managing digital content through plans and strategies that ensure the sustainability of this content by managing it efficiently to achieve the desired benefit from it.

It is also clear from the critical review of previous studies that there is no clear indication of the benefits of Enterprise Content Management in institutions in general and heritage institutions in particular. Therefore, these benefits shall be confirmed and verified in an ECM environment, especially in the field of heritage, which we aim to monitor and verify in this study. Therefore, these results lay a foundation for further research and study on enterprise content management topics within heritage institutions, such as content management best practices, information quality, governance and organizational culture, and others.

Method

This research is entrenched in descriptive analytical approaches enabling the researchers to gather in-depth information on the phenomena under investigation. Since the main objective of this research is to dissect the ECM landscape in heritage preservation institutions in the Emirate of Sharjah, a purposive sampling approach was adopted. The authors invited all institutions they were aware of were involved in cultural heritage preservation within the Emirate to participate in the study. In this sampling approach, cases meeting certain characteristics that allow the study of the problem are sampled (Emmel, 2013).

Data were collected using a checklist following initial preliminary interviews that revealed a need for a tool to solicit structured data. The interviews and checklist were conducted and drafted in Arabic, the working language of the institutions. The interview questions covered success factors of content management, success indicators of content management initiatives, hurdles facing successful implementation of content management projects, necessary professional development for successful content management projects, and tools used to measure the usage of digital content in institutions.

The checklist was deemed appropriate to investigate the state of content management systems at Sharjah's heritage institutions. It included a total of 42 inquiry items structured into four sections. Section one solicited information on the content management system and its technical environment. Section two covered institutional awareness of the concept of content management and its importance. Section three addressed the system management operations such as organization, display, access, preservation, maintenance and security requirements. The last section inquired about the content management operations success indicators.

Results and Discussion

There is an evident scarcity of academic studies related to the subject under study in the Arab region. The field of Enterprise Content Management (ECM) is a relatively new sector andhas not received much research and investigation attention (Tyrväinen, et al., 2006; Alalwan & Weistroffer, 2012; Grahlmann et al., 2012; Katuu, 2012). To this is added a lack of consensus on its associated terminology (Grahlmann et al., 2012).

Based on a critical review of previous studies, it became clear that ECM represents a comprehensive and integrated concept at the institutional level, as it covers all activities in the content' lifecycle (e.g., capture, storage, retention), all types of semi- and unstructured information (e.g.,

reports, emails, images), along with a variety of technologies (such as hardware, software, and standards) and across all units within an institution. (Svard, 2013)

Researchers also concluded several things: First, there is no clear and specific mention of how institutions benefit from using a content management system (CMS) as well as the factors that drive these benefits. Second, researchers failed to identify the motives that are the main drivers for ECMS implementation. The third issue is the lack of a benefits framework to enhance awareness and knowledge of the benefits of ECMS. In addition, the relationship between motivation and achieving benefits is insufficient.

A review of previous studies in the field of content management reveals that despite the increasing interest in applying content management at the institutional level and the booming market for content management systems, it is still considered one of the emerging research fields and that it has not received sufficient research attention. Although ECMS was introduced nearly two decades ago, there is a clear deficiency in implementation at the institutional level (Rosman & Aziz, 2018).

Previous research indicates that content management practices using appropriate information technology can significantly impact institutional performance in terms of productivity, quality assurance, profitability, and customer satisfaction.

The reviewed studies were hence classified according to the Extended Framework for ECM Research of Tyrväinen, et al., 2006 and Brocke et al. (2011) (see Figure 1), to accurately categorize the studies, three different scores were used: Major (X) 3 scores, Minor (●) 2 scores, and Marginal (•) 1 score. The following table shows the result of this classification:

