Developing the Knowledge Management System Framework in National Company: A Case Study of XYZ Company in Indonesia

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ABSTRACT

The Knowledge Management Application facilitates a medium for knowledge exchange, Its skills facilitate the acquisition of individuals' experiences and knowledge. Knowledge management tools are essential in large corporations, especially in enterprise organizations (private companies), in facilitating the retention and effective communication of pertinent information among staff members. Private enterprises often own substantial data and information in perpetually updatable formats that can be effectively leveraged to enhance the organization's knowledge and operational operations. Nevertheless, recent studies have revealed that knowledge management (KM) is still in its nascent phase for most private enterprises in Indonesia. The performed work investigated the existing Key Management Activities in a private company in Indonesia, with a specific focus on XYZ Company as the case study. Ac-cording to the evaluation, XYZ Company has not yet started constructing a specific Knowledge Management System (KMS), despite putting significant effort into developing core application systems to cover important business activities. Thus, the work introduces the structure for the growth of KMA in the organization.

1. INTRODUCTION

In today's environment, knowledge is a highly valued asset that significantly influences an organization's competitive advantage. Local and multinational organ-isations in the business industry have made efforts to transfer knowledge from tangible to intangible [1]. This has resulted in the emergence of a field of study referred to as Knowledge Management, commonly abbreviated as KM. Knowledge management as defined by [2], is a systematic process that enables businesses to identify, choose, structure, and distribute critical knowledge, which is essential for effective strategic planning and decision-making. Hence, Knowledge Management (KM) plays a crucial role in organizations by ensuring that the appropriate knowledge is imparted to the correct individual at the appropriate moment [3]. This facilitates effective decision-making, efficient work processes, and other relevant business transactions. Timely acquisition of accurate information will undoubtedly contribute significantly to enhancing workforce performance inside their respective firms [4]. Furthermore, with the emergence of technology, the Internet plays a crucial role in facilitating communication at any time and any place, thereby fostering the idea of a world without borders [5]. As a result, business organizations and enterprises are today facing significant market exposure and intense competition from their competitors [6]. Hence, it is crucial for the business to effectively utilize, manage, and innovate both new and existing information in order to remain competitive with other organizations [7]. Therefore, Knowledge Management Application (KMA) plays a crucial role in ensuring that these goals are accomplished [8].

The repercussions of knowledge management impacted corporate organizations, and research has been conducted to ensure the application of theoretical concepts, methodologies, and implementation within the industry [1]. However, the consequences were not adequately enforced in private companies, especially in Indonesia. Although research on KM has been undertaken in a private company, the implementation of KM is still necessary and has not yet occurred [9]. According to the analysis, only a small number of private companies have started using the KMS, while most have not yet begun or focused their efforts on promoting KM in their regular business activities[9]. Thus, this study aims to evaluate the implementation of knowledge management applications in a private company in Indonesia, with a specific focus on the XYZ company. The XYZ Company was chosen directly for its status as one of the oldest and largest companies in Indonesia. The use of Knowledge Management (KM) will undoubtedly benefit PT. XYZ in accomplishing its purpose of fostering innovation and cultivating opportunities.

2. LITERATURE REVIEW

Knowledge management assists organizations in comprehending their knowledge, being cognizant of their knowledge, and utilizing it efficiently [10]. Knowledge management is defined as a system that provides an organization with the essential foundation to deliver pertinent information, validate existing knowledge, and efficiently employ it in the decision-making process. [11]. Despite the existence of an understanding of knowledge management (KM), The application design of Knowledge Management is still nascent, as the utilization and implementation of new techniques vary depending on the organization. The organization's business processes, knowledge categories, communication procedures, human strategic planning, and other aspects are all crucial elements in the construction of a comprehensive Knowledge Management system for an organization. [12]. Hence, it is necessary to reassess the notion of knowledge and the current framework in order to establish the foundational study for the conducted work.

Knowledge can be categorized into two distinct types: tacit and explicit [13]. Tacit knowledge, as described by [14], denotes information retained in the human brain by experience, education, or practical engagement. This type of knowledge is highly unstructured and challenging to preserve [15]. Explicit knowledge, in contrast, refers to knowledge that is preserved in a mechanical or technological manner. This knowledge is typically retrieved or codified from the human brain and can take various forms such as handbooks, information systems, databases, internal newsletters, and documentation [14]. Several models exist that explain the relationship between tacit and explicit knowledge, but the most highly desired one is the literature derived from Nonaka and Takeuchi's work in [16]. Nonaka and Takeuchi (1995) introduced a conversion model to establish a framework for the development of knowledge management (KM) [15]. This model is depicted in Figure 1.

	Tacit	Explicit
Tacit	**Socialization**	**Externalization**
Explicit	**Internalization**	**Combination**

Figure 1. Nonaka and Takeuchi Conversion Model

Socialization is described as the process of generating knowledge through the interaction of two or more individuals who exchange their experiences [17]. This may transpire at an individual level or within a collective or organization. Conversely, the combinative mode entails synthesizing explicit knowledge from numerous external sources alongside existing explicit knowledge to produce new explicit knowledge [18]. Externalization refers to the transformation of tacit knowledge into explicit knowledge [19]. This procedure entails the documentation of tacit information via techniques such as transcription or digital recording. It is essential to translate this knowledge into comprehensible formats for others. Internalization refers to the process by which explicit knowledge is transformed into tacit knowledge and absorbed by an individual [20]. The possessor of tacit knowledge is competent to take action based on it [13].

