Knowledge Management System for Handcrafted Reog Ponorogo Products

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Abstract: Reog is one of the distinctive cultural practices of Ponorogo. Typically, this art is performed in an open space with many entertainers. Reog Ponorogo enthusiasts will primarily purchase trinkets and handicrafts. Numerous artisans in Reog Ponorogo are members of Micro, Small, and Medium-Sized Enterprises (MSMEs). However, because of the global Covid-19 pandemic, Reog Ponorogo artisans have encountered numerous challenges, beginning with the procurement of raw materials, and continuing through the production process and marketing. This even put them out of business with the Reog artisans. A knowledge Management System (KMS) is one of the technologies that can be utilized to surmount the problem under these conditions. Knowledge Management System (KMS) is a centralized database utilized to organize, store, and disseminate organizational knowledge with employees and customers. In this study, the KMS was developed to assist MSME actors in acquiring information and knowledge concerning MSME Products in Reog Ponorogo Handicrafts. Currently, information about Reog Ponorogo is widely available in print and digital media, but it is not governed by a comprehensive information management system. Therefore, building KMS for Reog Ponorogo Handicraft MSMEs is still necessary. In this research, a modified variant of the Knowledge Management System Life Cycle (KMSLC) was used to develop the KMS. This research was conducted in multiple phases, including infrastructure evaluation, team formation, knowledge capture, and KMS design. This study contributes to the creation of a knowledge management system for MSME Reog Ponorogo artisans based on the life cycle of knowledge management systems. This study's findings serve as the basis for the Reog Ponorogo craft knowledge management system. Further research can concentrate on developing the Reog Ponorogo UMKM KMS on Android and iOS mobile phones, enhancing the KMS user interface, and granting both experts and UMKM administrative access to the KMS.

Keywords: Knowledge management system, Knowledge management system life cycle, Reog handicrafts, Ponorogo

1. Introduction

Reog Ponorogo A Meaningful Performance An ancient performance art that has withstood the test of time and possesses aesthetic as well as moral qualities (Indonesia Kaya, 2021). Reog Ponorogo is an ancient art form (Kartomi, 1976). Because art is ancient, there are numerous variations on the origins of Ponorogo reog. There are two widely used variations. The Wengker version is shown first. relates how Ki Ageng Kutu (Demang Suryongalam), a Majapahit Kingdom servant, established a hermitage in Wengker and produced reog art as mockery and opposition to King Brawijaya V. The Bantarangin variation is the second. It describes the marriage proposal made by Kelana Sewandana, the king of Bantarangin, to Dewi Sanggalangit, the daughter of Kediri. Making a new gamelan model and a person with a tiger head is one of the requirements for the application, according to Harsono (2019). Reog Obyog and Reog Festival are the two distinct varieties of Ponorogo reog that are now recognized. Reog obyog, who reside in rural areas, often perform in the yard or on the street without adhering to any standards. Typically, it fills up with festivities, cleans the village, and entertainment-only performances. Since 1997, the Ponorogo City Government has organized the yearly Reog Festival event, during

which the Reog Festival has undergone adjustments and is presented in accordance with standards (Kurnianto, 2017).

The Indonesian cultural art form of Reog Ponorogo has persisted to the present day. It is performed for public entertainment and as part of religious rites (Kristianto, 2019). It is no wonder that Reog Ponorogo has attracted attention at local, national, and international levels (Supariadi and Warto, 2015). The number of Ponorogo and non-Ponorogo tourists who wish to view the Reog show increases periodically. Micro, small, and medium-sized (MSME) business actors use these opportunities to sell Reog Ponorogo handicrafts (Masykur, Antarukmi and Risfaula, 2016.). However, Reog Ponorogo artisans have encountered numerous challenges related to the global Covid-19 pandemic, from sourcing raw materials to promoting their products (Sakti, 2020). These problems have even forced some Reog Ponorogo artisans out of business. In these conditions, technology plays an essential role. Knowledge management systems (KMS), which blend technology and the knowledge management process, could help (Becerra et, al, 2010).

Knowledge management is a process that helps businesses discover, select, organize, and disseminate knowledge that is vital for problem-solving, dynamic learning, and drawing conclusions (Ahmady, Nikooravesh and Mehrpour, 2016). Knowledge management can also be described as the implementation of an all-encompassing framework that fosters the expansion of organizational knowledge (Salisbury, 2003). This research (Gao, Chai and Liu, 2018) focuses on providing a comprehensive survey and analysis of the theory behind knowledge management. First, we summarized and analyzed the theoretical conceptions of Knowledge management, which include conception and stages; then, we examined some major approaches for designing the Knowledge management system from various vantage points, including knowledge representation and organization, knowledge sharing, and performance.