Table 1. Classification of ECM studies reviewed

Study Data	Enterprise	Drivers and Benefits	Content	Technology	Processes	Studies	
						Approach	Tools
Al-Sobhi, 2013	●		X	•	•	Case study	Interviews
Al-Naqeeb, 2013	●		X	•	●	Field study	Interviews
Al-Jawhari, 2018			X	•	•	Analytical Descriptive	Questionnaire + Checklist
Saeed, 2013	X	•	●	•		Survey and Analytical	Sources and References
Alawi, 2017		•	●	X	•	Analytical Descriptive	Sources and References
Al-Rabaghi, 2016		●	X	•		Descriptive	Interviews
Al-Sayed, 2013	X	•	●	•	●	Analytical Descriptive	Checklist
Abdel-Aal, 2015		•	X	•	●	Survey, comparative, and experimental	Interview and Checklist
Abdel Halim, 2018	X	•	●	•	●	Field survey	Interview and Checklist
Steele, 2012	X	•	●	●	●	Exploratory	Interview and questionnaire
Allotey, 2011	●	X		•	●	Exploratory	Sources and References
Jaakonmaki, 2018	X	•	●	•	●	Descriptive	Sources and References

Study Data	Enterprise	Drivers and Benefits	Content	Technology	Processes	Studies	
						Approach	Tools
Arshad, 2014	●		•	X	•	Case study	Interviews
Salamntu, 2016	●	X	●	•	•	Case study	Interviews
Munkvold, 2006	X	X	X	●	●	Case study	
Vom Brocke, 2010	X	●	•			Conceptual study	
Grahlmann, 2010	X	•	•		●	Case study	
Usman, 2009	X	●	●	●		Critical review	
Alalwan, 2011	X	•	●		●	Dialectical study	
Sprehe, 2005	•	X	•			Case study	
Paivarinta, 2005	●	●	X	•	●	Conceptual study	
Smith, 2003	●		X	•	●	Discussion group	
Kunstova, 2010		●	X	•		Survey study	
Wildius, 2011	●	•	X	•	●	Survey study	
Total studies	19	19	23	20	18	Major (X) 3 scores Minor (●) 2 scores Marginal (•) 1 score.	
Total (weight)	47	32	52	27	31		

According to Table 1 above, the studies can be classified into five main sectors that represent the general framework of previous studies in the field of content management. The number of studies that mainly dealt with the enterprise's perspective reached (10) studies, the number of studies that mainly dealt with the drivers and benefits was (04) studies, studies that mainly dealt with content were (10) studies and studies that mainly dealt with technology were (02) studies and finally no studies dealt mainly with processes. It is, thus, clear that both the enterprise and content perspectives are dealt with more than the other areas, followed by a focus on the drivers and benefits. Both the processes and technology perspectives have received less research attention.

With regards to research methods, the case study is predominant with (06) studies, followed by both the descriptive analytics and survey methods with (05) studies, and by both exploratory and conceptual studies with (02) studies. The other methods applied include dialectical methods, focus groups, the experimental method, the comparative method, and the field study method with (1) study each. Interviews came at the top of the data collection tools used with (08) studies, followed by the checklist, sources, and references with (04) studies. The questionnaire was the least used tool.

As per the aforementioned, the researcher found a scarcity of quantitative research that addressed ECMS, so there is an essential need to evaluate the benefits of Enterprise Content Management and measure them experimentally and quantitatively. There is also a scarcity of studies on the strategic dimension of using ECM for decision-making, as no published research has addressed the evaluation of the impact of ECM on decision support in the organizational context.

Definitions of terms

Digital content

Abdel Halim (2018) defines content as: "All the ideas, topics, facts, and data contained in a book or written work," and

also defined as "information and documents uploaded to electronic media and intended for use to be read automatically." Digital content specifically is defined as "a discrete unit of information in digital form that is treated as a logical entity with properties and associated metadata. Digitized and born-digital items may both be considered as digital content." (Library of Congress, n.d.).

Content management

Hackos (2001) defines content management as "the process of organizing, classifying, and structuring information resources so that they can be stored, retrieved, disseminated, and reused in multiple ways." White (2005) defines it as the method in which content is dealt with in the general content management life cycle; starting from the design stage until the publishing stage. Boiko (2005: 46) believes that content management is a dynamic combination of different processes, and Boiko (2001) defines content management as a process through which the match is determined between what you have and what is requested; that is, what the institution has and what its specific audience or customers want. More specifically, a content management system is responsible for collecting, managing, and disseminating pieces of information known as "content components" (Boiko, 2005: 86). Ahmed (2023) further states that "digital content management is the process of keeping track of all digital material, like music, video, text, graphics, links to real resources, and so on, so that it can be added by many people and maintained at a high level."

