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Conference Paper · October 2019

DOI: 10.1109/ICIC47613.2019.8985929

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Knowledge Management System for Supporting the Small Medium Enterprise (UMKM) in Bekasi City

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Abstract— Usaha Mikro Kecil Menengah (UMKM), a kind of Small Medium Enterprise in Indonesia, has become an important part of the national economic system. Developing UMKM is a strategic task to drive the national economy because its business activities cover almost all business fields. One of the problems faced by UMKM is the lack of knowledge and skills to manage the business. Such a human resource problem should be addressed for increasing the competitiveness in the market today. The article proposed a knowledge management system (KMS) development method using the Amrit Tiwana framework in which some stages should be conducted, i.e. infrastructure evaluation stages, knowledge system analysis, team knowledge management design, the development of knowledge management system, prototype deployment, and evaluation.

Keywords— knowledge management system, knowledge management roadmap, small and medium enterprise (UMKM), tacit knowledge

I. INTRODUCTION

Worker turn over in an institution has been perceived as a main source of the loss of tacit knowledge. If there is no knowledge management then the company cannot utilize the knowledge for development [1]. Therefore, the knowledge only related the current workers in small number in this disruption era. Through a proper technology implementation, a company can improve its performance in the future [2].

Small Medium Enterprise (UMKM) is one type of business that give significant contribution to increase the low income people as well as keeping the tradition and culture. UMKM is a kind of business in which a knowledge is important in creating the business product. Therefore, the knowledge should be managed.

The knowledge in UMLM is not only managed but also documented as a reference for other UMKM. By documenting the knowledge, searching for a particular knowledge can be done easily. For this purpose, a Knowledge Management System (KMS) as a system for storing, searching, and retrieving of the knowledge is emerged. The KMS can be used for competitive purpose. The business will run optimally and the loss of knowledge, e.g. by worker turn over, can be minimized. KMS should be created in a user-friendly tool in UMKM.

Knowledge management has a main goal to ensure the knowledge availability in a right time in a right people. The knowledge management should run efficiently and for

success, the interaction among the components is a must without many overlapping. The component of KMS are: i) people, ii) process knowledge management, and iii) technology. These three relation sometimes is called KM Triad [3].

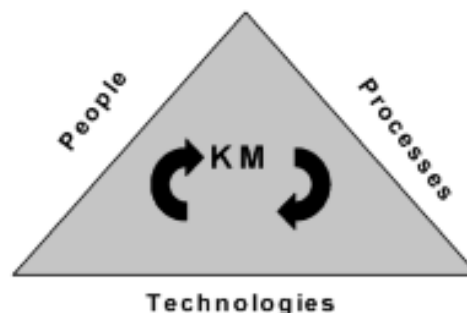


Fig. 1. Knowledge Management (KM) Triad [3]

UMKM in Indonesia has many complex weakness points that related to each indicator, namely, lack of managerial, and operation skills. Based on government data, UMKM export increased 9.29 % or Rp. 182 billion where 86.33% of capital is from self-support [4].

A. Usaha Mikro Kecil Menengah (UMKM)

UMKM is a significant sector for development of both microeconomic and macroeconomic since this sector influence other sectors [5]. UMKM has shown its ability to minimize the impact of monetary crisis in Indonesia. Therefore, the government give a special attention to UMKM. Not only by the government, other stakeholders also support the UMKM, e.g. private institution, and civil society [6].

However, the government policy should be made for protecting the UMKM. Some regulations might be needed to support the UMKM and do not limit the creativity of its business as shown is act no. 20 in 2008 about UMKM regulation. Regarding human resources (article 16: 1, letter c) for developing the human resource, the government should: i) encourage people for entrepreneur, ii) developing technical and managerial skills, iii) provide education center for tutoring, advising, and motivating people for their creativity and creating a new business product [7].