For example, knowledge and experience are sustainable resources and thus represent competitive advantages. Knowledge consists of tacit and explicit components (Retnoningsih and Khasanah, 2019; Kaawoan, Sentinuwo and Sambul, 2017). Consequently, it is necessary to develop a knowledge management system (KMS) capable of managing, combining, and integrating explicit and tacit knowledge management tasks (Kaya and Erkut, 2018). It is envisaged that this will enable small and medium businesses to discover answers to their difficulties (Retnoningsih and Khasanah, 2019). The paper (Chaithanapat et al., 2022) focuses on three key issues regarding the use of knowledge management systems. Initially, SMEs adopt and use more intensively traditional tools (KMTools) as opposed to newer, cheaper, and easier-to-use tools that are generally more updated. Second, SMEs implement and make greater use of practices (KM-Practices) that do not solely concentrate on the knowledge management process, but rather seek to adapt practices they are already familiar with to the knowledge management requirements. The paper concludes by highlighting the reciprocal relationship between KM-Tools and KM-Practices: one reinforces the other and vice versa. The paper proposes a taxonomy of SME strategies for utilizing KMSs. Four strategies are identified in particular: guidepost, explorer, exploiter, and latecomer.

From the background and problems of Reog Ponorogo artisans and MSME actors, this research applies KMS to help MSME actors gain knowledge and information about Reog handicraft products which are used to improve product quality and expand product marketing not only in offline stores but also online stores. Currently, many print and digital sources contain information about Reog Ponorogo, but there is no comprehensive system for maintaining this information. This research aims to develop KMS based on Knowledge Management System Life Cycle (KMSLC). Infrastructure Evaluation, Formation of KM Team, Capturing Knowledge, Development of KMS Blueprint, KMS Verification and Validation, KMS Implementation, and KMS Testing are incorporated in the research phase (Mathew, Salalah and Oman, 2011). This research provides a knowledge-based standard of Reog craft, which can be used to learn more about Reog craft.

2. Literature Review

The goal of (Retnoningsih and Khasanah, 2019) research is to improve the performance of government management of Bekasi city SMEs using the KMS (Knowledge Management System). The suggested framework can be used by DISKOP UMKM to manage tacit and explicit knowledge through the KMS system on mobile devices in Bekasi City. The KMS that was built is available for all MSME centers in Bekasi City with the aim of being a place to share and gain management knowledge to improve the quality and income of MSMEs in Bekasi City. This paper (Al-Alshaikh, Mirza and Alsalamah, 2020) This paper proposes a paradigm for defining and eliciting the tacit knowledge generated during the process of requirements elicitation. The model is founded on adopting and extending the rationale model for requirements rationale knowledge elicitation within the context

of requirements elicitation. In addition, this article presents a representation code for expressing the tacit knowledge in this context.

Knowledge is an asset for every individual, business, or corporation(L, Chen and Chen, 2009). Strong knowledge management helps companies progress, and the successful management of knowledge about the company's organization, sales, and others can also positively affect sales. Knowledge management is a process that helps businesses identify, select, organize, disseminate, and transfer crucial knowledge (Mathew, Salalah and Oman, 2011). Research (Cerchione and Esposito, 2017), This paper argues that small and medium-sized enterprises (SMEs) could enhance the impact of knowledge management (KM) by better exploiting the opportunities offered by new ICTs (such as cloud computing, crowdsourcing systems, collaborative filtering, and wiki). This paper emphasizes, from the perspective of KMS providers, that SMEs typically lack the resources necessary to monitor the innovation process in the field of KMSs. Nonetheless, they may represent a substantial market. To capitalize on this opportunity, it is necessary to establish not only a new market segment dedicated to SMEs, but also direct (even virtual) communication channels between SMEs and KM providers.