Enterprise content management

Due to its novelty, the concept of Enterprise Content Management is ambiguous, and its definitions vary. This is confirmed by Grahlmann, (2011), Grahlmann et al. (2011) and Smith and McKeen (2003: 648). The efforts of AIIM (Association for Information and Image Management) are among the most prominent attempts that aimed to develop a comprehensive definition for Enterprise Content Management (ECM), as it covers both technology and organizational aspects. Enterprise Content Management (ECM) refers to the strategies, methods and tools used to capture, manage, store, archive and deliver content and documents related to organizational processes. Enterprise Content Management (ECM) tools and strategies allow the management of an institution's unstructured information, wherever that information resides" (AIIM website). Paivarinta and Munkvold (2005) succinctly describe it as an integrated approach to information management. Ahmed (2023) corroborates the AIIM definition as he believes ECM enables enterprises to manage business information and facilitate its sharing within and outside the institution with its stakeholders.

Content management systems

A content management system (CMS) is a software application or set of programs that is used to capture and manage digital content. The market abounds with content management systems, whether free (open source) or commercial, designed for personal or institutional use, such as SharePoint, Documentum, Alfresco, M-Files, Joomla, Drupal, and WordPress (Chaterera-Zambuko, 2023). Abdel-Aal (2015) indicates that the concept of digital content management systems is one of the modern concepts that is still searching for a specific and unified definition and indicates that some define digital content management systems as software systems used to automate content management processes.

Content management requirements

Content Management Requirements are divided into functional requirements and non-functional requirements. Functional requirements refer to the processes of archiving, displaying, etc., while non-functional requirements refer to some elements such as costs, the skills and experience of the content management team, and others. The functional requirements for content management can also be divided into four main categories according to (Erturk, 2019) as follows:

- Regulatory requirements: This category consists of metadata, content, and other sections, which mainly deal with how content and associated metadata are organized.
- Display requirements: This category deals with form and appearance.
- Access requirements: Access requirements include internal and external accessibility and security requirements.
- Preservation requirements: Preservation requirements take into account issues of storage, backup and long-term preservation of content and metadata.

Cultural heritage and digital technologies

Cultural heritage is defined by UNESCO as "our legacy from the past, what we live with today, and what we pass on to future generations." It was described by the European Council as a strategic resource for a sustainable Europe, it stated that: "Cultural heritage consists of resources inherited from the past in all forms and aspects – tangible, intangible, and digital (digital and digitalized), including monuments, sites, landscapes, skills, practices, knowledge and expressions of human creativity, as well as collections preserved and managed by public and private bodies such as: museums, libraries and archives" (Vila, 2018).

Digital preservation of cultural heritage resources

Digital preservation is the management of digital information through a set of processes and activities that ensure continuous access to information and all types of records existing in digital form, whether relating to scientific, cultural or other heritage, for the purpose of long-term preservation with tools for retrieval and interpretation (UKOLN, 2011).

Benefits of applying digital technologies in the heritage field

The deployment of digital technologies in the heritage field has made it possible to obtain many advantages and benefits (Fund, 2012):

- Digitizing heritage assets and making them available.
- Collecting data about customs, traditions, activities, buildings, sites, and other legacies.
- Promoting awareness and creating expertise in the field of heritage.

Content management system overview and operating requirements

CMS in use.

