Journal of Information System and Technology Management
JISTM
EISSN: 0128-1666
Volume 10 Issue 40 (September 2025) PP. 199-215
DOI: 10.35631/JISTM.1040014

JOURNAL OF INFORMATION SYSTEM AND TECHNOLOGY MANAGEMENT (JISTM)
www.jistm.com

CORPORATE TAXONOMY MAPPING FOR KNOWLEDGE ASSET MANAGEMENT IN MALAYSIAN KNOWLEDGE-BASED ORGANIZATIONS: A CONCEPTUAL FRAMEWORK FOR SPECIAL LIBRARY PRACTICE

Wan Ainol Mursyida Ahmad Tarmizi[1*], Sharifah Fahimah Saiyed Yeop[2]

[1] Faculty of Information Science, Universiti Teknologi Mara (UiTM) Kedah, Malaysia
Email: wainolmursyida@uitm.edu.my
[2] Knowledge Management Department, Universiti Teknologi Petronas, Perak, Malaysia
Email: sharifah_fahimah@utp.edu.my
[*] Corresponding Author

Article Info:

Article history:
Received date: 26.06.2025
Revised date: 16.07.2025
Accepted date: 17.08.2025
Published date: 19.09.2025

To cite this document:

Tarmizi, W. A. M. A., & Yeop, S. F. S. (2025). Corporate Taxonomy Mapping for Knowledge Asset Management in Malaysian Knowledge-Based Organizations: A Conceptual Framework for Special Library Practice. *Journal of Information System and Technology Management, 10* (40), 199-215.

DOI: 10.35631/JISTM.1040014

Abstract:

This paper proposes a conceptual framework for corporate taxonomy mapping aimed at enhancing knowledge asset management (KAM) in Malaysian knowledge-based organizations (KBOs), with a focus on the strategic role of special libraries. Drawing on a qualitative synthesis of literature, the study identifies key components, including knowledge asset identification, taxonomy structuring, dynamic maintenance, and the role of special librarians as knowledge stewards. The framework integrates knowledge management theory, AI-enabled taxonomy systems, and librarianship practice to address challenges in organizing and retrieving both tacit and explicit knowledge. The proposed model provides a strategic approach to taxonomy governance, aligning knowledge structures with institutional objectives and dynamic information needs. It is intended to guide special libraries in becoming active enablers of sustainable knowledge ecosystems within KBOs.

Keywords:

Corporate Taxonomy Mapping, Knowledge Asset Management (KAM), Knowledge-Based Organizations (KBOs), Knowledge Stewards, Special Libraries, Knowledge Management (KM), Dynamic Taxonomy

Journal of Information System and Technology Management
JISTM
EISSN: 0128-1666
Volume 10 Issue 40 (September 2025) PP. 199-215
DOI: 10.35631/JISTM.1040014

Introduction

In today's knowledge-driven economy, organizations rely increasingly on their ability to manage and utilize knowledge assets (KAs) for strategic advantage. Knowledge-based organizations (KBOs), including research institutions, government agencies, and corporate firms in Malaysia, must navigate vast and complex reservoirs of information. As such, the development and implementation of corporate taxonomies in structured classification systems for organizing information have emerged as essential tools for optimizing knowledge management (Nakash, 2024). A corporate taxonomy can be defined as a structured, hierarchical classification of terms and concepts tailored to an organization's needs, designed to support consistent labeling, retrieval, and sharing of knowledge across systems and stakeholders (Lambe, 2019). These taxonomies provide a foundation for systematically capturing, categorizing, and retrieving organizational knowledge, thereby enhancing decision-making, innovation, and organizational learning.

A well-structured taxonomy not only supports the organization of data but also promotes knowledge asset management (KAM) by mapping both explicit and tacit knowledge. Explicit knowledge refers to information that is easily documented, codified, and shared, such as manuals, reports, and databases. In contrast, tacit knowledge is deeply embedded in individual experience, context, and practice, and is often difficult to articulate (Bakry, 2023). Managing both forms of knowledge effectively is crucial for KBOs aiming to achieve agility, continuity, and innovation in a rapidly changing environment. Dalkir (2017) in Knowledge Management in Theory and Practice, has emphasized that effective knowledge structures such as taxonomies are critical for organizing explicit knowledge and for connecting it with tacit knowledge through processes like knowledge mapping and sharing. In a nutshell, a well-structured taxonomy acts as a unifying framework for knowledge asset management (KAM), ensuring that both explicit and tacit knowledge are systematically captured, connected, and leveraged. By enabling logical structuring of explicit resources and facilitating the surfacing of tacit insights through knowledge mapping, taxonomies provide organizations with the tools to enhance decision-making, promote innovation, and maintain resilience in dynamic environments (Bakry, 2023; Dalkir, 2017).

Corporate taxonomy mapping serves as a bridge between these two forms of knowledge. For explicit knowledge, taxonomies enable logical structuring and consistent labeling of content. Hedden (2020) explains how taxonomies provide logical structuring, labeling, and consistency for information assets, especially explicit knowledge stored in repositories. For tacit knowledge, taxonomy-supported tools such as knowledge maps and ontologies can visualize human expertise, collaboration patterns, and social networks within organizations (Moradi et al., 2017; Kudryavtsev et al., 2022). This allows for tacit knowledge to be indirectly captured, shared, and transferred, especially within knowledge-intensive units, such as special libraries. Cheng and Xia (2023) conducted a systematic review of methods for aligning, mapping, and merging taxonomies in the field of information sciences, highlighting both conceptual and technical approaches. Their study emphasizes that effective taxonomy work often requires integration across heterogeneous knowledge structures, such as different classification schemes, domain-specific vocabularies, or organizational taxonomies

Special libraries, particularly those embedded within Malaysian KBOs, play a unique role in facilitating KAM. Kumar (2012) emphasizes that librarians and information specialists in knowledge management always think that special libraries are embedded in organizations to

Journal of Information System and Technology Management
EISSN: 0128-1666
JISTM
Volume 10 Issue 40 (September 2025) PP. 199-215
DOI: 10.35631/JISTM.1040014
provide targeted, domain-specific information services that directly support policy, research, and innovation. Special libraries are vital within knowledge-intensive environments such as corporations, research institutions, healthcare organizations, and government agencies. Their role transcends traditional library functions, providing tailored information resources, expert search services, and strategic insights that support decision-making and foster innovation processes. Unlike general libraries, special libraries manage high-value, domain-specific information and support organizational functions such as policy development, research, and innovation. Their ability to structure and contextualize knowledge resources depends heavily on the availability of dynamic and adaptive taxonomies tailored to organizational goals (da Silva et al., 2025). The adoption of role-based knowledge maps, such as expertness maps and collaboration maps which further enhances their ability to support managerial decision-making and knowledge flow (Moradi et al., 2017).