Many businesses have utilized KMS Knowledge Management System (He, Qiao and Wei, 2009). An organization can manage knowledge by managing its human resources or company resources (Widayanti, 2007). Therefore, knowledge is significant for any organization or company and will determine its continuity if managed effectively. Prior studies have highlighted the significance of knowledge in organizations regarding the exchange of information and innovation that advances the company. Knowledge in organizations and businesses can be divided into four categories: normative, problem-solving, decision-making, and information technology utilization. A minor study (El Said, 2015) was conducted to assess the effect of employee intention to share knowledge on the utilization of KMS and found that a lack of contribution from registered users is a failure factor for KMS. In general, researchers evaluate KMS based on the frequency of their usage, ignoring the impact of the system on employee performance even though this influences the system's long-term success. This paper contributes to KMS research by extending Task Technology Fit (TTF). This model is widely used for analyzing KMS, to investigate the impact of the sharing of knowledge constructs on KMS performance. This paper has scholarly and practical consequences for KMS researchers, developers, and administrators.

In 2008, Research on Knowledge Management System Development performed a study on KMS which investigated the function and impact of Information Technology on the deployment of KMS within an organization. The study also examined how KMS can be made more effective and efficient through appropriate information technology (Tseng, 2008). A 2017 study focused on the dissemination and intensity of KMS use among small and medium-sized enterprises (SMEs). This study also presents a taxonomy for combining techniques for using KMS in SMEs (Cerchione and Esposito, 2017). A company engaged in web-based retail implemented KMS in 2018 to use it as a platform to share knowledge with its employees to improve their performance (Sutrisna, 2018). In 2019, a web-based KMS was developed in the education sector to document all teaching-related knowledge so that it can be exploited by young teachers and their students (Octaria, Ermatita and Sukemi, 2019).

Another KMS was created in the realm of education in 2021. This KMS offers instructional material on one university's web-based faculty to enhance the performance of education workers (Anardani, Riyanto and Setiawan, 2021). According to research by (Saleem, Ameen and Ashiq, 2021), each person adopts different attitudes and performs different actions when seeking, locating, storing, and organizing knowledge, and every person's capacity and skill in memorization are also different. The study examined how research students in a life science discipline practice PKIM by focusing on five aspects: knowledge collection, organization, selection, sharing, and creation.

To combine the benefits of the two paradigms, (Jung, Choi and Song, 2007) suggest an architecture to connect knowledge management systems (KMS) with business process management systems (BPMS). The architecture, which is comprehensive because it is derived from extended life cycle requirements, will serve as the foundation for the research and development of process oriented KMS (Hartati and Hikmah, 2021). The paper first defines process knowledge and divides it into three categories. It then discusses how current KMS and BPMS capabilities could be extended to serve the three categories of process knowledge while meeting the knowledge and business process life cycle requirements. A prototype KMS is provided to illustrate that the proposed design is feasible.

In Research (Tejamaya et al., 2021) In order to develop a model of an occupational safety and health management system (OSHMS) for micro, small, and medium-sized enterprises (MSMEs) in Indonesia, the purpose of this review is to identify the most important factors associated with the implementation of such a

system in MSMEs. Methods: This systematic review is an exploratory study using a combination of two keywords that refer to the population and exposure variables in the PROSPERO Approach using the "AND" strategy to search multiple online databases. Each piece of literature is selected based on the PRISMA flowchart. For the assessment of the risk of bias, a Critical Appraisal Skill Programme (CASP) check list was utilized.

this paper (Peng, Jiang and Zhang, 2013) Designed and implemented a knowledge management system (KMS-THU) to facilitate knowledge service for Tsinghua's web-based learning platform, THU-WS. KMS-THU emphasizes on knowledge administration by individuals and summarizes unique knowledge services for courses. With campus cloud service and various mobile clients, it optimizes the learning experience with a ubiquitous learning style. In addition to illustrating the design of a knowledge service and the framework of a KMS for web-based learning, this paper presents the implementation details for KMS-THU.