Table (2) shows the content management systems used in the institutions and addresses some of their main features, such as "the name of the current system, the date of release, the issuing authority, the date of the last update, the current system life cycle in each institution, the classification of the content management system used, the name of the previous system, if any, and the reasons for changing it". Three institutions (I1, I7,

Table 2. Features of content management systems

No.	CMS Used	Institution Name						
		I1	I2	I3	I4	I5	I6	I7
1	Current System Name	Wordpress	SharePoint	XSI – Symphony-SBA	ADLIB - archiving system	4.0 ASP.Net Pro Hosting + Local content management system	Cultural Heritage Log	WordPress
2	4. (A) Issue Date:	01/11/ 2020	01/01/ 2016			01/01/ 2014	01/01/ 2020	01/01/ 2015
3	Issuing agency		Microsoft		Axiell			
4	Last Updated Date	01/01/ 2021		01/01/ 2020	01/01/ 2019	16/03/2021	01/01/ 2021	25/03/ 2021
5	Current System Life Cycle	5 years	3 years	4-10 years.	14 years	7 years		6 years
6	Classification of the Content Management System Used	Open Source	Commercial	Commercial - Local	Commercial	Local	Local	Open Source
7	Name of the previous system (if any)		SharePoint on premise			N/A Content is published on HTML pages	Paper-based System	
8	Reasons for changing the previous system (if any)		Ease of development and support				The government's direction for digital development	

and I2) relied on two of the most popular commercial systems, namely SharePoint and WordPress. The rest of the institutions (I3, I4, and I5) adopted locally developed systems.

Table 3 shows that operating systems, web servers and programming languages vary according to the system used in the institution with Windows, Apache and PHP respectively being dominant.

Requirements for installing and operating the current system:

Table 3. Requirements for installing and operating the system

No.	Requirements for Installing and Operating the System:	I1	I2	I3	I4	I5	I6	I7
1	Operating system	Windows	All Systems	Windows	Windows	Windows	Windows	All Systems
2	Web server	Apache		IIS		Apache	No need	Apache
3	Programming Language	PHP	Php	(Java, PHP)		HTML, C#, JavaScript	PowerShell, SharePoint Framework	PHP

Organizational components of content management processes

Subordination of the content management department

Table 4 shows the frequencies and percentages of the departments which oversee content management operations in the institutions under study. It indicates that content management in the organizational structure of three of the institutions (I1, I3, I5) is affiliated with the Information Technology Department, with a percentage of 42.86%. Content management in two of the institutions I6 and I2 is integrated into the operational departments of the institution representing 28.57%. It also shows that the lowest frequency was for the two categories (top management), as in I4, and (independent unit), as in I7, where the frequency value was 1 and with a percentage of 14.29%.

Table 4. Content management department subordination

Who oversees the Content Management Department	Institution							Frequency	%
	I1	I2	I3	I4	I5	I6	I7		
IT Department	√		√		√			3	42.86%
Integrated into the Institution's Operational Departments		√				√		2	28.57%
Top Management				√				1	14.29%
Independent Unit							√	1	14.29%
Total								7	100%

While the integration of content management in different institutional units may work, optimal results and service delivery will be achieved through an independent content management department due to its unique nature (Singh et al., 2023).

System administration

Table 5 shows the weighted averages and relative importance of the statements related to system administration.

Table 5. Content system administration in the institutions under study

No.	Statement	Applicable		Not Applicable		Weighted Average	Relative Importance	Fulfillment Degree	Order
		Freq	%	Freq	%				
1	There is a third party responsible for supporting and developing the system	6	85.71	1	14.29	1.86	92.86	Fulfilled	2
2	The system allows the creation of user groups and defining their roles and powers	7	100	0	0.00	2.00	100	Fulfilled	1
3	Approved instruction manuals are available for using the system	6	85.71	1	14.29	1.86	92.86	Fulfilled	2
4	The system is flexible and does not require technical expertise to install and operate	6	85.71	1	14.29	1.86	92.86	Fulfilled	2