B. Knowledge Management (KMS)

The knowledge is an important aspect for the sustainability of an organization. The knowledge appears in skills, practices, habit, and others that come from experience and training [8]. There are two kinds of knowledge, i.e. explicit knowledge and tacit knowledge. Whereas the explicit knowledge is a formal knowledge that can be presented in data, specification or manual, the tacit knowledge is more personal, e.g. insight, intuition, experience, and understanding [9].

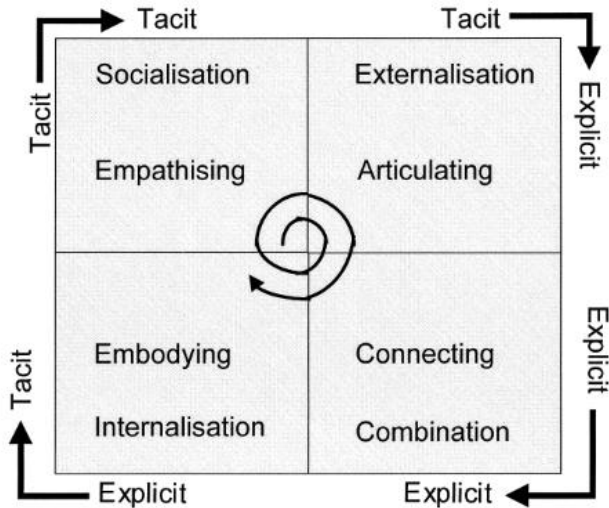


Fig. 2. The SECI Process [9]

Knowledge and experience is a sustainable resources and have a competitive advantage rather than main product and technology [10]. Therefore, for utilization of the knowledge, the knowledge management (KM) is needed. The current study propose a KM design for Small Medium Enterprise of Cooperative Agency (DISKOP UMKM) of Bekasi City, West Java, Indonesia.

KM has three main elements, i.e. people, process and technology [11]. People act as a source and spreader of knowledge. Process can be distributed in a media after storing the knowledge. Technology is a tool to support the people and process. A knowledge management system (KMS) can be provided for supporting a worker to solve the problem based on the previous knowledge [12].

II. RESEARCH METHOD

The framework used in this proposed of KMS of UMKM in Bekasi City was based on Amrit Tiwana roadmap. This framework has ten steps. This step can be easily defined. The framework has four phases, namely, i) infrastructure evaluation, ii) knowledge system analysis, design, and development, iii) deployment, and iv) evaluation [13]. This study only implemented phase one and two. Fig 3 shows Amrit Tiwana framework.

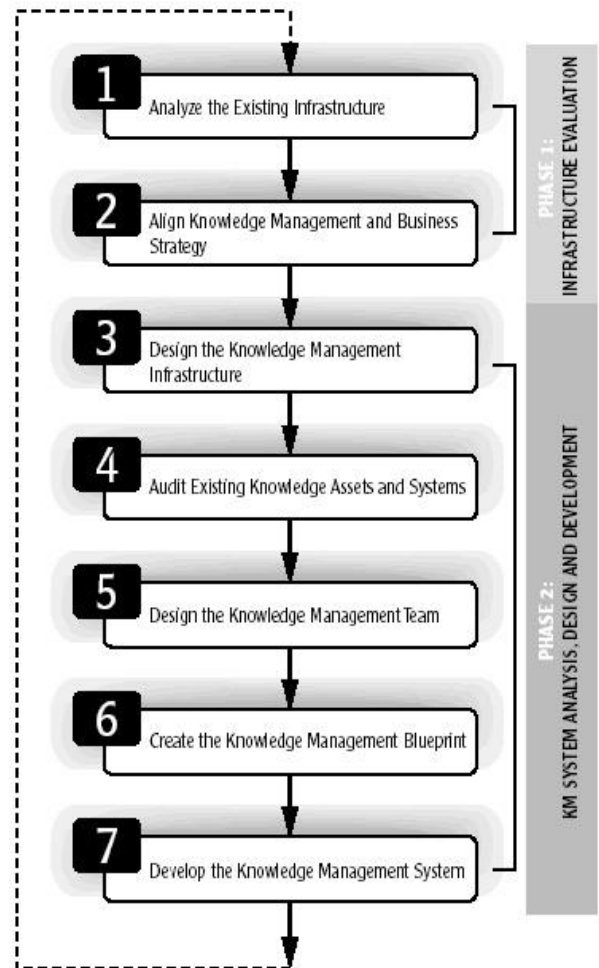


Fig. 3. The Amrit Tiwana Framework [13]