Moreover, the traditional view of taxonomies as static hierarchies is giving way to more dynamic taxonomy models, which allow knowledge assets to evolve based on criteria such as durability, profitability, and sustainability of competitive advantage (Li et al., 2009; Li et al., 2010). This flexibility is particularly vital for organizations operating in fast-paced industries, such as Malaysia's high-tech SMEs and public-listed companies, where knowledge value fluctuates with market trends and technological shifts (Bakry, 2023; Kamaluddin & Rahman, 2013). The effective management of knowledge assets (KAs) has become a strategic imperative for Malaysian knowledge-based organizations (KBOs), particularly those operating in dynamic sectors such as technology, academia, and government. Within this landscape, corporate taxonomy mapping plays a critical role in organizing, retrieving, and leveraging both tacit and explicit knowledge across organizational functions. However, despite its strategic value, many special libraries in Malaysia lack a structured framework to guide the implementation of taxonomy mapping aligned with institutional knowledge management (KM) goals (Nakash, 2024). This limitation hinders the libraries' ability to fully support organizational intelligence and decision-making processes.

Managing knowledge assets from a librarian's perspective begins with the identification and classification of valuable resources. These assets include physical and digital materials such as books, journals, reports, internal documents, and institutional knowledge. Librarians use established cataloging systems and metadata standards to organize these resources systematically, ensuring they are easily searchable and accessible to users. This foundational work supports efficient information retrieval and maintains consistency across collections. Preservation and access are central to the librarian's role in knowledge management. Librarians implement strategies to digitize physical records, maintain digital archives, and ensure long-term accessibility through proper storage and backup systems. They also manage user access by creating intuitive search interfaces, offering training, and ensuring compliance with copyright and data protection regulations. These efforts help safeguard institutional knowledge while promoting its responsible use. Beyond organization and access, librarians actively foster knowledge sharing and continuous improvement. They facilitate collaboration through workshops, webinars, and support for communities of practice. By encouraging contributions to institutional repositories and gathering user feedback, librarians help evolve knowledge management practices to meet changing needs. Their role is not only custodial but also strategic in ensuring that knowledge assets are leveraged to support learning, innovation, and informed decision-making.

Journal of Information System and Technology Management
JISTM
EISSN: 0128-1666
Volume 10 Issue 40 (September 2025) PP. 199-215
DOI: 10.35631/JISTM.1040014

Research Gap

Despite their potential, many Malaysian KBOs lack a systematic approach to taxonomy development, particularly in the context of special libraries. The absence of a standardized framework for corporate taxonomy mapping limits the effectiveness of knowledge retrieval, reuse, and governance. There is a pressing need to develop a conceptual framework that integrates principles of knowledge ecosystem mapping, ontology design, and systematic taxonomy management to support performance-driven KM initiatives (Nakash, 2024; da Silva et al., 2025). Such a framework must also recognize the increasingly strategic role of special librarians as knowledge facilitators. These professionals are no longer mere custodians of information but are active participants in the organization's knowledge ecosystem. By equipping them with taxonomic tools and methodologies, special libraries can better align their practices with organizational objectives and contribute to sustainable competitive advantage.

Although corporate taxonomy mapping is widely recognized as a fundamental tool in enabling systematic knowledge retrieval and performance-driven knowledge management, existing studies primarily focus on general organizational contexts and overlook its tailored application in special libraries within Malaysian knowledge-based organizations. The growing reliance on knowledge assets in public institutions and high-tech industries has heightened the need for structured taxonomic systems to manage both explicit and tacit knowledge. However, a significant gap exists in the literature regarding how such taxonomies can be practically implemented in special library environments to enhance organizational knowledge workflows (Nakash, 2024; Sharma et al., 2008).

Technological advancements such as auto-tagging and AI-based classification have added complexity to corporate taxonomy implementation nowadays. While these innovations offer efficiency, they also introduce new constraints related to accuracy, contextual relevance, and taxonomy governance issues that are especially pronounced in specialized information services like those offered by special libraries. Despite the availability of frameworks for knowledge audits and general taxonomy development (Sharma et al., 2008), few studies have translated these into models or guidelines specifically designed for Malaysian special libraries tasked with organizing high-value and domain-specific knowledge assets (Che Rusuli et al., 2012).

Furthermore, current literature acknowledges the contributions of taxonomy to knowledge discovery, ownership tracking, and decision support through role-based knowledge mapping and knowledge ecosystems (Kudryavtsev et al., 2022; Schiuma, 2010). However, most of these models do not explicitly address the unique role of library and information science professionals in facilitating taxonomy mapping within organizational settings. There is insufficient conceptual synthesis that integrates taxonomy dynamics, knowledge flow management, and the strategic positioning of special libraries in Malaysia's knowledge infrastructure. This study addresses this gap by proposing a conceptual framework tailored to the needs and contexts of special library practice within Malaysian knowledge-based organizations.

While previous studies have examined the benefits of taxonomies in KM systems (Li et al., 2009; Li et al., 2010), most focus on static taxonomies and do not address the dynamic nature of knowledge in contemporary enterprises. Further, the application of corporate taxonomy mapping has been explored in general organizational settings (Schiuma, 2010), but limited attention has been given to special libraries as strategic actors within KBOs. Special libraries,

Journal of Information System and Technology Management
EISSN: 0128-1666
Volume 10 Issue 40 (September 2025) PP. 199-215
DOI: 10.35631/JISTM.1040014
tasked with managing domain-specific resources and enabling institutional learning, require frameworks that are adaptable, context-aware, and grounded in current technological realities, such as AI-enhanced knowledge mapping (Moradi et al., 2017; Kudryavtsev et al., 2022).