No.	Statement	Applicable		Not Applicable		Weighted Average	Relative Importance	Fulfillment Degree	Order
		Freq	%	Freq	%				
5	The system supports remote access for users with different roles	7	100	0	0.00	2.00	100	Fulfilled	1
6	The system makes it possible to track users' activities	7	100	0	0.00	2.00	100	Fulfilled	1
7	There is a maximum number of objects/collections that the system can accommodate	4	57.14	3	42.86	1.57	78.57	Fulfilled	4
8	The system allows reviewing all operations performed by system users	7	100	0	0.00	2.00	100	Fulfilled	1
9	The system supports electronic signature of documents	2	28.57	5	71.43	1.29	64.29	Unfulfilled	6
10	All system users are assigned a Dashboard according to their powers	7	100	0	0.00	2.00	100	Fulfilled	1
11	The system supports an Application Programming Interface (API) that allows interaction between the system and other software	6	85.71	1	14.29	1.86	92.86	Fulfilled	2
12	The system provides or supports standards-based development tools (such as XML, CSS, DHTML, XSLT, and other open standards)	6	85.71	1	14.29	1.86	92.86	Fulfilled	2
13	The system supports working in the web environment	7	100	0	0.00	2.00	100	Fulfilled	1
14	The system supports standard messaging protocols (such as SMTP, and MIME).	6	85.71	1	14.29	1.86	92.86	Fulfilled	2
15	The system supports working in the smartphone environment	6	85.71	1	14.29	1.86	92.86	Fulfilled	2
16	The system provides automatic backup and file recovery functions	7	100	0	0.00	2.00	100	Fulfilled	1
17	The system allows the system administrator to schedule the backup process	7	100	0	0.00	2.00	100	Fulfilled	1
18	The system supports working without a network connection and automatically synchronizing documents when the connection is restored	3	42.86	4	57.14	1.43	71.43	Unfulfilled	5
19	The system provides a workflow mechanism	5	71.43	2	28.57	1.71	85.71	Fulfilled	3
20	The system supports encryption of files and objects	6	85.71	1	14.29	1.86	92.86	Fulfilled	2

No.	Statement	Applicable		Not Applicable		Weighted Average	Relative Importance	Fulfillment Degree	Order
		Freq	%	Freq	%				
21	The existing system was evaluated and tested prior to being approved by the institution	6	85.71	1	14.29	1.86	92.86	Fulfilled	2
22	The existing system is constantly updated and upgradeable	7	100	0	0.00	2.00	100	Fulfilled	1
23	The system has the ability to absorb and integrate with external programs	6	85.71	1	14.29	1.86	92.86	Fulfilled	2
24	The system has the ability to automatically synchronize database and file system content	5	71.43	2	28.57	1.71	85.71	Fulfilled	3
25	The existing program is used in several local, Arab and international institutions to manage their content	7	100	0	0.00	2.00	100	Fulfilled	1
26	The vendor provides general and customized training (such as security and control, backup, and system administration).	7	100	0	0.00	2.00	100	Fulfilled	1
27	The system has tools for monitoring, evaluation and follow-up	5	71.43	2	28.57	1.71	85.71	Fulfilled	3
Total						1.85	92.59	Fulfilled	

When we extrapolate the results of Table (5), we find that the total relative importance is 92.59, the weighted average is 1.85, and the degree of fulfillment in general was "fulfilled". At the level of the said statements, we note the following: Statements No. 2, 5, 6, 8, 10, 13, 16, 17, 22, 25, and 26 which read "the system allows the creation of user groups and defining their roles and powers; the system supports remote access for users with different roles; the system makes it possible to track users' activities; the system allows reviewing all operations performed by system users; all system users are assigned a Dashboard according to their powers; the system provides automatic backup and file recovery functions; the system allows the system administrator to schedule the backup process; the existing system is constantly updated and upgradeable; the existing program is used in several local, Arab and international institutions to manage their content; and the vendor provides general and customized training (such as security and control, backup, and system administration)" ranked first.

The relative importance thereof reached 100% and the degree of fulfillment was "fulfilled". Statements No. 1, 3, 4, 11, 12, 14, 15, 20, 21, and 23 which read: "there is a third party responsible for supporting and developing the system; approved instruction manuals are available for using the system; the system is flexible and does not require technical expertise to install and operate; the system supports an Application Programming Interface (API) that allows interaction between the system and other software; the system provides or supports standards-based development tools (such as

XML, CSS, DHTML, XSLT, and other open standards), the system supports standard messaging protocols (such as SMTP, MIME); the system supports working in the smartphone environment; the system supports encryption of files and objects; the existing system was evaluated and tested prior to being approved by the institution; the system has the ability to absorb and integrate with external programs" ranked second.