3. Research Methods

The Knowledge Management System (KMS) Reog Ponorogo was developed using a modified version of the Knowledge Management System Life Cycle (KMSLC) concept which consists of 7 stages of system development from (Evans, Dalkir and Bidian, 1993;Widayanti, 2008; Shalihati, 2021). As shown in Figure 1, this research was conducted in several stages: Infrastructure Evaluation, form a team, Capture Knowledge, Designing the KMS Reog Ponorogo and Knowledge verification and validation.
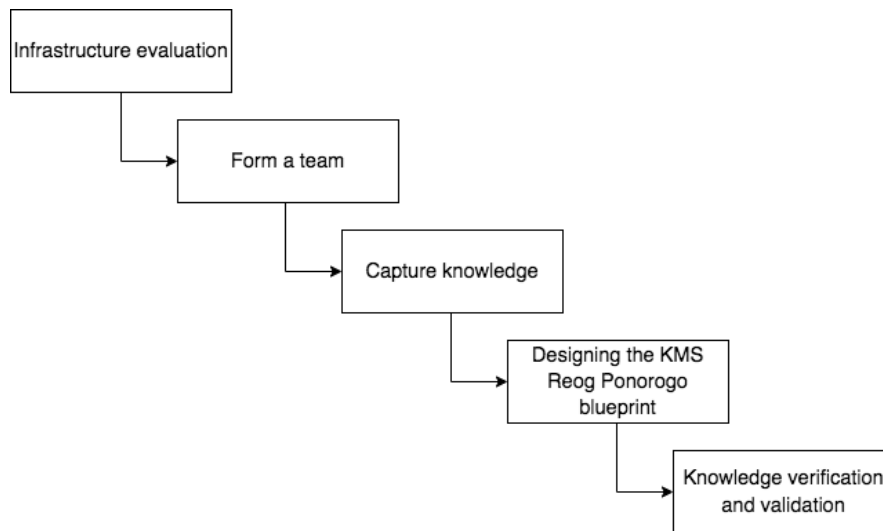

Figure 1: Stages of the Reog Ponorogo KMS Research

3.1 Infrastructure Evaluation

The Integrated Software Engineering Lab, Faculty of Engineering, Universitas Muhammadiyah Ponorogo, served as a point of reference for infrastructure evaluation in the development of the Reog Ponorogo KMS. The infrastructure evaluation for the Reog Ponorogo KMS comprised 6 components: hardware, software, netware, brainware, dataware, and process. Table 1 displays the results of the infrastructure evaluation.

Table 1: Infrastructure Evaluation Results

No.	Infrastructure	Evaluation
1.	Hardware	Computer devices with the necessary capacities and specifications.
2.	Software	Software that supports the development of the Reog Ponorogo KMS, such as VSCode, XAMPP, and Browser.
3.	Netware	Access the Internet at speeds above 100 Mbps.
4.	Brainware	Experts in the field of computers and management.
5.	Dataware	Data were obtained from direct experts, such as Reog Ponorogo craftsmen and anthropologists, and from reference sources such as books, journals, and so on.
6.	Process	The data is taken from the results of interviews and from several references. Experts validate data results from references.

3.2 Form a Team

The team was adapted to each member's area of competence. The KMS team was composed of a research team of three people, two experts, one analyst, a team of software developers, and one assistant for data administration in the field.

The team was composed of members with a variety of skills, including researchers in KMS information technology, reog ponorogo campaigners and historians, artisans, and merchants of reog ponorogo goods.