Existing models, such as the knowledge ecosystem mapping (da Silva et al., 2025) and role-based knowledge maps (Moradi et al., 2017) provide valuable foundations for understanding the taxonomy's role in KAM. These models emphasize visualization, collaboration, and retrieval but often exclude the librarian's role as a knowledge intermediary. Studies also highlight challenges in taxonomy implementation, particularly the lack of adaptive structures to cope with evolving knowledge and the difficulties in mapping tacit knowledge (Nakash, 2024; Sharma et al., 2008). This gap necessitates a contextualized framework for Malaysian special libraries, considering their operational, technological, and strategic roles within their parent organizations.

Research Objectives

This study aims to explore the essential components required for an effective corporate taxonomy framework that supports knowledge asset management (KAM) within Malaysian special libraries. Specifically, it seeks to identify how such taxonomies can be designed to manage both tacit and explicit knowledge while remaining adaptable to the dynamic nature of organizational knowledge flows. The research questions guiding this inquiry are: (1) What are the critical components of an effective corporate taxonomy for KAM in Malaysian special libraries? and (2) How can special libraries support the development and maintenance of corporate taxonomies aligned with dynamic knowledge flows?

The primary objective of this study is to develop a conceptual framework for corporate taxonomy mapping tailored to the specific needs of special libraries operating within Malaysian knowledge-based organizations. Supporting objectives include identifying taxonomy components that effectively capture diverse knowledge types, proposing strategies for sustaining dynamic taxonomy structures, and clarifying the strategic role of special librarians in facilitating knowledge organization and flow through taxonomic systems.

By addressing a clear research gap, this study contributes to both theory and practice. Conceptually, it integrates existing models of knowledge mapping, dynamic taxonomy, and knowledge ecosystem analysis into a unified framework suited to special libraries. Practically, it offers librarians and KM practitioners a strategic tool to organize, retrieve, and contextualize knowledge assets. The proposed framework can also support the digital transformation of Malaysian special libraries by enhancing their ability to manage knowledge proactively in response to changing organizational needs (Bakry, 2023; Kamaluddin & Rahman, 2013).

Therefore, this paper aims to conceptualize a framework for corporate taxonomy mapping tailored to the Malaysian KBO context, with a specific focus on enhancing the practice of special libraries. Drawing from existing literature on knowledge mapping, dynamic taxonomies, and knowledge ecosystems, this framework seeks to provide practical guidance for taxonomic structuring, knowledge visualization, and role-based knowledge management.
In doing so, the study offers a strategic pathway for special libraries to transition into key enablers of organizational intelligence. Ultimately, effective taxonomy mapping will not only facilitate better management of knowledge assets but also strengthen the role of special libraries as critical nodes in Malaysia's knowledge infrastructure.

Journal of Information System and Technology Management
JISTM
EISSN: 0128-1666
Volume 10 Issue 40 (September 2025) PP. 199-215
DOI: 10.35631/JISTM.1040014

The remainder of this paper is structured as follows: Section 2 presents a literature review covering key themes such as knowledge asset types, taxonomy development, and the role of special libraries in KAM. Section 3 outlines the Methodology of this study. Section 4 proposes the conceptual framework and its core components. Section 5 discusses the potential implications and application of the framework within Malaysian KBOs. Finally, Section 6 concludes the paper with recommendations for future research and practical implementation.

Literature Review

The growing importance of knowledge as a strategic asset in knowledge-based organizations (KBOs) has heightened the need for effective mechanisms to manage, structure, and retrieve information. Among these mechanisms, corporate taxonomy mapping has emerged as a vital component of performance-driven knowledge management (KM), particularly within special libraries tasked with curating and organizing institutional knowledge. Taxonomies facilitate standardized terminology, support efficient knowledge discovery, and enable the integration of both tacit and explicit knowledge assets across organizational systems. However, the development and implementation of taxonomy structures remain complex and context-dependent, influenced by technological, structural, and human factors. This literature review synthesizes current scholarship on the importance, challenges, contributions, and key components of corporate taxonomy mapping in the context of knowledge asset management, with a specific focus on its application within Malaysian special libraries.

Importance of Corporate Taxonomy Mapping in Knowledge Asset Management

Corporate taxonomy mapping serves as a foundational tool in knowledge asset management by providing a consistent structure for organizing and retrieving both tacit and explicit knowledge. As Nakash (2024) notes, the creation of standardized taxonomies enables organizations to streamline their information systems, reduce redundancy, and support performance-driven knowledge management. This is particularly significant for knowledge-based organizations (KBOs), where knowledge is a key strategic asset.

In addition, corporate taxonomies facilitate the creation of a common language across departments, making it easier to align knowledge flows with organizational goals. They help prevent information silos and allow for more efficient cross-functional collaboration. In the context of special libraries, these taxonomies are essential for ensuring that domain-specific knowledge can be indexed and retrieved accurately for decision-making and research purposes.

Taxonomies play a fundamental role in organizing and categorizing information within knowledge-intensive environments. They provide a hierarchical structure that breaks down complex domains into manageable categories, enabling more efficient navigation and retrieval of information. By standardizing terminology and classification, taxonomies reduce ambiguity, foster consistency, and ensure that professionals across different fields share a common language (Gilchrist, 2016; Hedden, 2020). This structured approach not only enhances information flow but also improves user experience in accessing relevant resources.

Beyond organization, taxonomies significantly improve searchability and interoperability within information systems. They enable users to refine searches and retrieve more precise results, which is particularly beneficial in research and decision-making contexts (Nickerson & Varshney, 2016). Moreover, standardized taxonomies facilitate seamless knowledge sharing and data integration across diverse systems and platforms, ensuring interoperability in multi-

Journal of Information System and Technology Management
EISSN: 0128-1666
Volume 10 Issue 40 (September 2025) PP. 199-215
DOI: 10.35631/JISTM.1040014

disciplinary or multi-institutional environments (Lambe, 2019). Such functions make taxonomies essential in supporting collaborative work, especially in digital libraries, healthcare, and corporate knowledge management systems.

Taxonomies are also vital for scalability and adaptability in dynamic domains. As knowledge expands, taxonomies can evolve to incorporate new terminologies and emerging concepts, ensuring their long-term relevance (Hedden, 2020). For researchers they provide a consistent framework for categorization and analysis, helping to identify trends, patterns, and gaps in knowledge (Garshol, 2004). Ultimately, well-structured taxonomies serve as foundational tools for effective knowledge management, enabling organizations and researchers alike to leverage structured information for informed decision-making and sustainable knowledge growth.

