

# Harmonising collections dispersed across galleries, libraries, archives, and museums in a comprehensive open distance e-learning institution

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*The convergence of collections that hold library, archive, and museum (LAM) status under the libraries and information services (LIS) umbrella at academic institutions creates a cohesive educational environment that provides a formidable tuition and pedagogical foundation. However, little research has been conducted on the integration of diverse collections through information resource content management strategies within LIS. This study, therefore, sought to establish integration guidelines for information resource content management to provide support services for information seekers at LIS structures in an open distance learning space. The study utilised a systematic literature review as a qualitative research method to highlight the importance of integrating collections to enhance usability value for users. The selected theoretical framework, namely postmodern museology, institutional theory, and historical institutionalism serves as a collective lens to explore the critical role of managing information resource content in alignment with these theoretical parameters. The findings of the study revealed that aligning theories and tuition practices across diverse collections is crucial for facilitating information and knowledge discourses.*

**Keywords:** gallery, library, archive, museum, information resources, collection management

## 1 Introduction and background to the study

In the rapidly evolving landscape of education, particularly within higher learning institutions such as those offering open distance learning (ODL), the effective management and integration of diverse information resources have become increasingly vital (Ali, 2020). As educational delivery models shift towards more flexible, technology-driven formats, there is a critical need to rethink how content from multiple cultural and academic repositories, archives, libraries, and museums is organised and presented to learners in meaningful ways through online approaches (Lewi, Smith, Vom Lehn, & Cooke, 2020). These disciplines each hold unique and valuable collections that, when connected thoughtfully, can provide a rich, multidimensional foundation for teaching and learning. This study probed the complex challenges faced by LIS in harmonising collections dispersed across galleries, archives, libraries, and museums, aiming to create a seamless educational resource tailored for academic environments. The essential objective is to develop comprehensive guidelines that facilitate the fusion of heterogeneous materials from visual artworks and historical documents to textual resources into a single integrated information service. The LAM integration enhances accessibility, supports diverse learning styles and enriches the tuition process by providing students and educators with coherent, interdisciplinary resources (Hilburger, Langille, Nelson, Bordini, Greenhill, Dowson & Goddard, 2021).

By examining how galleries and museums complement library and archival collections, this research highlighted the potential for these cultural institutions to collectively enhance the educational experience. Much as galleries contribute visual and artistic perspectives, archives offer primary source materials and historical context, libraries provide extensive textual and digital content, and museums bring curated, thematic exhibits, all of which can be integrated effectively through digital technology to promote a deeper engagement and knowledge construction among information seekers (Quattrini, Costa & Patricio, 2024). A systematic literature review assisted this study by drawing on scholarly work published between 2017 and 2024 to synthesise theoretical frameworks and practical strategies relevant to the management and integration of collections under information content resource management processes. This synthesis informs the development of best practices that can be adopted by educational institutions striving to leverage their full spectrum of cultural and academic resources, thereby supporting innovative teaching methods and expanding the reach of educational content beyond traditional boundaries.

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The creation of a cohesive educational environment that integrates diverse collections from libraries, museums, archives, and gallery products is essential for advancing the knowledge base and educational grounds. This approach supports various educational theories that underpin educational methods within the LIS field (Pinho, Franco & Mendes, 2020). For example, historical institutionalism examines how entrenched practices from the past continue to shape current institutional behaviour, often resulting in resistance to change. Historically, libraries, archives, and museums originated as integrated entities during the 19th century; however, professionalisation caused their divergence over time. Today, driven by digitalisation and evolving user demands, there is a noticeable trend toward their reconvergence, promoting renewed collaboration and unified service delivery (Rasmussen, 2019).