3.3 Capture Knowledge

Capturing knowledge begins with knowledge acquisition, followed by knowledge storage. The knowledge map is shown in Figure 2 result of the knowledge capture stage. Knowledge was acquired by conducting interviews (Sadiah and Gasbara, 2021). Experts, mainly Reog Ponorogo artisans who are members of Reog Ponorogo craft SMEs, were interviewed.
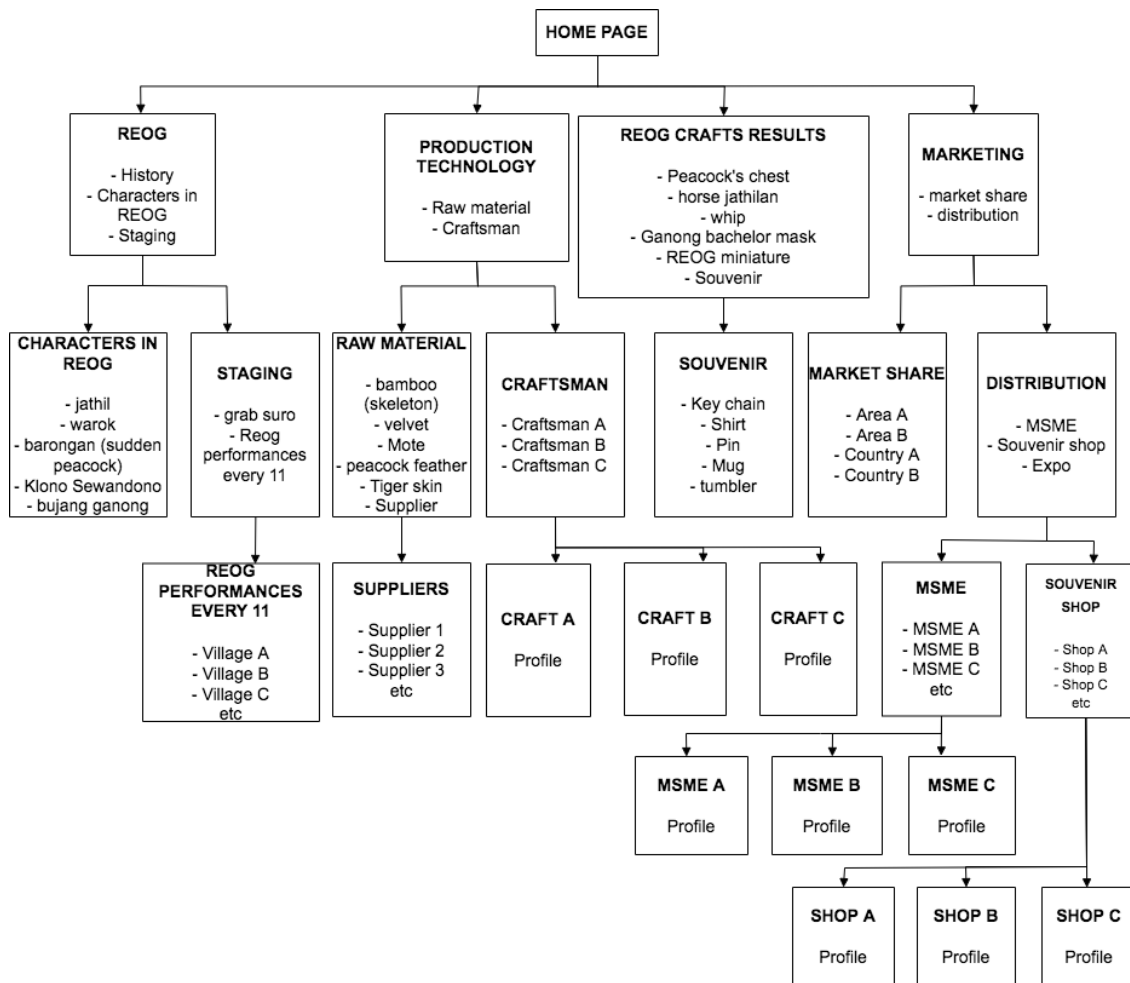

Figure 2: Knowledge map of Reog Ponorogo

3.4 Designing the KMS Reog Ponorogo Blueprint

The next step in this research is to create a blueprint for KMS Reog Ponorogo, a web-based system. The findings of literature reviews and conversations with Reog Ponorogo art specialists, artisans, and vendors of Reog Ponorogo crafts were used to create the KMS Reog Ponorogo blueprint.

3.5 Knowledge Verification and Validation

The outcomes of the creation of the KMS Reog Ponorogo blueprint were then validated and verified by KMS specialists. Reog Ponorogo specialists, Reog Ponorogo artisans, information technology professionals, activist students, and Reog Ponorogo lovers participated in a forum group discussion (FGD) to verify and validate the KMS Reog blueprint that was constructed.

4. The Knowledge Management System (KMS) Reog Ponorogo Blueprint Results

Knowledge Management (Clemente and Domingues, 2023) is crucial to the successful execution of undertakings. Due to the transient nature of projects and the teams that participate in them, the transfer, integration, and management of knowledge between projects is essential for promoting the sharing of best practices and preventing the repetition of past errors, thereby increasing the likelihood of success for both the projects and the organization. The purpose (Wimpertiwi et al., 2022) The purpose of this paper is to maximize university community service activities. This activity will produce an application that can be utilized by SMEs and the community. To create blueprints, there are design document templates: Idea Specifications, Standard Course Features, Design Strategies, Media Standards, and Team Management, with Observation, Literature studies, and Documentation as the approaches. This research (Idrees, Haider and Tehseen, 2023) The purpose of this paper is to demonstrate that knowledge management is integral to business strategy and can result in more effective new product development in high-tech companies. As businesses have realized the importance of managing knowledge to remain competitive in their respective markets, they have placed a greater emphasis on knowledge management methods. Knowledge Management (KM) is accountable for an organization's productivity, effectiveness, and creativity.

The Reog Ponorogo KMS was created in the context of industrial technology. As indicated in Figure 2, production technology is divided into numerous submenus, including raw materials, raw material providers, and artisans. In the Reog Ponorogo Knowledge map, a map of knowledge pertaining to Reog Ponorogo can be viewed; this knowledge map was collected through interviews with experts, mainly craftspeople. The compiled knowledge map describes all aspects of Reog Ponorogo, beginning with the history and figures of Reog Ponorogo as well as the schedule for the staging of Reog, followed by production technology, which includes the raw materials and craftsmen involved in Reog Ponorogo, the results of Reog Ponorogo crafts in the form of Reog Ponorogo souvenirs, and finally, the marketing section, which includes market research.