From a knowledge lifecycle perspective, taxonomy mapping plays a critical role in the organization, exploitation, and reuse of knowledge. Sharma, Foo, and Morales-Arroyo (2008) emphasize that taxonomy structures influence how knowledge is curated, accessed, and interpreted across the enterprise. When properly developed, taxonomies not only enhance retrieval efficiency but also drive innovation by enabling the recombination of knowledge elements in new ways.

Moreover, special libraries, unlike general-purpose libraries, deal with complex and context-specific information. The need for customized taxonomies that reflect organizational terminology, policy domains, and user behavior is therefore paramount. A well-developed corporate taxonomy enables special libraries to serve as strategic nodes in institutional knowledge ecosystems, supporting policy formulation, research, and operational efficiency. In the Malaysian context, knowledge-intensive organizations such as government think tanks, corporate R&D units, and higher education institutions are increasingly dependent on their libraries to manage institutional memory and information flow. As such, the implementation of tailored taxonomy systems in special libraries is critical for enabling long-term knowledge retention and accessibility.

Ultimately, corporate taxonomy mapping not only supports document organization and retrieval but also underpins the broader knowledge strategy of organizations. It connects knowledge assets with their application, value, and custodianship, essential elements in building a knowledge-enabled organization.

Challenges of Implementing Corporate Taxonomy Mapping

Despite its strategic value, implementing corporate taxonomy mapping presents multiple challenges, particularly in adapting to the rapid evolution of digital technologies. One major concern is the integration of auto-tagging and AI-driven classification systems. While these technologies promise efficiency, they often lack domain sensitivity and may misclassify content without human oversight (Nakash, 2024). This is particularly problematic in special libraries, where context-specific accuracy is essential.

Another issue is the growing volume and variety of digital content. Organizations increasingly manage unstructured data such as emails, multimedia, and expert narratives that do not fit neatly into conventional classification schemes. As Sharma et al. (2008) point out, organizing knowledge for reuse in such environments requires continuous evaluation through knowledge audits to ensure taxonomies remain aligned with organizational priorities. The dynamic nature

Journal of Information System and Technology Management
EISSN: 0128-1666
Volume 10 Issue 40 (September 2025) PP. 199-215
DOI: 10.35631/JISTM.1040014

of organizational knowledge also poses a challenge. Knowledge assets evolve, changing in relevance and value depending on business needs. Static taxonomies may fail to reflect these changes, resulting in outdated classifications and poor retrieval outcomes. Developing dynamic, adaptive taxonomies is therefore essential, but doing so requires a high level of expertise and resource investment.

Furthermore, the complexity of stakeholder engagement in taxonomy development can hinder implementation. Special libraries often serve diverse user groups with varying information needs and expectations. Reconciling these needs in a single taxonomy structure requires careful analysis and iterative design, which can be time-consuming and labour-intensive. Technological infrastructure and digital readiness also vary across Malaysian KBOs, affecting their ability to adopt advanced KM tools. Special libraries in smaller organizations or public institutions may lack the funding, technical expertise, or systems integration necessary for effective taxonomy implementation.

Lastly, institutional culture plays a critical role in the success of taxonomy initiatives. If knowledge sharing is not embedded within the organization's values, even the most well-structured taxonomies will be underutilized. Therefore, taxonomy mapping must be supported by a comprehensive change management strategy that encourages user adoption and continuous improvement.

Contributions to Knowledge Discovery and Retrieval

One of the key contributions of corporate taxonomy mapping is its ability to enhance knowledge discovery by making implicit relationships between knowledge elements visible. Taxonomies provide a scaffold for organizing and navigating large information repositories, enabling users to locate relevant resources quickly and efficiently (Kudryavtsev et al., 2022). In addition, the use of knowledge maps, which are graphical representations of knowledge domains, their sources, and application contexts, complements taxonomy structures by visualizing connections and facilitating insight generation. These tools support strategic decision-making, especially in environments where knowledge is a key driver of innovation and competitiveness.

For special libraries, such contributions are particularly valuable. By embedding taxonomy structures into cataloging systems and knowledge portals, special librarians can offer targeted access to institutional knowledge assets. This ensures that policy documents, research outputs, and domain-specific content are readily available to users based on their roles and needs. Oyedokun et al. (2018) stress that librarians must not only serve as custodians of information but also evolve into active participants and facilitators in the knowledge discovery process. This transformation requires a comprehensive understanding of user behavior, including how individuals seek information, interpret metadata, and engage with taxonomic structures. Librarians must be adept at analyzing user search patterns, preferences, and terminological expectations to ensure that taxonomy systems are not only logically structured but also user-centered and intuitively navigable. By optimizing classification schemes, indexing protocols, and metadata design, special librarians can significantly enhance the relevance and accuracy of search outcomes, ultimately improving information accessibility and user satisfaction.

Journal of Information System and Technology Management
JISTM
EISSN: 0128-1666
Volume 10 Issue 40 (September 2025) PP. 199-215
DOI: 10.35631/JISTM.1040014

Moreover, taxonomy mapping plays a critical role in enabling knowledge traceability, an increasingly vital function in modern knowledge ecosystems. By linking knowledge assets to their sources, custodians, contributors, and usage histories, taxonomy systems provide a transparent record of knowledge flows within an organization. This traceability supports a range of strategic and operational needs, including compliance with audit and regulatory standards, ensuring intellectual property protection, and supporting organizational memory. It also facilitates retrospective evaluations, enabling institutions to assess how knowledge has been used over time, what impact it has had on decision-making and innovation, and where knowledge gaps may persist.

In addition to these technical and compliance-related benefits, corporate taxonomy mapping empowers libraries to assume a central role in organizational learning and strategic planning. Special libraries, particularly in knowledge-based organizations, are well-positioned to function as dynamic knowledge hubs rather than static information depositories. Through robust taxonomy frameworks, libraries can support personalized knowledge services, tailoring access based on user roles, expertise levels, and organizational contexts. They can also enable cross-domain knowledge integration, connecting disparate knowledge silos across departments and disciplines, thus fostering a more holistic and collaborative knowledge culture.

