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Implementation of Tiwana Method in a Knowldedge Management System Prototype

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ABSTRACT

Improving customer service really needs to be done by a company. one form of service improvement is to provide convenience to customers to submit financing applications that can be done anytime and anywhere. Knowledge management systems (KMSs) are tools aimed at supporting knowledge management. Utilization of Knowledge Management System (KMS) has a positive impact on the continuity of the organization's business, this happens because KMS is an effective way to translate work experience on an ongoing basis in the form of knowledge. The tiwana framework was chosen for the reason that tiwana has advantages compared to other methods for designing KM. The problem faced by cooperatives is that in submitting financing activities it is still manual, namely customers have to come to the Al Salaam sharia cooperative, this is very inconvenient for customers who want to apply for financing and the absence of a container that accommodates all information related to financing products, the type of marketing media used by Al-Saalam is brochures. The purpose of this research is to develop a knowledge management system to improve customer service with the main focus being to provide loan application features. The method used in this study is the Tiwana framework. The results of the research is a prototype of knowledge management system that can be accessed anytime and anywhere by customers.

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1. INTRODUCTION

Al-Saalam is a profit organization in the form of a sharia cooperative. Since it was first established until now, Al-Salam has been recorded as having a large number of customers. One form of service provided by Al-Saalam for its customers is financing products, these financing products are sharia financing for customers who own motorbikes, dream homes, education and business capital. The problem that has been faced by Al-Saalam for a long time is the application of a manual system in the service of financing products. Customers are required to come directly to the Al-Saalam cooperative to be able to apply for financing, besides that it takes a relatively long time to explain matters related to financing products to prospective customers. The main cause of the core problem is the absence of a container that accommodates all information related to financing products, the type of marketing media used by Al-Saalam is brochures.

Knowledge Management is a way to get used to communicating and sharing knowledge between members of the organization so that each member gets the opportunity to learn [1]. Utilization of Knowledge Management System (KMS) has a positive impact on the continuity of the organization's business, this happens because KMS is an effective way to translate work experience on an ongoing basis in the form of knowledge. KMS is also capable of transferring knowledge [2]. The method used in this study is the Tiwana framework with some adjustments. The tiwana framework was chosen for the reason that tiwana has advantages compared to other methods for designing KM. The advantage of the Tiwana model is that it has clear stages in

designing KM, starting from the analysis of existing infrastructure to the evaluation stage of the built KM [3].

There are several previous studies that have developed a knowledge management system as well as research using the same method used by the researchers in this study. The first research was conducted by Zuraidah (2018) on the topic of developing KMS for HR in employee cooperatives. The methodology used in his research is the SECI method [4]. The weakness in this study is that the proposed system is only a prototype.

The second research is research entitled design and performance measurement of companies based on the agri-food supply chain framework conducted by Seeds Satriono et al. This research was conducted at Sandia Bakery with the aim of knowing the company's performance. The analytical methods used are the Analytical Network Process (ANP), Importance Performance Analysis (IPA), and Root Cause Analysis (RCA) methods [5]. This research is used as a reference by researchers in using the Importance and Performance Analysis method.

Aslamiyah and Agustina conducted a study entitled measuring the knowledge gap (k-gap) using Importance and Performance Analysis and Root Cause Analysis. This research aims to find problems faced by student department and create a knowledge management system to reduce the number of knowledge gaps [6]. The weakness of this research is the limitation of research only up to proposing solutions that are not accompanied by system development.

The contribution of this research is to make a knowledge management system prototype that uses the Amrit Tiwana method - The Four Phases of The 10-Step KM Roadmap by making adjustments, namely using the 9 Step KM Roadmap. From the knowledge management system prototype created, later the lecturers will be able to share knowledge independently without having to communicate directly with the owner of the knowledge because this knowledge management system can be accessed easily anywhere and anytime.