A. Phase 1: Infrastructure Evaluation.

This phase includes the analysis of existing infrastructure, and aligning KMS with the infrastructure in study case. A survey to gather infrastructure information has been done.

B. Phase 2: KM System Analysis, Design, and Development

This phase includes designing KM infrastructure, auditing existing knowledge asset and system, and designing the KM infrastructure management team, creating the KM blueprint and develop the KMS. After analyzing business strategy in DISKOP UMKM Bekasi City, KM infrastructure can be designed. Auditing is useful to know whether the knowledge is optimal or not. KM blueprint was built after collecting data and tools for documenting knowledge between DISKOP UMKM and businessman. Finally, a KMS interface was built for sharing the knowledge among UMKM businessman.

C. Survey to Potential Users

Before implementation, a survey to potential users should be done, in order to get the acceptance from UMKM users. The research participants (110 respondents) were chosen from UMKM in Bekasi City. The questionnaire purpose was to answer the particular question (Table I) following the five

Likert scale (Strongly Agree, Agree, Neutral, Disagree, Strongly Disagree).

TABLE I. ASSESSMENT QUESTION IN QUESTIONNAIRE

| No | Assessment Aspects |
|----|---------------------------------|
| 1. | Easy to Use |
| 2. | User understand the blueprint |
| 3. | Fast Response |
| 4. | Consistency |
| 5. | User Friendly Buttons and Menus |

III. RESULT AND DISCUSSION

The study focused on KM in UMKM business sector in Bekasi City for gather the description for KMS design that appropriate in supporting UMKM development in this city. The four phases in 10-step roadmap of Amrit Tiwana framework (Fig 1) was successfully implemented.

A. Analyzing the Existing Infrastructure

Based on data collection, there are 179 UMKM businessman in Bekasi City below DISKOP UMKM Bekasi City. These UMKM locations were categorized as fashion, food and drink, handy-craft (selling and production), doll and accessories.

Fostered UMKM in Bekasi City is the main element in developing the UMKM. Some activities have been done for improving the UMKM performance, e.g. training, workshop, advising, exhibition, etc. in local or national level. DISKOP UMKM also help businessman in creating the legal permission (SIUPP) of organization, food production legal, and halal permission. This facility has been provided online on <http://dkukm.bekasiKota.go.id> as well as available on social media, e.g. the Facebook of DISKOP UMKM Bekasi City: <https://www.facebook.com/pages/Dinas-Koperasi-Dan-Ukm-Kota-Bekasi/109837263130653>. However, these online resources difficult in managing the knowledge from UMKM businessmen in Bekasi City because difficulty in sharing a tacit knowledge among business people.

B. Align Knowledge Management Infrastructure

DISKOP UMKM of Bekasi City should ensure that every business people in UMKM sector have a capability in growing their business. DISKOP UMKM should provide the infrastructure need, e.g. official website. New infrastructure needs aside the official website, i.e. a KMS in which the tacit knowledge from many business people in UMKM sector can be stored and shared.

C. Design the Knowledge Management Infrastructure

A gallery place has been provided located in DISKOP UMKM building. This gallery can be used by UMKM businessman for exhibit their product.

KMS infrastructure design can be used by DISKOP

UMKM to share a tacit knowledge of UMKM in Bekasi City. The KMS can be utilized in storing the explicit knowledge as well, e.g. products, activities, etc. to all people in Bekasi City.