This shift transforms the library into an active enabler of knowledge-driven performance, innovation, and continuous improvement. By embedding corporate taxonomy mapping into their operations, libraries align more closely with organizational goals and become instrumental in facilitating strategic knowledge initiatives. Ultimately, a well-implemented taxonomy not only supports daily information retrieval tasks but also enhances the library's ability to contribute meaningfully to organizational intelligence, foresight, and sustainable competitive advantage.

Key Components of a Conceptual Framework for Corporate Taxonomy Mapping

A conceptual framework for corporate taxonomy mapping in special libraries must integrate several key components to be effective and sustainable. First, it should begin with the identification and measurement of knowledge assets, recognizing both tangible and intangible forms of knowledge that exist within the organization (Schiuma, 2010). This requires inventorying documents, expert knowledge, and institutional processes that hold knowledge value.

Second, the framework should support the mapping of knowledge assets, focusing on how these assets relate to organizational roles, workflows, and strategic priorities. Taxonomies should reflect not only content categories but also knowledge domains, user types, and information use cases (Kudryavtsev et al., 2022). It focuses on how these assets relate to organizational roles, workflows, and strategic priorities. Effective taxonomy mapping must go beyond static content categorization to encompass the dynamic relationships between knowledge, its users, and its applications within the institutional context. This includes identifying who uses specific knowledge assets, for what purposes, and under what conditions. By aligning taxonomies with operational processes, decision-making hierarchies, and organizational goals, special libraries can ensure that knowledge is not only accessible but also actionable.

Journal of Information System and Technology Management
EISSN: 0128-1666
Volume 10 Issue 40 (September 2025) PP. 199-215
DOI: 10.35631/JISTM.1040014

Third, an effective framework should incorporate knowledge flow management, addressing how knowledge moves within and across departments. This includes capturing tacit knowledge through collaboration tools, interviews, and expert profiling, and linking it to explicit content through metadata and classification structures (Che Rusuli et al., 2012). Effective knowledge flow ensures that both tacit and explicit knowledge are circulated to the right people at the right time, supporting informed decision-making, innovation, and operational efficiency. In the knowledge-based organizations, particularly those with siloed structures, knowledge often becomes trapped within departments or retained solely by individuals, leading to redundancy and missed opportunities. A strategic taxonomy framework can mitigate this by mapping and visualizing knowledge trajectories from creation and storage to dissemination and reuse.

Fourth, the framework should emphasize role-based taxonomy development, allowing taxonomies to be tailored to the specific needs, responsibilities, and information behaviors of different user groups within an organization. In the context of special libraries, users such as researchers may require deep, subject-specific classifications that facilitate access to empirical studies, datasets, and scholarly discourse, while policy analysts may prioritize cross-disciplinary linkages, regulatory information, and strategic insights. Executives often seek synthesized, high-level summaries and decision-support resources, whereas technical staff might need access to granular technical documentation, procedural manuals, or system blueprints. By aligning taxonomy structures with these diverse roles, libraries can enhance knowledge discoverability, reduce search friction, and ensure that users can swiftly retrieve the most relevant and actionable knowledge. This user-centric approach increases the usability and relevance of knowledge systems, ultimately supporting organizational efficiency and informed decision-making (Oyedokun et al., 2018).

Fifth, the framework should embed dynamic and adaptive taxonomy logic, enabling taxonomies to evolve in response to the changing knowledge landscape and shifting organizational priorities. Unlike static classification systems, dynamic taxonomies incorporate mechanisms such as version control to track changes over time, ensuring transparency and traceability in how categories and terms are updated. Regular reviews by domain experts or taxonomy governance teams allow for the identification of outdated terms, redundant categories, or emerging knowledge domains that require integration. Furthermore, incorporating AI-assisted insights—such as natural language processing (NLP) and machine learning—can enhance the adaptability of taxonomies by analyzing usage patterns, user search behaviors, and content trends to suggest real-time refinements. For instance, frequently searched but uncategorized terms can be flagged for inclusion, while underutilized categories may be deprecated or merged. This adaptive approach not only maintains the relevance and accuracy of the taxonomy but also supports continuous knowledge improvement, ensuring that the system remains aligned with user needs and organizational knowledge strategies (Nakash, 2024).

Finally, the framework must recognize the strategic role of the special librarian as a knowledge intermediary. Librarians should be equipped with the skills and tools needed to manage taxonomies, conduct knowledge audits, and collaborate with stakeholders to ensure taxonomies reflect current realities and future directions.

Journal of Information System and Technology Management
EISSN: 0128-1666
JISTM
Volume 10 Issue 40 (September 2025) PP. 199-215
DOI: 10.35631/JISTM.1040014

Table 1: Summary of Key Insights from Literature on Corporate Taxonomy Mapping for Knowledge Asset Management

Key Area	Key Insight	Study / Author(s)
Importance of Corporate Taxonomy Mapping	Supports performance-driven knowledge management and standardizes terminology.	Nakash (2024)
Challenges of Implementing Corporate Taxonomy Mapping	AI-based auto-tagging and NLP present accuracy and contextual relevance challenges.	Nakash (2024)
Importance of Corporate Taxonomy Mapping	Facilitates systematic knowledge retrieval within KM systems.	Nakash (2024)
Contributions to Knowledge Discovery and Retrieval	Enhances discovery by linking knowledge to application, source, and owner.	Kudryavtsev et al. (2022)
Contributions to Knowledge Discovery and Retrieval	Librarians must manage and apply organizational knowledge assets effectively.	Oyedokun et al. (2018)
Components of a Conceptual Framework	Structural and contextual factors influence knowledge management practice in libraries.	Che Rusuli et al. (2012)
Components of a Conceptual Framework	The framework includes identification, mapping, and flow management of knowledge assets.	Schiuma (2010)
Importance of Corporate Taxonomy Mapping	Fundamental for organizing knowledge for reuse across the lifecycle.	Sharma et al. (2008)
Challenges of Implementing Corporate Taxonomy Mapping	Knowledge audits are needed to ensure alignment with organizational goals.	Sharma et al. (2008)

Source: The Author(s)