2. THEORETICAL BASIS

2.1. Sharia Cooperative

Referring to previous research, the definition of a cooperative is a business entity with ownership and service users who are members of the cooperative itself and supervision is carried out by those who use the services of the business entity [7]. while Sharia Cooperatives are part of Islamic financial institutions which are based on sharia principles and aim to improve people's welfare by being profit-oriented and also falah [8]. Another definition of sharia cooperatives explained by Asfira (2021) cooperatives in the field of sharia business is a joint economic venture whose basis is objective, open and modern with a division of work and responsibilities as well as clear rights and obligations [9].

2.2. Knowledge

Knowledge is knowledge that is obtained by someone through the process of education or experience they experience in a subject. Information on a subject is observed, analyzed, and studied to become something that is remembered in one's memory and used as a source of solving a problem in the future [10]

Based on Fernandez et al (2004), knowledge can be categorized into:

1. Procedural or Declarative
   Declarative knowledge is referred to as "know what" or it can also be referred to as facts. Declarative knowledge is also known as substantive knowledge. Meanwhile, procedural knowledge is referred to as "know how". Procedural knowledge is a sequence of steps or actions that are desired or not desired.
2. Tacit or Explicit
   Explicit knowledge is knowledge that is already in the form of words and numbers. Formally and systematically, explicit knowledge can be disseminated in a form that contains data, specifications, guidelines, images, sounds, videos, computer programs, patents, and so on. Documentation is the keyword of explicit knowledge. Meanwhile, tacit knowledge is understanding, intuition, and conjecture. Tacit knowledge is different from explicit knowledge because it is more difficult to express and formulate, so it is difficult to disseminate as a result. Tacit knowledge only exists within each individual.
3. General or Specific
   General knowledge is knowledge that is owned by all individuals and can be easily shared between individuals. As the name implies, general has general characteristics so that everyone has a basic understanding of that knowledge. On the other hand, specific knowledge or also known as idiosyncratic knowledge is knowledge that is owned by certain people. Because of the limitations of those who master the knowledge, the value of this knowledge is expensive. There are two types of specific knowledge, namely technically specific knowledge and contextually specific knowledge. Technically specific knowledge is knowledge that addresses something specifically. This knowledge contains tools and techniques that can be used to solve specific problems. This knowledge is obtained from formal training and then applied directly. While contextually specific knowledge is knowledge to do a job that depends on certain conditions and time. Contextually specific knowledge alludes to a job in an organization and sub-organization.

2.3. Knowledge Management System

Knowledge Management System (KMS) is a tool that aims to support knowledge management, and is the development of an information management tool that integrates various aspects of computer science in supporting collaboration between the

work environment and information and document management systems. This is in accordance with what was expressed by Kimiz Dalkir: Knowledge management systems (KMSs) are tools aimed at supporting knowledge management. They evolved from information management tools that integrated many aspects of computer-supported collaborative work (CSCW) environments with information and document management systems [11]. . With KMS, existing knowledge can be classified, how knowledge is found, how knowledge is stored, how to maintain knowledge and how to use this knowledge and disseminate it [12].

2.4. Prototyping

Prototype is an initial version of software that is used to demonstrate concepts, try various design options, and explore more problems and solutions [13].

Some of the benefits of prototyping are:

1. Realizing the real system in a replica of the system that will run, accommodate input from users for system perfection.
2. Users will be more ready to accept any changes in the system that develops in accordance with the progress of the prototype until the final system is developed.
3. Prototype can be added or removed when the development process is running. The step-by-step progress can be followed directly by the user.
4. Saving resources and time in producing better and more efficient products for users.

3. RESEARCH METHOD

The method used in this study is the Tiwana framework. Tiwana has 4 phases and the total number of stages is 10 steps [14].