The relative importance thereof reached 92.86% and the degree of fulfillment was "fulfilled". Statements No. 19, 24, and 27 which read: "the system provides a workflow mechanism; the system has the ability to automatically synchronize database and file system content; the system has tools for monitoring, evaluation and follow-up" ranked third. The relative importance thereof reached 85.71% and the degree of fulfillment was "fulfilled". Statement No. 7 which reads: "there is a maximum number of objects/collections that the system can accommodate" ranked fourth. The relative importance thereof reached 78.57% and the degree of fulfillment was "fulfilled". Statement No. 18 which reads: "the system supports working without a network connection and automatically synchronizing documents when the connection is restored" ranked fifth. The relative importance thereof reached 71.43% and the degree of fulfillment was "unfulfilled"; Statement No. 9 which reads: "system supports electronic signature of documents" ranked last. The relative importance thereof reached only 64.29% and the degree of fulfillment was therefore "unfulfilled".

The researcher noted that most of the systems used are local systems designed to meet the immediate needs and requirements of institutions without considering future considerations (Momoti, 2023). Furthermore, the above results indicate that some of the systems used do not meet the minimum specifications and standards required for corporate content management and that they need to be re-evaluated, and a decision is taken whether to develop, improve or change them to raise the efficiency of the content management processes and align with the strategic objectives of the institution. We found that some systems do not have a workflow mechanism, nor do they have the ability to automatically synchronize the database and file system content, nor do they have tools for monitoring, evaluation, and follow-up. Some do not support working without a network connection and automatically synchronizing documents when the connection is restored, and others do not support electronic signatures of documents. This lack of standards and best practices adoption creates a problem of cooperation with similar institutions as noted by Cleland (2007). It indicated the need to improve the practices and tools used by the institution to enable achieving the desired goals of managing the institution's digital assets while being compatible with other institutions (Arshad et al., 2022).

Responsibility for content management

Table 6 shows the weighted averages and relative importance of the statements on the responsibility for content management.

It is shown in Table 6 that the total relative importance is 85.71%, the weighted average is 1.71, and the degree of fulfillment in general is "fulfilled". At the level of the statements under investigation, we note the following: Statement No. 1 which reads: "Content Management is done centrally within the Institution" ranked first. The relative importance thereof reached 100%, and the degree of fulfillment was "fulfilled". Statements No. 2 and 3 which read: "There is a sufficient number of employees to manage the content in the institution; There is a determination and distribution

Table 6. Responsibility for the content management in the institutions under study

No.	Statement	Applicable		Not Applicable		Weighted Average	Relative Importance	Fulfillment Degree	Order
		Freq	%	Freq	%				
1	Content Management is Done Centrally within the Institution	6	85.71	1	14.29	1.86	92.86	Fulfilled	1
2	There is a sufficient number of employees to manage the content in the institution	5	71.43	2	28.57	1.71	85.71	Fulfilled	2
3	There is a determination and distribution of the responsibilities and roles of those working on content management in the job description	5	71.43	2	28.57	1.71	85.71	Fulfilled	2
4	Content management staff have the capabilities and experience necessary to implement content management processes	4	57.14	3	42.86	1.57	78.57	Fulfilled	3
Total						1.71	85.71	Fulfilled	

of the responsibilities and roles of those working on content management in the job description" ranked second. The relative importance thereof reached 85.71% and the degree of fulfillment was "fulfilled". Statement No. 4 which reads: "Content management staff have the capabilities and experience necessary to implement content management processes" ranked third. The relative importance thereof reached 78.57%, and the degree of fulfillment was "fulfilled". The previous results indicate that the content management process is mostly centralized within the institutions in one department (Udoro et al., 2023). Depending on the nature of operations within the institutions, this could be the content management, publishing, information technology, or programs and training departments. Therefore, content management employees in those departments need to acquire the experience and training required to implement content management operations with complete efficiency (Arzoo et al., 2023).

Conclusion

The study found that the institutions under study need a clear, written strategy for content management. It became clear that the majority of the institutions under study do not have written policies, and that they perform content management operations following tacit unwritten policies. When adopting and implementing a new content management system, it is important to consider the impact of the content management system on various operational aspects within the organization such as human resources, ability to interact with other systems, budget constraints, etc. There is a large variation in the specifications and technical and functional capabilities of the content management systems used in heritage institutions in the UAE. This negatively affects the performance, functions and services of the institution as well as systems and data interoperability between the institutions.