Table 1 summarizes key findings from the literature on corporate taxonomy mapping and its role in knowledge asset management (KAM), particularly within the context of special libraries. The reviewed studies highlight that taxonomy mapping is essential for enabling performance-driven KM through standardized terminology and improved retrieval systems (Nakash, 2024). Several works emphasize its strategic value in organizing knowledge for reuse across the knowledge lifecycle (Sharma et al., 2008) and enhancing knowledge discovery by connecting information with its source and context (Kudryavtsev et al., 2022). Despite these advantages, challenges persist, particularly in implementing dynamic taxonomy systems that integrate AI and NLP while maintaining contextual accuracy (Nakash, 2024). Moreover,

Journal of Information System and Technology Management
EISSN: 0128-1666
Volume 10 Issue 40 (September 2025) PP. 199-215
DOI: 10.35631/JISTM.1040014
maintaining relevance through knowledge audits is necessary to align taxonomies with evolving organizational needs (Sharma et al., 2008). The literature also identifies critical framework components, such as asset identification, classification, and librarian-led knowledge flow facilitation, as essential for successful taxonomy development (Schiuma, 2010; Che Rusuli et al., 2012; Oyedokun et al., 2018). Collectively, these studies provide a foundation for conceptualizing an adaptive taxonomy model tailored to the operational and strategic needs of Malaysian special libraries.

In conclusion, the literature affirms the strategic relevance of corporate taxonomy mapping as a foundational element of knowledge asset management (KAM), particularly within the specialized context of Malaysian knowledge-based organizations and their special libraries. While the development of taxonomy systems offers significant advantages in standardizing terminology, facilitating knowledge discovery, and supporting organizational learning, their successful implementation is often hindered by technical, structural, and cultural challenges. Emerging studies underscore the need for dynamic, adaptable taxonomies that integrate both technological innovations—such as AI and NLP—and human expertise, particularly the role of librarians as knowledge facilitators. The reviewed literature collectively supports the formulation of a conceptual framework that integrates asset identification, taxonomy structuring, continuous maintenance, and librarian-led governance. This provides a solid theoretical foundation for addressing the unique demands of taxonomy implementation in special libraries and reinforces their evolving role as strategic enablers of knowledge-driven performance in Malaysian KBOs.

Methodology

This study adopts a conceptual research methodology, grounded in qualitative analysis and informed by an integrative literature synthesis. The primary aim is to develop a conceptual framework for corporate taxonomy mapping that is tailored specifically to the operational, informational, and strategic needs of special libraries within Malaysian knowledge-based organizations (KBOs). Given the exploratory nature of the research and the abstract nature of the constructs being studied, a qualitative approach is appropriate for generating theoretical insights rather than empirically testing hypotheses.

The methodology is structured around Jabareen's (2009) Conceptual Framework Analysis (CFA), which is particularly suitable for organizing and synthesizing abstract concepts into a coherent theoretical model. This method involves eight iterative phases: mapping selected data sources, extensive reading and categorization, identifying key concepts, deconstructing and categorizing core components, integrating concepts, synthesizing the framework, validating against theory and context, and rethinking the framework. This process allows for the rigorous integration of diverse scholarly perspectives related to knowledge asset management (KAM), taxonomy theory, information science, and special library functions.

To support the framework's development, a comprehensive literature review was conducted using Scopus as the primary database. Articles were selected based on relevance to four thematic areas: (1) the strategic importance of taxonomy in KAM, (2) technological and organizational challenges in taxonomy implementation, (3) the evolving role of special libraries in knowledge governance, and (4) the design and application of dynamic taxonomies in digital ecosystems. Only peer-reviewed journal articles, conference proceedings, and book chapters published between 2008 and 2025 were included to ensure both theoretical depth and

Journal of Information System and Technology Management
EISSN: 0128-1666
Volume 10 Issue 40 (September 2025) PP. 199-215
DOI: 10.35631/JISTM.1040014

contemporary relevance. Key search terms included "corporate taxonomy," "knowledge asset management," "special libraries," "knowledge mapping," and "Malaysian knowledge-based organizations."

The supporting objective to identify taxonomy components that effectively capture diverse knowledge types that are both tacit and explicit has been addressed through content analysis of literature on knowledge typologies, classification systems, and metadata standards in library science and knowledge management. Relevant frameworks, such as Nonaka's SECI model, the knowledge ecosystem model (da Silva et al., 2025), and dynamic taxonomy theory (Li & Tsai, 2009), were deconstructed and recontextualized within the domain of special libraries.

To propose sustainable strategies for dynamic taxonomy structures, the study drew upon technological trends in artificial intelligence (AI), natural language processing (NLP), and data governance practices in libraries. Sources addressing ontology design, taxonomy lifecycle management, and automated classification systems were synthesized to inform the adaptability and maintenance components of the framework. These insights are crucial for ensuring that the taxonomy evolves with changing organizational knowledge needs and technological capabilities.

Lastly, the strategic role of special librarians in taxonomy mapping was clarified through analysis of empirical studies on librarianship competencies, digital transformation, and knowledge stewardship (Oyedokun et al., 2018; Che Rusuli et al., 2012). This included examining how librarians facilitate knowledge flows, engage with metadata structures, and act as intermediaries between technology systems and end-users. These findings were then mapped onto specific roles within the proposed conceptual framework to ensure the model is both theoretically sound and operationally actionable in the Malaysian special library context.

In sum, this methodological approach integrates theory-building with practical relevance. By applying a structured conceptual analysis and drawing from Scopus-indexed sources, the study ensures that the resulting framework is grounded in validated research while addressing a clearly defined gap in the field of knowledge management and library science.

Conceptual Framework

His study proposes a conceptual framework for corporate taxonomy mapping tailored to the specific needs of special libraries within Malaysian knowledge-based organizations (KBOs). The framework is built on four core components: (1) identification of knowledge assets, (2) taxonomy structuring and classification, (3) dynamic taxonomy maintenance, and (4) the role of special librarians in facilitating knowledge flows. These components are informed by a synthesis of knowledge management (KM) theory, taxonomy development, and the evolving role of special libraries in institutional knowledge ecosystems.

The first component, Identification of Knowledge Assets, highlights the need to systematically capture both tacit and explicit knowledge embedded in organizational processes, documents, and human expertise. According to Schiuma (2010), identifying and measuring these knowledge assets is critical for maximizing value creation and enabling long-term reuse. In the context of special libraries, this entails mapping internal expertise, curated collections, grey literature, and institutional reports to strategic objectives.