An Information Architecture IA-based system implementation plan for the Reog Ponorogo MSME KMS was designed based on the knowledge map. This system was designed using the PHP-MySQL programming language and includes a responsive display, which means that the Reog Ponorogo MSME KMS website will dynamically adapt to the different screen sizes of smartphones, tablets, laptops, and desktop computers. Figure 3 depicts the outcomes of the implementation of the Reog Ponorogo MSME KMS design plan.
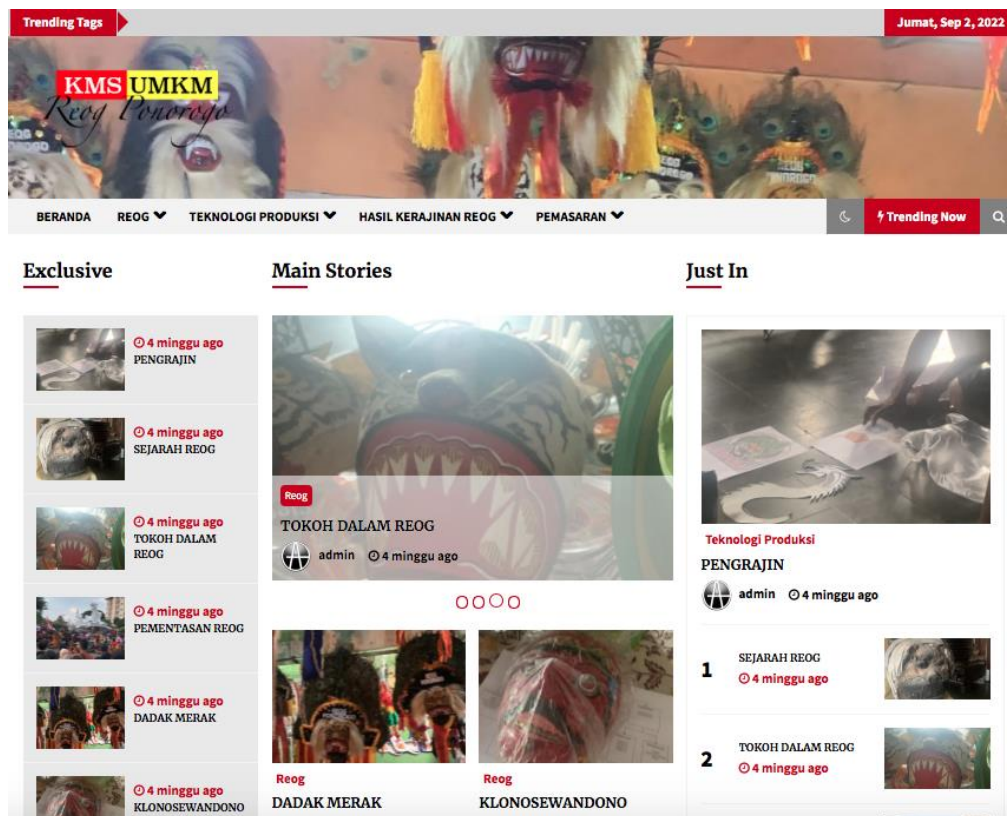

Figure 3: The Interface of the Implementation of the KMS Blueprint

As shown in Figure 3, the Navigation Bar menu is the primary menu in the Reog Ponorogo MSME KMS template. It contains the home menu and sections on Reog, Production Technology, Reog Crafts, and Marketing. These menus are the primary menus in the KMS, since they provide the foundation of the knowledge map of the Reog Ponorogo MSME KMS.

The KMS menu is designed according to the Reog Ponorogo knowledge map. The Reog menu contains submenus for Reog Ponorogo History, Characters in Reog Ponorogo and a Reog Ponorogo Performance Schedule; the schedule for Reog Ponorogo performances can be obtained from the tourism office and the Reog Ponorogo Foundation.

The Production Technology menu contains the Raw Materials and Craftsmen submenus. The links in the Raw Materials submenu describe the raw materials necessary for making the characters in Reog Ponorogo, and in the Craftsmen submenu, they provide a profile of Reog Ponorogo craftsmen.