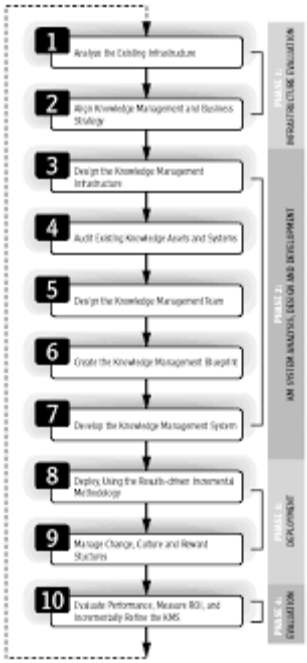

Figure 1. Tiwana Steps

These stages as can be seen in Figure 1. Phase 1 is infrastructure evaluation, In this phase there is the first stage and both in design and development KM, namely: (1) Analyzing KM infrastructure current and (2) Align KM with corporate strategy. Phase 2 is analysis, design, and development. this phase consists of stages three to stages seventh. These stages, namely (3) Designing KM Infrastructure, (4) System audit and current knowledge, (5) Shaping team for KM, (6) Make a KM plan, (7) Build a KM system. Phase 3 ie application, consists of the eighth stage and ninth, where the stage is (8) Applying result-oriented KM in a result-oriented manner gradually and (9) Change management. The last is phase 4, namely evaluation, which consisting of the last stage, is (10) Evaluate and update KM.

The design method used in this study is an adaptation of the Tiwana model. After making several adjustments, the steps in the Tiwana method used are as follows [15]:

1. Analysis of Existing Infrastructure
2. Aligning Knowledge Management and Business Strategy
3. Design the Knowledge Management Infrastructure
4. Design the Knowledge Management Team
5. Create the Knowledge Management Blueprint / Prototype

4. RESULTS AND DISCUSSION

the discussion section is presented following the flow of the tiwana framework used.

4.1. Analysis of Existing Infrastructure

In carrying out the analysis of existing/running infrastructure, researchers divide it into 2 parts, namely: ongoing information technology infrastructure and ongoing knowledge sharing culture. Al-Saalam does not have a special network for its own work unit, but is incorporated into the company's general internet network which is connected to each computer within the scope of Al-Saalam. Knowledge sharing culture in Al-Saalam has also been running, it's just that in its implementation it is not optimal and effective. The drawback of the existing knowledge sharing culture is that the knowledge sharing process is only carried out when new customers need it

certain information, in other words information will only be presented when the customer needs it, not something that can be obtained at any time by the customer.

4.2. Aligning Knowledge Management and Business Strategy

Aligning Knowledge Management and Business Strategy is carried out by aligning the goals of the company with the steps to be taken in this research. The purpose of BPRS AL-Saalam itself consists of 3 important pillars, namely:

1. Community Economy
   Helping the community's economy through financial institution services for the middle to lower economic community.
2. Islamic
   Providing banking services imbued with Islamic teachings and managed in accordance with sharia economic principles, namely equality, openness and fairness for results between customers and the bank.
3. Togetherness
   Different from private business entities in general, BPR Al Salaam is a business based on togetherness (Solidarity Corporate) which continues to uphold professionalism.

Departing from the objective of the first point, namely helping the community's economy through financial institution services for the middle to lower economic community, the results of the research conducted must ensure that it can facilitate AL-Salam in providing services in terms of financing. Therefore the researchers proposed a way out for BPRS Al-Salam in the form of a knowledge management system for customers in financing products.

After conducting an analysis of system requirements and interviews with related parties, it was found that the features that will be added to the knowledge management system are:

1. Submission of financing
2. View submission data
3. Confirm financing application
4. Manage financing submission data
5. Reports
6. Testimony form
7. Chat Room

4.3. Design the Knowledge Management Infrastructure

a. Requirements Analysis

After aligning between the organization's business strategy with the next KM strategy is to formulate a KM strategy which will then be used as the basis for designing KM infrastructure. The first step is to first analyze the KM strategy to get what features the system needs. The following table will explain the list of proposed features :