The study recommends that organizations need to formulate a clear, written strategy for managing digital content. Re-evaluating the

institution's existing content management system, according to the content management system evaluation model proposed by the study and making a decision about changing it or enhancing its capabilities and functions through available systems and tools. Developing policies related to enterprise content management, such as security challenges, workflow procedures, retention timelines and legal compliance related to specific content, and optimize the use of cloud computing technologies to facilitate data storage and synchronization. It is necessary to develop a standard guideline that clarifies the minimum technical and functional specifications for content management systems in the institutions.

Declaration of Ownership

This article is our original work.

Conflict of Interest

There is no conflict of interest to declare in this article.

Ethical Clearance

This study was approved by the institution.

References

Ahmed, M. A. (2023). Digital content management in the age of digital transformation. *Research Review International Journal of Multidisciplinary, 8*(12), 64–72. https://doi.org/10.31305/rrijm.2023.v08.n12.009

Al-Gawhary, A. F. (2018). Health digital content: Informational overview of the extent of awareness, evaluation, investment and sharing in knowledge on the Egyptian side. *Arab Center for Research and Studies in Library and Information Sciences, 5*(9), 145–183.

Al-Khafaji, A. H. (2014). Criminal protection of antiquities and heritage. *Al-Muhaqiq Al-Hilli Magazine, 6*(2), 21–32.

Al-Sayed, A. M. (2013). Mechanisms for controlling and organizing information assets in enterprise content management systems: Exploratory study. *Modern Trends in Libraries and Information, 20*(40), 77–94.

Al-Subhi, H. O. (2013). Making digital content available at King Fahad National Library. *King Fahd National Library Journal, 19*(1), 34–74.

Arshad, N. I., Bosua, R., Milton, S., Mahmood, A. K., Zainal-Abidin, A. I., Ariffin, M. M., & Aszemi, N. M. (2022). Sustainable enterprise content management technologies use framework supporting agile business processes. *Knowledge Management Research & Practice, 20*(1), 123–140. https://doi.org/10.1080/14778238.2021.1973352

Arzoo, M. M. D., & Tiwari, M. A. (2023). Research study on content management systems (CMS): Issues with the conventional model and CMS's benefits for running business websites. *International Research Journal of Engineering and Technology, 10*(8), 214–218.

Association for Information and Image Management. (2011a). *State of the ECM industry 2011: How well is the IT meeting business needs?* Retrieved from AIIM website: http://www.aiim.org/

Bashir, S. (2015). Digital content management systems on the Internet: An evaluation study to come up with suitable standard specifications for applications of Arab information facilities. *International Journal of Library and Information Science, 2*(2), 375–380.

Boiko, B. (2001). Understanding content management. *Bulletin of the American Society for Information Science and Technology, 28*(1), 12–28.

Boiko, B. (2005). *Content management bible (2nd ed.)*. Wiley Publishing.

Brocke, J. V., Simons, A., & Cleven, A. (2011). Towards a business process-oriented approach to enterprise content management: The ECM-blueprinting framework. *Information Systems and e-Business Management,* 9, 475–496. https://doi.org/10.1007/s10257-009-0124-6

Chaterera-Zambuko, F. (2023). Enterprise content management system implementation: Insights from the national library and archives of UAE. *Information Development, 0*(0). https://doi.org/10.1177/02666669231211539

Cleland, W. A. (2007). *Best practices in digital asset management for electronic texts in academic research libraries*. Bowling Green State University.

Council of Europe. (1997). *In from the margins. A contribution to the debate on culture and development in Europe.* Council of Europe Publishing.

de Cardi, B. (1971). The Portuguese occupation of the Trucial States. *Proceedings of the Seminar for Arabian Studies, 1*, 31–34. http://www.jstor.org/stable/41222943

Emmel, N. (2013). *Sampling and choosing cases in qualitative research: A realist approach*. SAGE.