Journal of Information System and Technology Management
EISSN: 0128-1666
Volume 10 Issue 40 (September 2025) PP. 199-215
DOI: 10.35631/JISTM.1040014

Second, the Taxonomy Structuring and Classification component focuses on developing controlled vocabularies, faceted classification systems, and metadata standards that reflect organizational terminology and user behavior. This aligns with the insights of Kudryavtsev et al. (2022), who emphasize that taxonomies must be semantically rich and structurally adaptable to accommodate evolving knowledge domains. Additionally, Sharma et al. (2008) advocate for taxonomy development grounded in knowledge audits to ensure organizational alignment and relevance.

Third, Dynamic Taxonomy Maintenance addresses the challenge of keeping classification structures up to date in rapidly changing environments. Incorporating AI and Natural Language Processing (NLP) techniques allows taxonomies to evolve with content trends, user interactions, and organizational needs (Li & Tsai, 2009; Nakash, 2024). Routine knowledge audits further ensure taxonomy systems remain contextually accurate and strategically aligned. Fourth, the Role of Special Librarians in Knowledge Asset Management (KAM) is a central pillar of the framework. Librarians are not merely information custodians but taxonomy stewards and KM facilitators. Their involvement in user needs analysis, metadata design, and taxonomy governance ensures knowledge flows are accessible, contextualized, and actionable (Oyedokun et al., 2018). Che Rusuli et al. (2012) note that in Malaysian universities, librarians already play a critical role in KM practices—this framework formalizes that role in taxonomy mapping initiatives.

These four components are validated and reinforced by the conceptual map generated using Scopus AI, which provides a multi-dimensional perspective of corporate taxonomy mapping. As illustrated in the diagram, *Corporate Taxonomy Mapping* connects to three thematic clusters:

Sustainable Performance, encompassing *Sustainable Development*, *Competition*, *Environmental Factors*, and the *Roles of Librarians*, demonstrates taxonomy's impact on institutional agility and long-term resilience (Schiuma, 2010).

Taxonomy Development, which includes *Dynamic Taxonomies* and *Controlled Vocabulary*, aligns with the need for both flexibility and standardization in classification systems (Sharma et al., 2008; Nakash, 2024).

Knowledge Management, branching into *Knowledge Management Systems* and *Knowledge Asset Management*, affirming that taxonomy is a foundational enabler of knowledge discovery, retention, and reuse (Che Rusuli et al., 2012; Kudryavtsev et al., 2022).

By synthesizing these elements into a single framework, the study provides a structured yet adaptable model for implementing taxonomy mapping in special libraries. It recognizes taxonomy as not just a classification tool but a strategic mechanism for enhancing sustainable knowledge ecosystems in Malaysian KBOs. This integration of librarian expertise, dynamic systems, and structured knowledge representation is key to ensuring that libraries serve as central actors in knowledge-intensive environments.

Journal of Information System and Technology Management
JISTM
EISSN: 0128-1666
Volume 10 Issue 40 (September 2025) PP. 199-215
DOI: 10.35631/JISTM.1040014

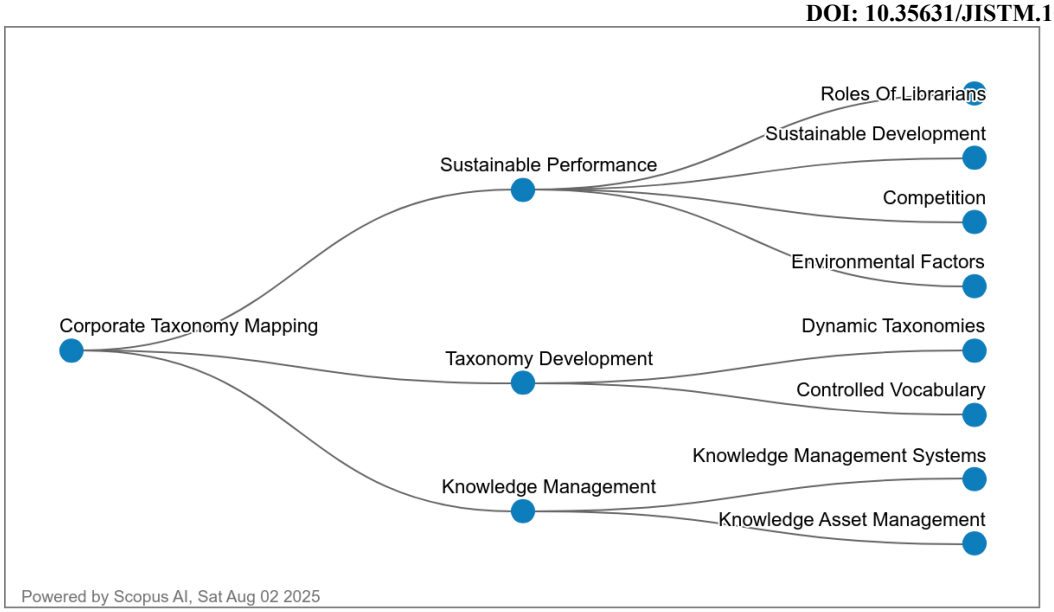

Figure 1: Conceptual Linkages of Corporate Taxonomy Mapping in the Context of Knowledge Management and Sustainable Performance

Source: Powered by Scopus AI, Sat Aug 02, 2025

The proposed conceptual framework offers a comprehensive and context-sensitive approach to corporate taxonomy mapping for knowledge asset management (KAM) in Malaysian special libraries. By integrating four core components, which are knowledge asset identification, taxonomy structuring, dynamic maintenance, and the strategic role of special librarians, the framework addresses both the technical and human dimensions of effective taxonomy implementation. It emphasizes the importance of aligning taxonomic systems with institutional goals, user needs, and evolving knowledge environments. The integration of AI and NLP for adaptive classification, coupled with librarian-led governance, positions special libraries as strategic enablers of organizational intelligence. This framework not only fills a critical gap in the literature but also provides a practical foundation for designing sustainable, user-driven knowledge ecosystems in Malaysia's knowledge-based organizations.