Table 1. Proposed Features

No	Feature	Description
1	Submission of financing	this feature allows new customers to submit financing products to BPRS AL-Saalam, a feature that will be added to complement this feature is to add information related to what financing products are provided by Al-Saalam
2	View submission data	This feature is to view a summary of the submissions made by customers
3	Confirm financing application	Before making a final decision in submitting a financing application, the customer will be shown a summary page of the form that has been filled in by the customer and then ask for confirmation whether the application will

		be continued or whether all the data entered has been correct.
4	Manage financing submission data	there is a feature to see the progress of the submissions made and how many submissions were made or in other words the history of submissions made by the customer
5	Reports	Customers will also be provided with a feature that allows them to print reports of submitted activities
6	Testimony form	after a series of submission processes are completed, customers can provide testimonials on the services that have been provided
7	Chat Room	a feature is also provided that allows customers to contact customer service on duty.

b. System Model Design

System model design is made using unified modeling language tools using use case diagrams. The use of use case diagrams makes it possible to be able to read the overall flow of the system to be built. The first stage in system design is to design a use case diagram. The interaction between the system, the external system and the user can be seen in the use case diagram. The steps to create a use case.

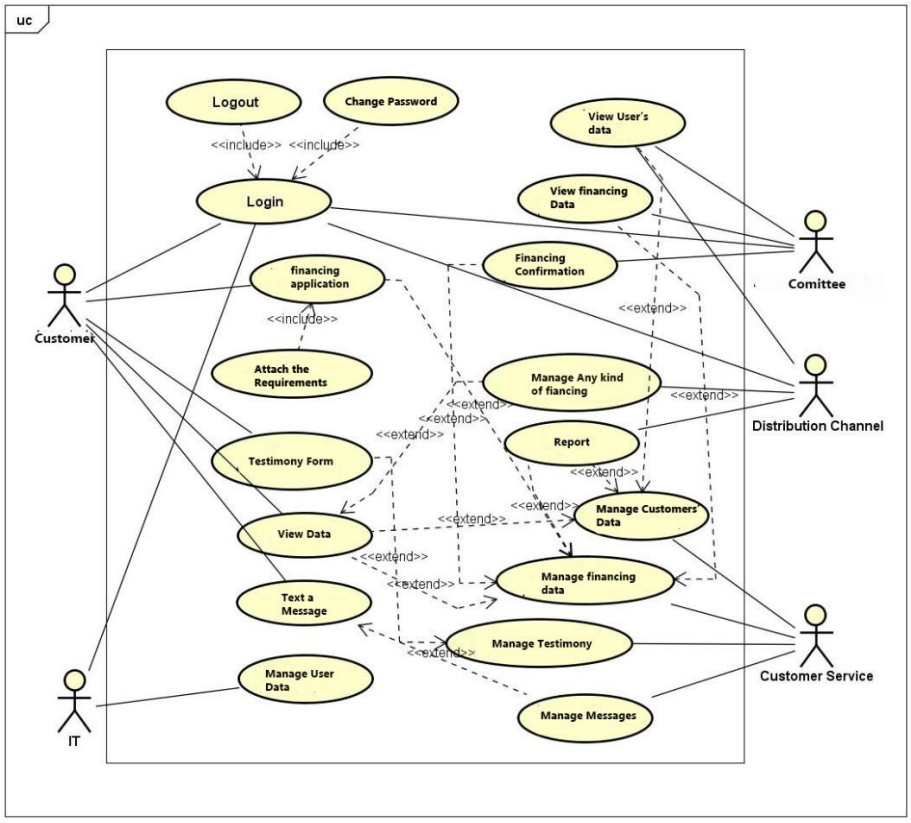

Figure 2. Proposed Design model system

4.4. Design the Knowledge Management Team

This Management System is adapted to existing users. There are five levels of user administrator and customer. The KMS management team consists of : IT staff, Customer, Customer service, Distribution channel and the committee.

4.5. Create the Knowledge Management Blueprint / Prototype

The final step is to make a prototype of the proposed system. The system prototype provides an overview of the appearance and flow of the system to be developed. When accessing the link for the first time, the customer will be given a login page display. Besides being able to log in, new customers can also register first to get a username and password that can be used for the next login. For the five different levels of access rights it has the same login page appearance, but for users among Al-Saalam employees there is no need to register, because an account will be created by the admin of the system.