In addition, institutional theory further outlines how external pressures, including technological advancement and shifting societal expectations, influence the operations and practices of GLAMs. In parallel, museology critiques conventional classification systems within these disciplines, advocating instead for pluralistic approaches and digital democratisation (Lewi et al., 2020). This theory highlights the importance of user-centred paradigms and socially constructed realities, emphasising interpretive flexibility over fixed, objective truths (Magalhães, 2020). Such perspectives challenge LIS professionals to rethink how collections are organised, accessed, and understood within educational contexts. Despite the manifold theoretical insights and practical possibilities, there remains a significant gap in the literature regarding the full exploration of integrated collections' value and relevance to education (Quarchioni, Paternostro & Trovarelli, 2022). This gap further emphasises the critical need for systematic reviews that draw attention to the benefit of unifying LIS collections. Integration of these diverse information, cultural, and academic resources is fundamental for improving their usability as content resources, which, in turn, enriches and diversifies the educational experience for end-users (Muhmad Asri, Singh, Mansor & Norman, 2024).

This study sought to critically examine existing theories and perspectives on the management of special collections in LIS, with the aim of identifying best practices and challenges in collection development, preservation, and user engagement.

## 2 Problem statement

Different collections within galleries, libraries, archives, and museums constitute crucial resources that are anchored in scholarly research. However, there remains a gap in comprehending the theoretical foundations and practical approaches necessary for the effective management of these collections as integrated disciplines and services. The convergence of LAMs presents several challenges, including harmonising distinct disciplinary conventions, optimising collection development, preservation, and user engagement, alongside managing diverse content and resource distribution. Moreover, initiatives aimed at unifying digital infrastructures, cataloguing, and metadata standards risk overlooking the unique identities and best practices inherent to each sector. This paper deals with the transformative impact of LAM convergence of content resources within collections management. The study objective was to establish guidelines to improve accessibility, preservation, and inter-institutional collaboration while addressing prevailing systemic issues.

The convergence of LAMs has been analysed through multiple theoretical lenses by multiple scholars, reflecting the complex interplay of historical, institutional, and postmodern museology factors. This study was based on the following theories:

Institutionalism as a lens examines how historical trajectories shape contemporary institutional characteristics, particularly in the LIS sector. This trajectory can be used by the LAM institutions to integrate their collections (Kjellman, Christensen & Eckerdal, 2022). The reconvergence of the LAM is then seen as a collaborative model, driven by digital-era user expectations and educational reforms (Rasmussen, 2019). Based on the latter statements, Plaček, Ochrana, Půček, Nemeč, and Křápek (2018) state that independent historical paths of libraries, archives, and museums still influence resistance to integrated systems, thus resisting change and formalism. This theory guides the understanding of resistance towards convergence in the LAM sector. In addition, the institutional theory moves on to express that the environments of the organisations can influence the adoption of certain narratives, practices, and actions. In this case, Vårheim, Skare and Stokstad (2020) add that despite the individualised functions of the LAM sector, the convergence of this sector can yield new ways to content retrieval and content interaction.

Whereas the postmodern museology theory challenges traditional notions of institutional boundaries within collections, this theory emphasises that pluralism and heterogeneity are the essence of the postmodern, and this moves to invalidate the ordered classification of knowledge practised by libraries, archives and museums (Kirchberg, 2015). Other postmodern issues are brought about by the process of digital democratisation that has shifted LAMs towards user-centred paradigms and functionalities (Peltonen & Nieminen, 2023). It therefore makes sense that the advocacy through this theory is to democratise information and collective knowledge, which talks to the digital age. This digital process is also bridging the gap between preservation and access (Siliutina, Tytar, Barbash, Petrenko & Yepyk, 2024). This theory then rejects the concept of objective truth and focuses on how discourses constructed by social realities. These three theoretical perspectives add value to the study as they reveal how historically rooted trajectories and critical junctures expand the

realistic options for convergence among collections in ODL institutions, as they clarify that convergence may be hindered by institutional laws, professions and organisational cultures. At the same time, they explain why particular models of LAM convergence become dominant and are seen as legitimate, for example, platform-based or commons-oriented arrangements, in specific policy and funding environments.