The third menu in the KMS MSME blueprint for Reog Ponorogo crafts that was built is the Reog Crafts menu which contains the Reog Ponorogo Souvenirs submenu.

The final menu created for the KMS is the Marketing menu, which includes the Craft Market Share and Distribution submenus. The Craft Market Share submenu lists regions within and beyond Ponorogo from which people have ordered or purchased Reog Ponorogo souvenirs. The Distribution submenu describes the distribution of Reog Ponorogo merchandise and souvenirs, including in UMKM and the Reog Ponorogo souvenir shop in Ponorogo.

This research aimed to develop a KMS based on the KMSLC to help SMEs in Reog Ponorogo acquire information and knowledge about Reog Ponorogo handicraft products. Information on Reog Ponorogo is available in print and digital media, but it is not managed comprehensively. This research contributes by developing a blueprint for a Reog Ponorogo MSME KMS, based on the KMSLC, that moves information on Reog Ponorogo from upstream to downstream.

The Reog Ponorogo MSME KMS was developed using the KMSLC in five stages: infrastructure evaluation, the formation of a KMS Team, the collection of as much knowledge about Reog Ponorogo as possible, the design of a Reog Ponorogo KMS blueprint, and verification and validation of the collected knowledge.

Infrastructure Evaluation was the initial step in constructing the Reog Ponorogo KMS SME. The objective of the infrastructure evaluation was to establish the prerequisites for the development of the Reog Ponorogo MSME KMS. This research required six infrastructure components: hardware, software, netware, brainware, dataware, and process. All six elements were available for this research.

The second step was to build a KMS Team, the members of which were experts in creating knowledge maps and KMS designs. The team included the following members: a research team of three persons, two experts, one analyst, a team of software engineers, and an assistant for data administration in the field.

The third stage involved carefully and exhaustively locating the necessary materials for specific study topics and seeking out peers, colleagues, and professionals to benefit from their tacit knowledge. Respondents had a favorable view of sharing tacit knowledge. People generally value the experience, knowledge, insight, and skill of those with tacit knowledge through socializing and engagement in meetings and conversations.

The fourth stage of this research was to design the Reog Ponorogo MSME KMS blueprint based on the KMSLC and IA (Information Architecture). The KMS blueprint was built using the PHP-MySQL programming language, and a website with responsive and multi-platform display capabilities was created. The KMS blueprint website is compatible with all operating systems and mobile devices.

The fifth key stage of the Reog Ponorogo MSME KMS research was knowledge verification and validation: the Reog Ponorogo MSME KMS blueprint design outcomes were confirmed and certified by Reog Ponorogo KMS specialists.

The interface design of the KMS MSME Reog Ponorogo was made as user-friendly as possible based on the results of an examination of the production technology background. The incorporation of visuals within each piece of text makes the presentation more appealing and the content categories more recognizable. In addition, the responsive blueprint display of the Reog Ponorogo MSME KMS contributes to the user-friendliness of opening the website on a computer, laptop, tablet, or mobile device.

5. Analysis and Discussion

Infrastructure Evaluation is the first phase of this study; it reveals how prepared the hardware, software, Netware, Brainware, Dataware, and processes that were used to construct the Reog Ponorogo MSME Knowledge Management System (KMS) were.

The first part of the infrastructure that has been developed is the hardware, which consists of computers with capacities and specifications that are suitable for the KMS. The second piece of infrastructure that has been prepared is the software that has been placed on computers to aid in the construction of the Reog Ponorogo UMKM KMS. This software includes Visual Studio Code, Apache HTTP Server, and web browsers. The third kind of infrastructure is netware, which implies it has Internet connectivity at speeds greater than 100 Mbps. In addition to technological infrastructure, we have also developed the fourth infrastructure, Brainware, which consists of persons who are professionals in computer science and management. Dataware, the fifth infrastructure, is a device for storing research data collected from primary sources such as interviews with Reog Ponorogo artisans and cultural observers, as well as secondary sources such as books, journals, and encyclopedias. The process, the sixth infrastructure of Reog Ponorogo UMKM KMS study, is where the data gathering stage occurs, with information culled not just through interviews but also from a wide variety of sources. The KMS specialists will verify the accuracy of the reference data.

After the KMS infrastructure is ready, the next step we will take is Forming a KMS Team. The formation of the team is adjusted to the area of expertise of each member. In this study we formed a team consisting of 2 experts, 1 analyst, then 1 system developer team and 1 data management assistant in the field.