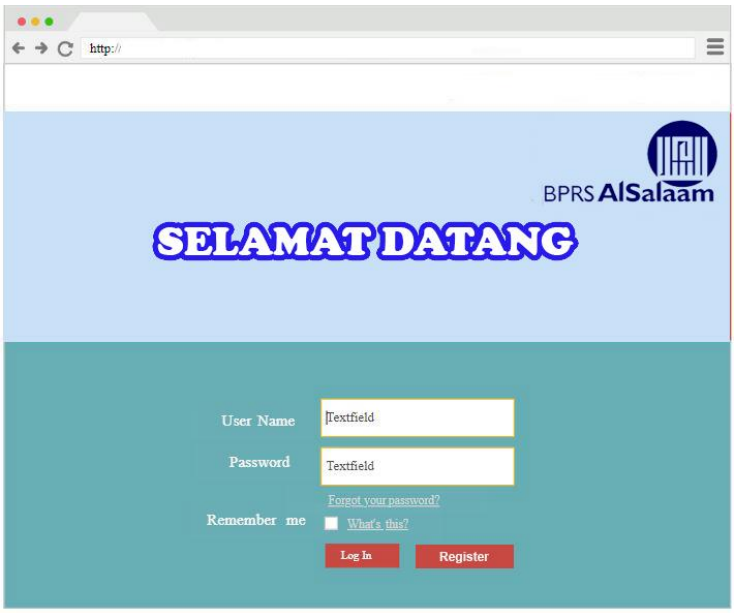

Figure 3. Login Page

If you are a new customer, then you need to register first so you can log in and access the website of the BPRS Al-Saalam financing product.

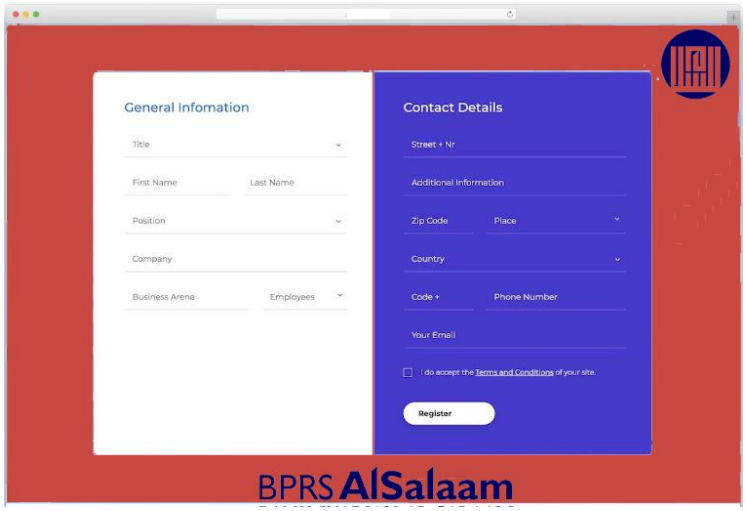

Figure 4. Register Page

The financing application form ini Fugure 5 is a form that must be filled in by customers who wish to take product financing. The form provided requires the customer to fill in their identity and upload the required related files

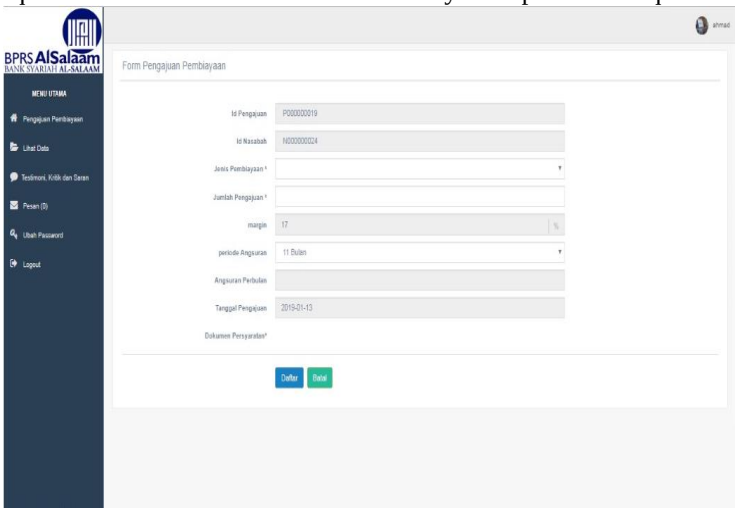

Figure 5. Submission Form

The next design in figure 6 is a form to view financing data. Financing data is all data related to data from customers who take financing products provided by Al-Saalam.