### 3 Methodology

A systematic literature review was done based on theories that deal with special collections in LIS using science, systematic approach. Relevant sources were identified through searches in the databases Scopus, Web of Science, and Google Scholar, focusing on publications from 2017 to 2024. Keywords such as 'special collections management,' 'library services,' and 'LAM theories' guided the search.

The selection process involved screening titles, abstracts, and full texts based on inclusion criteria such as relevance to special collections management theories and implementation challenges. Exclusion criteria filtered articles not included in accredited journals. Data extraction captured study objectives, theoretical frameworks, methodologies, findings, and limitations. Findings were synthesised into three themes: (1) theoretical foundations, (2) practical challenges of digitisation, and (3) emerging trends brought about by AI-driven digital technology in the LIS sector. The review provides a concise overview of current practices, challenges, and advancements in special collections management, offering valuable insights for future research and innovation in the field.

### 4 Literature review

The integration of LAM collections introduces several significant challenges that must be addressed to achieve effective convergence. These challenges range from reconciling differing disciplinary norms to balancing competing priorities in resource allocation.

#### 4.1 Reconciling disciplinary differences

The convergence of libraries, archives, and museums poses many challenges, as they face significant challenges due to the inherent differences in their disciplinary norms, practices, and professional identities (Warren & Matthews, 2019). While the theoretical benefits of integration, such as improved user access and streamlined management, are widely acknowledged, resistance from professionals within these institutions remains a critical barrier. Critics argue that convergence stands to risk the dilution of specialised expertise and compromise the integrity of collections through standardisation (Lam, Lange, Blili-Hamelin, Davidovic, Brown & Hasan, 2024). This concern is exacerbated by fears of job losses and diminished autonomy. For instance, Warren and Matthews (2020) highlight that resistance and organisational culture in convergence initiatives often lead personnel to revert to change management resistance practices, undermining the intended collaborative structures. Furthermore, museums face unique challenges as their interpretive practices, exhibition, and focused rhetoric differ fundamentally from the unmediated information access goals of libraries and archives, leading to collaboration of practices (Wilson, 2024). These differences underscore the complexity of achieving meaningful collaboration without eroding the distinct contributions of each institution.

Despite these concerns, proponents of LAM convergence emphasise its potential to address evolving user expectations in the digital age. Based on the latter statement, Warren and Matthews (2019) point out that there are digital access systems and promising avenues for collaboration while preserving individualised functions. Historical structures demonstrate that libraries, archives, and museums share overlapping content as well as cultural heritage preservation, suggesting that convergence is not entirely unprecedented but rather requires more emphasis on shared goals. However, achieving this emphasis requires careful organisational design and equitable resource allocation to prevent the marginalisation of smaller collections within converged entities (Russell & Layne-Worthey, 2024). While digitalisation offers opportunities for collaboration, it also necessitates transformational changes in professional practices and institutional structures, as well as for innovation and enhanced access to collections, it also necessitates transformational changes in professional practices, governance frameworks, and institutional cultures (Rasmussen, 2019).

#### 4.2 Balancing competing priorities

Balancing competing priorities in the merging of LAM services is a complex challenge that requires affected institutions to navigate trade-offs between preservation, access, collection development, curation, and user engagement. A lack of marketing strategy often forces institutions to prioritise preservation, resulting in hidden collections that remain inaccessible to researchers (Malekani, 2018). Famuyiwa (2024) outlines that while preservation ensures the long-term survival of collections, it can inadvertently limit their immediate utility for academic inquiry and influence the survival of digital information under the conservation pretext. Stakeholder expectations further complicate this process as institutional

strategies (Feather, 2018). Such include aligning LAM services with digital transformation or operational goals that deal with the specific needs of faculty and researchers.