D. Audit Existing Knowledge Asset and System

In order to designing the KMS, the knowledge assets should be collected. Many knowledge assets have been

collected by DISKOP UMKM of Bekasi City in both tacit and explicit knowledge, e.g. registering a new UMKM organization procedures, permission (SIUPP) guidance, and food license (halal), and other explicit knowledge documentation workshop, seminar, training, and exhibition. This KMS help UMKM businessman in Bekasi City.

E. Design the Knowledge Management Team

To design KMS, a team should be prepared. The team consisted of government staffs who have knowledge on specific tasks, e.g. bureaucracy. KMS should also has a capability in sharing the knowledge among UMKM business people, e.g. important news/information, workshop information, conference, exhibition, etc.

F. Create the Knowledge Management Blueprint

KMS management was done by special staffs in KMS team. All tacit and explicit knowledge were included in KMS and stored in a KMS database, e.g. UMKM locations, how to register a new UMKM, how to get UMKM permission, Food halal registration, as well as activities information, training and workshop schedule, exhibition information, etc. Fig 4 shows the blueprint of KMS in DISKOP UMKM.

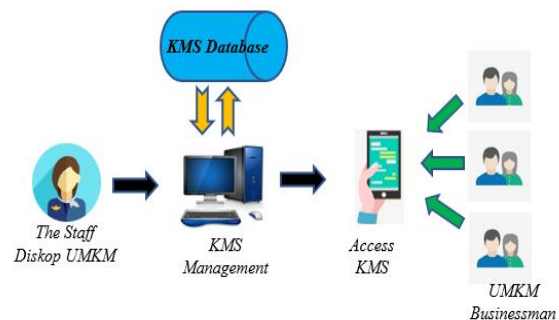


Fig. 4. KMS Blueprint

G. Develop the Knowledge Management System

Based on KMS blueprint, the interface was built for helping the UMKM user accessing the knowledge. Some features were available, in particular for managing and sharing the knowledge. Uploading and managing the knowledge was done inside the KMS database by KMS staffs. Fig 5 shows KMS blueprint.



Fig. 5. KMS Blueprint

H. Potential Users' Response

Fig 6 shows the potential users' response. Most users agree to the KMS blueprint proposed in the current study. Therefore, KMS blueprint adequate for implementation.

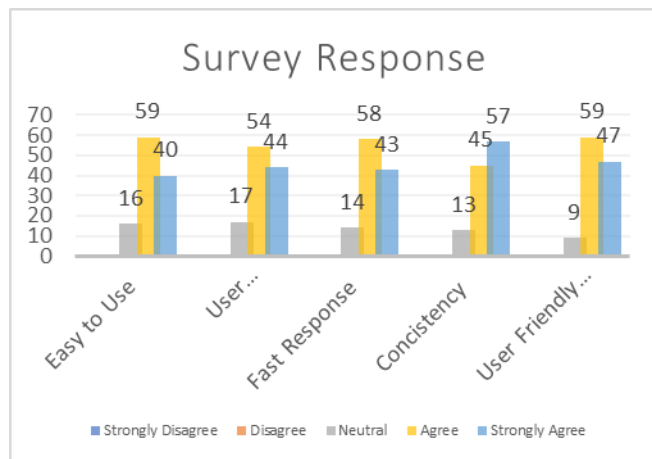


Fig. 6. Survey Response

IV. CONCLUSION

The research aims to help government in managing UMKM knowledge through the KMS system. DISKOP UMKM of Bekasi City can use the proposed framework to built mobile-based application to manage the tacit and explicit knowledge through a KMS system. Every UMKM location can access the KMS and exchange their knowledge to others.

ACKNOWLEDGMENT

The authors thank to the ministry of research and higher education (RISTEKDIKTI), directorate general of research and community service (DRPM) of RISTEKDIKTI, research department (LPPM) of STMIK Bina Insani, and others who support the research. The authors also thank to reviewer for insightful comments.

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