The next stage is that the team that has been formed carries out their respective tasks in the process of capturing the knowledge of the KMS UMKM Reog Ponorogo craft. In the process of acquiring knowledge in this study, the first stage was to collect and acquire knowledge, then proceed with storing knowledge in the KMS database. The acquisition process or getting the data is done by means of interviews. Interviews were conducted with experts including Reog Ponorogo craftsmen who are members of the Reog Ponorogo craft SMEs, the Cultural Arts Section of the Ponorogo Regency Tourism, Youth and Sports Culture Officeand Reog Ponorogo artists. The knowledge map in Figure 2 is the result of the stages of gathering knowledge.

The machine or human infrastructure for KMS already exists, the KMS team has been formed, then knowledge about KMS for UMKM Reog Ponorogo has been collected in the KMS database, the next process is to design a blueprint for KMS UMKM Reog Ponorogo. In this study the blueprint was built in the form of a website-based system, the website system was chosen because it is multi-platform, meaning that it cannot only run on one particular operating system. The results of the KMS UMKM Reog Ponorogo blueprint can be seen in Figure 3 above.

The final stage of the research that we carried out was Verification and validation of knowledge, this stage was carried out to verify and validate knowledge from the research stages that had been carried out previously starting from infrastructure preparation, team building, capturing knowledge to building a web based KMS Reog Ponorogo KMS blueprint. In this study, verification and validation of knowledge was carried out by interviewing and testing experts, including Reog Ponorogo craftsmen who are members of the Reog Ponorogo craft SMEs, the Cultural Arts Section of the Ponorogo Regency Tourism, Youth and Sports Culture Office and Reog Ponorogo artists.

The general validation test aims to test whether the Knowledge Management System (KMS) design for UMKM Reog Ponorogo is in accordance with the ongoing processes and can be used in UMKM Reog Ponorogo in Ponorogo. The validation test was carried out by conducting direct confirmation through interviews with Craftsmen and UMKM Reog Ponorogo Craftsmen, as well as the Cultural Arts Section of the Ponorogo Regency Tourism, Youth and Sports Culture Office. Based on the interview results, it was found that the knowledge about Reog Ponorogo and its crafts contained in the KMS Reog Ponorogo blueprint was in accordance with the reality in society, then the existing processes in designing the KMS UMKM Reog Ponorogo were aligned with the actual process currently This has been running in SMEs.

6. Conclusions and Further Research

Reog artisans encountered various challenges due to the global COVID-19 pandemic, beginning with the procurement of raw materials and continuing through the production and marketing stages. This has even driven some Reog artisans out of business. In these situations, technology is required; knowledge management systems are an example of how technology can help. Consequently, a knowledge management system is required. The

findings suggest that it is valuable for the Ponorogo tourism department, Micro, Small, and Medium Enterprises (MSMEs) owners, craftsmen, and Reog Ponorogo handicraft sellers to increase sales of Reog Ponorogo MSME products. Researchers can conduct more studies on Reog Ponorogo starting from its history and its original figures, to further confirm that Reog is the original culture of Ponorogo Indonesia. Also conducted research on the development of the condition of MSME craftsmen in Reog Ponorogo before and after the COVID-19 pandemic. Increased knowledge about all things related to Reog Ponorogo, starting from history, characters, staging schedules, raw materials for making Reog Ponorogo crafts, and so on. The Reog Ponorogo KMS (Knowledge Management System) was developed using a modified version of the Knowledge Management System Life Cycle (KMSLC) concept. This research was conducted in several stages: infrastructure evaluation, team formation, knowledge capture, and KMS design. This research has successfully developed a KMS production technology based on the IA (Information Architecture) concept and KMSLC methodology. The knowledge characteristics of Reog Ponorogo, Production Technology, Reog Crafts, and Marketing were developed during the system's growth. The KMS blueprint was developed using the expertise of Reog Ponorogo artisans. The results of the development of the KMS have been verified and validated by KMS experts. According to the experts, the KMS blueprint designed and constructed in this research contains all relevant information about Reog Ponorogo. It is consistent with the AI concept and the KMSLC approach. In addition, the KMS has the benefit of a responsive and user-friendly display. Further research could focus on developing the Reog Ponorogo MSME KMS on Android and iOS mobile phones, as well as developing the development of the user side of the KMS and providing access to KMS administration to both experts and MSMEs. The Reog Ponorogo MSME KMS is to provide upload permissions and post information on the Reog Ponorogo website.

Acknowledgements

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