Digital transformation is a recurring theme in institutional narratives, highlighting challenges such as technology obsolescence and the need for sustainable digital preservation frameworks. In this instance, stories from LAM professionals illustrate how institutions balance investments in physical collections with digital initiatives by adopting innovative solutions like collaborative partnerships and sustainable practices (Pacios & Cardama, 2022). This narrative emphasises the importance of integrating preservation with access through tools such as digital humanities platforms, enabling institutions to make their resources more accessible to global audiences while safeguarding the significance of the collections. On the other hand, when dealing with collaboration across functions digital transformation emerges as a key strategy for addressing competing LAM priorities. The importance of building alliances with IT departments, academic units, and external partners, should not be compromised, as this is the objective of achieving LAM convergence goals (Vårheim, Skare, & Stokstad, 2020). In addition, with the creation of cross-functional collaboration and aligning efforts with institutional objectives, institutions can better navigate resource constraints while advancing both content moulding and access initiatives.

### 4.3 Technological integration barriers

The literature identifies significant technological barriers to the convergence of libraries, archives, and museums (LAMs), particularly in efforts to unify digital platforms and metadata standards. These challenges stem from the distinct identities and best practices unique to each domain, which complicate the creation of interoperable systems capable of accommodating diverse descriptive requirements (Pioli, 2024). Disparities in the metadata interoperability remain a core issue, with inconsistencies in usage and divergent approaches to authority content and controlled vocabularies presenting obstacles to integration. Rasmussen and Hjørland (2023) state that digitisation is central to streamlining access to LAM collections but introduces its own set of challenges, including technological obsolescence, privacy concerns, and resource constraints. However, the breakthrough in collaborative initiatives like crowdsourcing has emerged as innovative solutions, enabling institutions to engage communities in tasks such as transcription and metadata enhancement while addressing resource limitations. In addition to the breakthrough, partnerships with external entities, such as universities or corporations like the Google Cultural Institute, further demonstrate how digitisation can expand access and create transformative user experiences that go beyond traditional onsite interactions (Pioli, 2024).

Dealing with the convergence, theoretical barriers require willpower to enforce cross-sector collaboration through professional education and training programmes. Such an aspiration is important because current siloed approaches in LAM hinder integration efforts, but proposals for developing shared practices across management, digitisation, metadata standards, and information literacy offer promising solutions (Fritz, 2021). The drive and aspiration can cultivate collegiality among professionals and equip them with interdisciplinary skills for LAM practices and can yield better navigated shared challenges. This is an ideal situation because the buy-in of human resources can assist in overcoming both technical and theoretical barriers that are essential for sustainable convergence that enhances access to cultural heritage and benefits for both practitioners and users.

### 4.4 Rethinking resource description

The systematic literature review highlighted a significant paradigm shift in the description and accessibility of special collections content resources driven by evolving bibliographic practices. Therefore, cataloguing content resources under a combined data space may enhance retrieval protocol, discovery and accessibility of these collections (Koster & Woutersen-Windhower, 2018). Such recommendations emphasise adopting practical, flexible, and user-centred approaches that prioritise basic-level access to all unique materials over exhaustive descriptions of catalogued items. This strategy aims to strike a balance between resource efficiency and broader accessibility.

A central focus of this shift is integrating metadata for combined collections, creating a broader discovery interface. The sharing of metadata across LAM sectors can foster collaboration and enable seamless access to diverse collections. This approach aligns with the growing trend towards open bibliographic systems that support interoperability and global accessibility. Such integration is critical for addressing 'hidden collections,' which are often inaccessible due to outdated cataloguing practices or limited digitised content.

This transformation also underscores the importance of user-centred cataloguing practices, which emphasise flexibility and responsiveness to diverse user needs. Libraries are encouraged to adopt metadata frameworks that facilitate interoperability while ensuring efficient discovery interfaces (Alemu, 2016). Overall, these changes represent a clear call to action for libraries to modernise their approaches, ensuring special collections are more visible, accessible, and relevant in an increasingly digital and interconnected world.