Erturk, E. (2019). Implementing enterprise content management services with an agile approach. *Business and Management Research, 8*(3), 16–25. https://doi.org/10.5430/bmr.v8n3p16

Grahlmann, K. R., Helms, R. W., Hilhorst, C., Brinkkemper, S. and van Amerongen, S. (2011) Reviewing enterprise content management: A functional framework. *European Journal of Information Systems, 21*(3), 268–286. https://doi.org/10.1057/ejis.2011.41

Hackos, J. T. (2001). *Content management for dynamic web delivery*. Wiley.

Hassan, Z. (2018). Digital content for archaeological museums' websites and its libraries on the internet: A study to create a model for the Egyptian museum. *Cybrarians Journal, 49*, 2–27. https://doi.org/10.70000/cj.2018.49.126

Ibrahim, N. M. H. (2017). *Preserving and managing digital content in the federal ministries in Sudan: Evaluative survey*. PhD Thesis. Institute for Research and Studies of the Islamic World, Omdurman University.

Jaakonmäki, R., Simons, A., Müller, O., & vom Brocke, J. (2018). ECM implementations in practice: Objectives, processes, and technologies. *Journal of Enterprise Information Management, 31*(5), 704–723. https://doi.org/10.1108/JEIM-11-2016-0187

Jasim, S., Uerpmann, M., & Uerpmann, H. P. (2016). *Mleiha. The unwritten history*. Medina Publishing Ltd.

Library of Congress, (n.d.). *Digital collections management compendium - glossary*. Available at https://www.loc.gov/programs/digital-collections-management/about-this-program/glossary/ Retrieved April 17, 2024.

Liu, Y., (2022). Application of digital technology in intangible cultural heritage protection. *Mobile Information Systems*, 5, 1–8. https://doi.org/10.1155/2022/7471121

Momoti, N. (2023). The proficient use of enterprise content management systems for access and use of records for decision-making. *Journal of the South African Society of Archivists, 56*, 106–121.

Paivarinta, T., & Munkvold, B. E. (2005) Enterprise content management: An integrated perspective on information

management. *Proceedings of the 38th Hawaii International Conference on System Sciences.*

Rosman, M. R. M., & Aziz, M. A. A. (2018). Conceptualising the benefit framework of an enterprise content management system (ECMS). *Scientific Research Journal, 15*(2), 17–34. https://doi.org/10.24191/srj.v15i2.5478

Singh, A., Chaudhary, A., & Chaudhary, K. (2023). Content management system. *Global Journal of Enterprise Information System, 15*(1), 87–92.

Smith, H. A., & McKeen, J. D. (2003). Developments in practice VIII: Enterprise content management. *The Communications of the Association for Information Systems, 11*(1), 41–54. https://doi.org/10.17705/1CAIS.01204

Svard, P. (2013). Enterprise content management and the records continuum model as strategies for long-term preservation of digital information. *Records Management Journal, 23*(3), 159–176. https://doi.org/10.1108/RMJ-12-2012-0035

The Heritage Lottery Fund. (2012). *Using digital technology in heritage projects: Good practice guide*. The Heritage Lottery Fund.

Tyrväinen, P., Päivärinta, T., Salminen, A., & Iivari, J. (2006). Characterizing the evolving research on enterprise content management. *European Journal of Information Systems, 15*(6), 627–634. https://doi.org/10.1057/palgrave.ejis.3000648

Udoro, H. O., & Osakwe, S. O. (2023). Enterprise content management operations (ECMO) and organizational efficiency. *Innovative Journal of Arts and Social Sciences, 5*(5), 1–17.

UKOLN. (2011) *An introduction to digital preservation*. Available at http://www.ukoln.ac.uk/cultural-heritage/documents/briefing-31/briefing-31.doc

Venkitachalam, K., & Bosua, R. (2019). Perspectives on effective digital content management in organizations. *Knowledge and Process Management, 26*(3), 202–209. https://doi.org/10.1002/kpm.1600

Vila, C. S. Q. (2018). Cultural heritage in the European Union: An outsider's perspective. *Santander Art and Culture Law Review, 4*(2), 251–276. https://doi.org/10.4467/2450050XSNR.18.026.10380