Conclusion and Recommendations

This study contributes to the evolving discourse on knowledge asset management by proposing a conceptual framework for corporate taxonomy mapping tailored to the operational and strategic context of Malaysian knowledge-based organizations. The framework underscores the critical role that taxonomy plays in enabling sustainable, performance-driven knowledge management by providing a structured approach to capturing, organizing, and accessing both tacit and explicit knowledge. It also addresses the urgent need for dynamic, adaptive systems that respond to evolving information flows and user needs, particularly within specialized information environments such as special libraries.

The framework offers several key contributions. First, it conceptualizes corporate taxonomy mapping not merely as a technical activity, but as a strategic knowledge governance process that integrates information architecture, metadata design, artificial intelligence (AI), and librarian-led stewardship. Second, it provides a structured yet flexible model that organizations can adopt and customize according to their domain-specific requirements. By incorporating

Journal of Information System and Technology Management
JISTM
EISSN: 0128-1666
Volume 10 Issue 40 (September 2025) PP. 199-215
DOI: 10.35631/JISTM.1040014
components such as dynamic taxonomy maintenance and role-based knowledge mapping, the framework supports continuous improvement and knowledge lifecycle alignment.

For Malaysian knowledge-based organizations, the adoption of this framework can strengthen institutional capacity to manage intellectual capital, facilitate cross-functional collaboration, and support informed decision-making. It can also enhance the traceability and auditability of knowledge assets that are essential in sectors such as education, government, and R&D, where regulatory compliance, institutional memory, and innovation are key priorities.

Equally important is the framework's emphasis on the evolving role of special libraries. Traditionally viewed as information repositories, special libraries are repositioned within this framework as active enablers of knowledge strategy. Special librarians, through their expertise in taxonomy design and metadata curation, serve as knowledge brokers who connect people, processes, and content. Their role in taxonomy mapping not only supports internal knowledge discovery but also contributes to the organization's long-term competitiveness and adaptability in a knowledge-driven economy.

Considering these findings, it is recommended that Malaysian KBOs invest in the development and institutionalization of taxonomy mapping practices, with special libraries serving as key implementation hubs. Training programs, cross-functional KM initiatives, and collaborative platforms should be established to empower librarians and KM professionals to co-develop taxonomy systems that reflect organizational priorities and user needs. Future research may validate and refine this conceptual framework through empirical studies across different sectors, ultimately advancing the knowledge management capabilities of Malaysian institutions.

Acknowledgements
The authors would like to express their sincere gratitude to Universiti Teknologi MARA Cadangan Kedah for the generous funding provided under the Tabung Penyelidikan Am. This support was crucial in facilitating the research and ensuring the successful publication of this article.

References
Bakry, F. M. (2023). Knowledge Management: Theoretical Considerations for High-Technology SMEs in Malaysia. SpringerBriefs in Applied Sciences and Technology.
Che Rusuli, M. S., Tasmin, R., & Takala, J. (2012). The impact of the structural approach on knowledge management practice (KMP) at Malaysian university libraries. *Australian Journal of Basic and Applied Sciences, 6*(8), 92–99.
Cheng, Y. Y., & Xia, Y. (2023). A systematic review of methods for aligning, mapping, merging taxonomies in information sciences. *Journal of Documentation*, *79*(6), 1413-1439.
da Silva, G. S., Ulbricht, V. R., & Gonçalves, A. L. (2025). A conceptual model for mapping an organizational knowledge ecosystem. Communications in Computer and Information Science.
Dalkir, K. (2017). *Knowledge management in theory and practice* (3rd ed.). MIT Press.
Garshol, L. M. (2004). Metadata? Thesauri? Taxonomies? Topic maps! Making sense of it all. *Journal of Information Science, 30*(4), 378–391. https://doi.org/10.1177/0165551504045856

Journal of Information System and Technology Management
EISSN: 0128-1666
JISTM
Volume 10 Issue 40 (September 2025) PP. 199-215
DOI: 10.35631/JISTM.1040014
Hedden, H. (2020). *The accidental taxonomist* (2nd ed.). Information Today, Inc.

Gilchrist, A. (2016). *Information organization and access: Theory and practice*. Facet Publishing.

Kamaluddin, A., & Rahman, R. A. (2013). The intellectual capital model: The resource-based theory application. International Journal of Learning and Intellectual Capital, 10(3), 249–267.

Kudryavtsev, D., Gavrilova, T., Grinberg, E., & Kubelskiy, M. (2022). Map of the maps: Conceptualization of the knowledge maps. *CEUR Workshop Proceedings*.

Kumar, P. S. (2016). Role of Library and Information Science Professionals in the Knowledge Society. *Journal of Information*, *2*(2), 10-17.

Lambe, P. (2019). *Organising knowledge: Taxonomies, knowledge and organisational effectiveness* (2nd ed.). Chandos Publishing.

Li, S.-T., & Tsai, M.-H. (2009). A dynamic taxonomy for managing knowledge assets. Technovation, 29(4), 267–276.

Li, S.-T., Tsai, M.-H., & Lin, C. (2010). Building a taxonomy of a firm's knowledge assets: A perspective of durability and profitability. Journal of Information Science, 36(1), 64–85.

Moradi, R., Taheri, K., & Mirian, M. S. (2017). Data-driven methods to create knowledge maps for decision-making in academic contexts. *Journal of Information and Knowledge Management*, 16(4).

Nakash, M. (2024). Corporate taxonomy mapping for performance-supporting KM. *Proceedings of the European Conference on Knowledge Management (ECKM)*.

Nickerson, R. C., & Varshney, U. (2016). Taxonomy development in information systems: Developing a taxonomy of mobile applications. *European Journal of Information Systems, 25*(1), 47–67. https://doi.org/10.1057/ejis.2014.26

Oyedokun, T. T., Laaro, M. D., Oyewumi, F. A., & Akanbi, M. L. (2018). Assessment of knowledge management competencies of library and information science professionals in Nigeria. Library Philosophy and Practice.

Schiuma, G. (2010). Managing and measuring knowledge assets dynamics for business value creation in organisations. In Managing Knowledge Assets and Business Value Creation in Organizations: Measures and Dynamics (pp. 1–20).

Sharma, R. S., Foo, S., & Morales-Arroyo, M. (2008). Developing corporate taxonomies for knowledge auditability: A framework for good practices. Knowledge Organization, 35(2), 78–86.