#### 4.5 Digital transformation imperatives

Digital transformation has become a key driver of convergence among LAMs, reshaping traditional practices and guiding collaboration across institutional boundaries (Ray & Botticelli, 2021). This driver also affects the management of born-digital collections, which do not require physical segregation within traditional special collections units, which prompted traditional institutions to rethink their approaches to collection preservation and accessibility (Thompson, 2020). As a result, the urge to service both born-digital and traditional content demands widespread efforts to ensure their exposure and long-term survival, challenging established frameworks while opening new opportunities for innovation. On the other hand, it can be argued that digital technologies have disrupted traditional boundaries between LAM institutions, creating platforms for integration that address shared goals such as broadening access to cultural heritage and maintaining relevance in a digital-first world (Rodriguez, 2024).

The convergence of LAM institutions is further supported by the transformative impact of digital tools on access and user interaction (Kjellman et al., 2022). In this regard, Jaillant (2022) adds that online finding aids, remote access technologies, and digitisation of content have revolutionised how researchers engage with content, enabling the exploration of both traditional records and born-digital collections like online sources and social media. Such a shift underscores the need for interdisciplinary collaboration among archivists, digital humanists, computer scientists, and cultural heritage professionals to fully harness the potential of digital technologies. At the same time, educational initiatives such as competency-based curricula are equipping future professionals with the skills needed to navigate this evolving landscape, emphasising areas like digitisation best practices, metadata creation, and project management (Padovano & Cardamone, 2024).

It can therefore be concluded that digital transformation is not only redefining institutional boundaries but also creating imperatives for collaboration and integration across the LAMs industry. It is worth mentioning that traditional institutions can address contemporary challenges such as financial pressures while unlocking new possibilities for research and public engagement. The convergence of LAMs represents an opportunity to preserve cultural heritage in innovative ways while ensuring broader access to information in an increasingly interconnected world (Warren & Matthews, 2019). As digital technologies continue to evolve, they will shape the future trajectory of LAMs as collaborative entities dedicated to safeguarding cultural memory.

#### 5 Discussion

The integration of LIS content management across the LAM sector represents a dynamic field marked by both opportunities and challenges (Onunka, Onunka, Fawole, Adeleke & Daraojimba, 2023). This narrative explores the complexities of LAM convergence, emphasising the obstacles faced and the potential benefits of integration.

Each LAM discipline operates under distinct professional norms and practices, thus making the unification of their services a challenging endeavour. In support of this notion, Kjellman et al. (2022) add that resistance within the LAM disciplines often arises from professionals being concerned about losing specialised expertise or compromising the integrity of collections through standardisation. For example, museums prioritise interpretive practices that differ significantly from libraries' focus on unmediated access to information. Additionally, limited resources compel institutions to prioritise preservation over accessibility, resulting in continuity of 'hidden collections' remaining inaccessible to researchers (Rossman, 2022). Technological barriers further complicate integration, and metadata interoperability remains a significant challenge due to divergent standards across LAM sectors (Allison-Bunnell, Long, Bond, Nielsen & Valentine, 2024). Issues such as technology obsolescence and privacy concerns add layers of complexity to the convergence. However, collaborative initiatives like crowdsourcing and partnerships with external entities seem to offer promising solutions.

Despite these challenges, the convergence of LAM institutions presents numerous opportunities. Digital technologies are revolutionising traditional practices, enabling broader access to cultural heritage through tools like online finding aids and remote access platforms (Barone, 2024). Such advancements promote interdisciplinary collaboration among archivists, computer scientists, and cultural heritage professionals. Shared metadata frameworks enhance discovery interfaces, making collections accessible on a global scale. This paradigm shift prioritises user-centred cataloguing practices over exhaustive descriptions, transforming resource description methods. Furthermore, collaborative models within LAM institutions create opportunities for resource sharing, collaboration and learning (Lam, Nguyen, Le & Tran, 2021). Credibly, historical overlaps in content and cultural heritage preservation suggest that integration is feasible but requires careful organisational design to ensure equitable resource allocation.