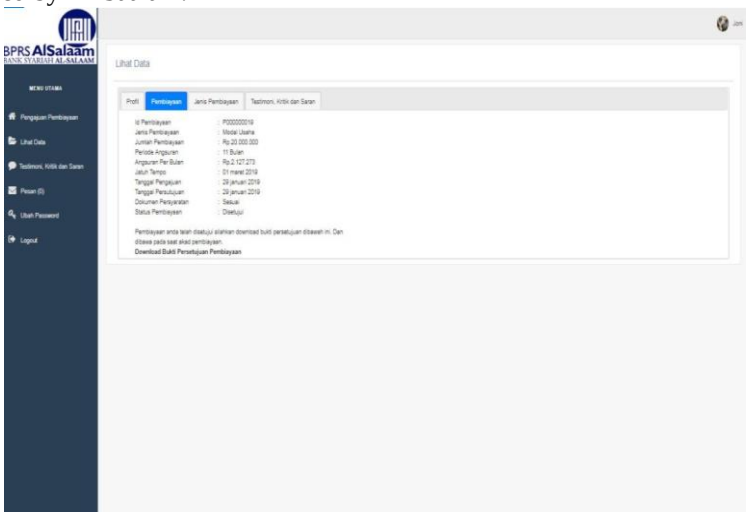

Figure 6. View Financing Data

The next design in figure 7 is the Financing Type Data Display form. BPRS AL-Saalam provides 4 types of financing, namely: motor vehicle ownership financing, education financing, business capital financing and residential housing financing.

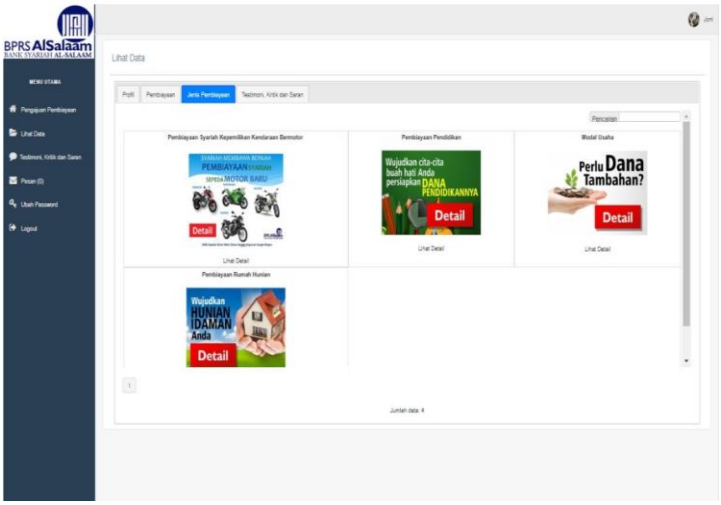

Figure 7. Form View Types of Financing

5. CONCLUSION

Based on the background of the problems faced by BPRS Al-Saalam, it is concluded that Al-Saalam needs a platform or media that can be used to interact directly with customers remotely and a media that can be accessed by customers anytime and anywhere. Measuring the results of Knowledge Management implementation is needed to be able to determine the effectiveness of Knowledge Management implementation in a company. This research was limited to prototype design which is why not all steps of the tiwana framework were used. For future research development, it is recommended to build a web- or mobile-based system that allows 24-hour access by customers and prospective customers. Recommendations from these researchers in first, products and menus should be added in order to support user requirements.

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