Nevertheless, depending exclusively on the model for Knowledge Management System expansion is inadequate and unsuitable [21]. Additional elements, including individuals, culture, content, and technology, are as vital. This is considering individuals who represent the diverse range of knowledge users, including authors and analysts, contribute to the variation of knowledge. On the other hand, culture pertains to creating an environment where knowledge sharing is the norm. Therefore, it is essential to establish methods for measuring knowledge contributions, developments, and reuse [22]. Furthermore, the content encompasses the creation and administration of data, information, and knowledge, which are crucial factors in achieving success in a business. The technology part refers to the technical infrastructure that facilitates the acquisition, storage, and distribution of knowledge and content to meet the needs of users [23].

Therefore, a KM framework should include the aforementioned components since they serve as the foundation for KM success, which can help to initiate and enhance the organization's business operations and processes [24]. Several scholars [25] [26] Numerous KM frameworks have been developed, tailored to the knowledge management activities and processes of certain organizations. Emphasis was placed on diverse business operations including initiation, generation, modeling, storage, dissemination, transfer, utilization, and retrospective analysis of information [27]. The analysis conducted indicates that most of these frameworks can be categorized as either prescriptive, descriptive, or a hybrid of the two. A prescriptive framework is a structured approach that provides a technique and accompanying tools to facilitate the process of acquiring, disseminating, and accumulating information [28]. The prescriptive approach emphasizes the integration of four essential components: people, technology, culture, and content, inside the knowledge management framework. Nevertheless, this is inadequate, as indicated by [29]. The insufficiency of the prescriptive framework has resulted in the emergence of the descriptive framework.

Conversely, a descriptive framework emphasizes delineating the elements of a knowledge management strategy. Nonetheless, it lacks adequate physical implementation tools and the corresponding strategic component. The limited breadth of this framework necessitated the development of a new framework that integrates both prescriptive and descriptive components. This is demonstrated in several frameworks outlined in the subsequent section.

3. RESEARCH METHODS

The environment of the Private Company promotes knowledge sharing and double-loop learning. The Private Company possesses extensive information, data, and experience across academic and various other fields. The use of KMS or KMA will undoubtedly enhance the organization's standing and optimize daily business processes and transactions [27]. This is additionally supported by [9] They demonstrated that KM will present substantial opportunities in facilitating the Private Company function in the conducted research.

Limited studies have been undertaken by [25] and [6], in which a framework of KMA was offered for application by Private Companies. Farooq [1] established a framework for a collaborative environment, with five primary components: psychological, cultural, functional system, architectural system, and knowledge assessment. The four primary elements— infrastructure, collaboration, learning, and community—will facilitate the successful management of knowledge for each component. Lai and Chu [27] proposed a framework specifically designed for managing knowledge within Private Companies. The framework consists of the external environment and organizational planning. The acquisition of knowledge is significantly influenced by the external environment, which encompasses the social, globalization, and technological aspects. However, it is important to note that the nature of knowledge varies depending on the specific context. For example, social input refers to the attitudes, willingness, and behaviors of academia. The technical environment includes the most recent technologies that facilitate the dissemination and categorization of knowledge inside academia. The globalization environment integrates knowledge obtained via the learning process for the communication aspect of knowledge management.

The second component, strategic planning for the organization, is defining the vision, scope, and objectives of the knowledge management initiative according to the intended results of information dissemination and categorization. The approach used to capture this information involves both explicit and tacit knowledge. Nevertheless, after doing a thorough study, it is evident that the aforementioned frameworks are inadequate as they fail to incorporate the principles of system thinking and the value factors of both vertical and horizontal co-creation. Incorporating these components will unify individuals, their expertise, company culture, values, strategic objectives, and technology framework into a cohesive system. This will establish a system for double-loop learning, which is essential in the private company context. The newly described qualities will be incorporated into the framework developed for PT. XYZ, the case study employed in the research.

3.1 Case Study

PT. XYZ is renowned as a leading subsidiary company in Indonesia. It currently employs around 10,000 staff members in total. Given the vast quantity of data, it is crucial to create Knowledge Management Systems (KMS) or Knowledge Management Applications (KMA) to effectively collect and distribute knowledge for the improvement of business processes and efficient information dissemination.

Despite the existence of specific information system applications, including the staff information system and staff evaluation system, it was determined that the essential elements of knowledge management (KM) were inadequately incorporated into the business process. These variables lead to a lack of essential information, prolonged business process interactions, and the distribution of information or documents within the firm. The described predicaments would undoubtedly impede the organization's objective to become the leading company in Indonesia, where future prospects are inspired and possibilities are fostered.