Theoretical perspectives on LIS content management emphasise balancing technical and organisational challenges with user-centred approaches (Ukwueze, 2024). Sustainable convergence depends on addressing professional resistance through inclusive dialogue, interdisciplinary training, and robust planning that respects the unique identities of each

institution. Through integrating their strengths while acknowledging their differences, LAMs can create a unified framework that enhances accessibility while preserving their distinct roles in cultural heritage management.

## 6 Recommendations

When dealing with LIS content management, it becomes evident that technological adaptation is a core strategy for modern libraries. The widespread adoption of content management systems has streamlined workflows, reduced duplication, and enhanced the accessibility of digital collections. Platforms like Drupal and WordPress empower non-technical staff to manage websites, event calendars, and digital repositories effectively. However, metadata interoperability and standardised frameworks remain persistent challenges, particularly in cross-sector collaboration among LAMs.

A significant trend in LIS is the emphasis on user-centred design. Libraries are increasingly prioritising intuitive navigation, responsive design, and accessibility compliance to meet diverse user needs. The personalisation of content delivery and user-centric cataloguing practices have improved engagement, though gaps persist in aligning services with emerging research data management demands. This shift underscores the evolving role of LIS professionals, who now act as content curators, translators, and collaborators, bridging gaps between IT departments, researchers, and cultural heritage institutions.

Despite these advancements, many institutions struggle to balance preservation priorities with digital transformation due to limited funding and competing mandates. Collaborative models, such as crowdsourcing and partnerships with academic units, are emerging as viable solutions to optimise resource utilisation. However, resistance to convergence among LAMs highlights the need for interdisciplinary training to harmonise workflows and institutional identities. The synthesis of theories and practices in LIS content management reveals the transformative role in navigating the digital age. To move forward, libraries must prioritise the integration of advanced technologies, such as AI-driven tools for metadata enrichment and workflow automation, while ensuring compliance with privacy standards. Interdisciplinary collaboration across LAM sectors is crucial for harmonising standards and sharing expertise in digital preservation. Additionally, investing in training programmes to equip professionals with content management administration, data literacy, and user experience design skills is essential.

Future research should explore scalable models for RDM services, ethical implications of AI in content curation, and metrics for evaluating the social impact of integrated LIS systems. By embracing these strategies, libraries can solidify their role as agile, user-focused hubs in an increasingly digital knowledge ecosystem. Ultimately, the convergence of technological innovation, user-centric design, and collaborative practices will redefine the landscape of LIS content management, positioning libraries as indispensable resources for the future.

## 7 Conclusion

The integration of LIS content management across the LAM disciplines represents a transformative yet complex endeavour. This research highlights the dual nature of LAM convergence, balancing significant challenges with promising opportunities. The distinct professional norms and priorities of LAMs often create resistance to integration, particularly concerning the preservation of institutional identities and the integrity of collections. Technological barriers, such as metadata interoperability and obsolescence, further complicate efforts. However, innovative strategies like collaboration with IT departments, crowdsourcing, and external partnerships provide viable pathways for addressing these issues.

Digital technologies are reshaping traditional practices within LAM institutions by enabling broader access to cultural heritage through online platforms and shared metadata frameworks. These advancements not only enhance global accessibility but also foster interdisciplinary collaboration among LIS professionals, computer scientists, and cultural heritage experts. The shift towards user-centred cataloguing and resource-sharing models underscores the potential for LAM institutions to harmonise their efforts while preserving their unique roles.

Sustainable integration requires addressing professional resistance through inclusive dialogue, interdisciplinary training, and robust planning that respects the distinct identities of each institution. Through advanced technologies such as AI-driven tools for metadata enrichment and workflow automation, alongside fostering cross-sector collaboration, LAM institutions can create a unified framework that balances accessibility with preservation. Ultimately, this convergence offers a pathway to modernising cultural heritage management while ensuring equitable resource allocation and enhanced user engagement.

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