3.2 Proposed KM Framework

The framework presented in this study adopts a distinct strategy by incorporating vertical and horizontal dimensions of company organization. The primary focus is on the vertical aspect of the KM system application design. This entails a comprehensive analysis of each specified element, encompassing social and managerial dimensions, infrastructure, technology, and organizational business processes. The horizontal aspect, conversely, underscores the principles of systems thinking, the importance of user co-creation, and the use of existing framework components throughout the organization. These elements will be horizontally cultivated at each of the verticals. Thus, when developing each vertical, the horizontal parts will be consistently incorporated to guarantee a comprehensive perspective and solution is obtained.

The key framework components, as previously mentioned, include:
- Social and management aspect
- Infrastructure aspect
- Technological aspect
- Organizational Business process aspect

The interplay between these components, along with the horizontal elements, will surely improve the organization's business and managerial operations. Nevertheless, the application of systems thinking will affect these components through economic and acceptance factors. Consequently, the entire system will be scrutinized to address the concerns. Strategic, financial, and managerial

factors will provide insights to tackle difficulties that may impede the effectiveness of the KM system application design. Figure 2 illustrates the correlation between the components, governing factors, and the resulting impact.

Knowledge Management System

	Social & Political	Infrastructure	Processes	Technology
Aspect	Social & Political	Infrastructure	Processes	Technology
Applications	Strategies Motivation Regulations	Network Repositories External resources license control	Acquire Share Reuse Store	Chat Brainstorm Online meetings Conference LMS
Factors	Economical		Acceptance	
Impact	Innovation	Efficiency	Productivity	Competency

Figure 2. KMS components and factors

The proposed framework, which employs both vertical and horizontal components, is further depicted in Figure 3.
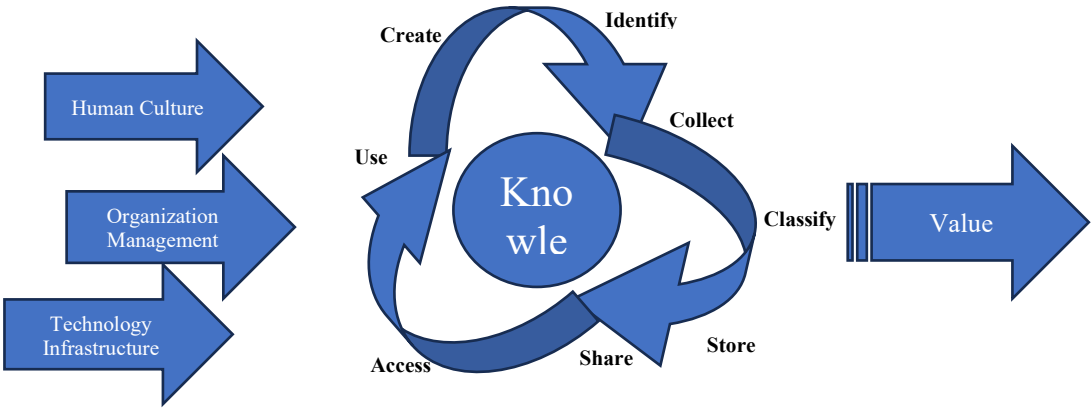

Figure 3. Proposed KM Framework

From the above figure, it can be inferred that when creating the KM system application in PT. XYZ, it is essential to adopt a comprehensive perspective utilizing a system thinking method. This is because there are already several existing system applications that are now being utilized. Therefore, it is necessary to focus on utilizing these systems and their repositories in order to prevent any unnecessary waste. Hence, it is necessary to thoroughly assess and examine the current technology, systems like XEROX DocuShare and eLearning Cresendos, as well as the existing infrastructure Furthermore, by incorporating the co-creation value of users, the system's values can be collaboratively generated by system designers, developers, management, and system users. This will enable users to collaboratively construct a distinctive experience with the esteemed individuals engaged in the system's development, including system designers, developers, and management. It will release fresh resources for system design,

hence offering opportunities for the business to gain a competitive edge. Moreover, the incorporation of co-creation value would improve system design, as a system is a product intended to produce engaging individual experiences..

4. CONCULUSSION

This study has presented a comprehensive knowledge management (KM) framework to be applied and used in a private organization or institution, specifically for PT. XYZ. Nevertheless, the framework's general approach and nature enable it to be implemented in any Private Company. The study was undertaken through interviews with the workers of PT. XYZ. The findings and evaluations indicated that the existing operational framework lacks significant impact on the idea of knowledge management (KM). Only a few apps have some characteristics of KM integrated into them. This served as a foundation for the ongoing work conducted.

The framework is utilized to facilitate the construction of a KM application system that efficiently manages company knowledge and provides significant benefits to the majority of staff members. The developed framework adopted a distinct approach in comparison to the conventional method. The system design process incorporates and integrates elements of both vertical and horizontal business aspects with careful consideration. This ensures that each component of the KM system will be developed using a systematic thinking methodology, utilizing the existing system while including the principles of user co-creation. These are known as the horizontal aspect. The new KM system will incorporate both vertical and horizontal aspects, offering essential and enhanced functions. This integration can be considered an innovative improvement to the previous KM architecture. To evaluate the appropriateness of the proposed framework for the community of practice, a prototype system will be created and deployed for future research.

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