

Strategies to Improve Knowledge Sharing in Trading Construction Organization

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Abstract—In this present economy that is wholly centered on knowledge and skill, knowledge sharing (KS) is gradually regarded as an important factor in organizational effectiveness and an innovative mechanism to cope with challenges [1]. Therefore, for organizations to create new knowledge sharing strategies are essentials to align to the knowledge economy to overcome business challenges [2, 3]. A preliminary investigation was conducted by focusing on the Critical Success Factors (CSF) to promote knowledge sharing at the organizational level and to examine the employees' perception towards the types of knowledge sharing tools in the construction trading industry. This paper proposes several dimensions for knowledge strategy to manage knowledge assets that can be used as the key foundation to many organizations to stay competitive especially the construction trading industry.

Keywords—*knowledge management; critical success factor; knowledge sharing strategies*

I. INTRODUCTION

Knowledge sharing (KS) allows organizations to unravel their potential, and to change the way they think and react in a highly competitive business environment. Today, it is essential for organizations to have the ability to acquire accurate knowledge to deliver innovative products, improve processes, and to distribute knowledge among employees and encourage them to utilize it within daily organizational activities. Knowledge sharing is considered to be the most strategic resource [4, 5] that enables the success of organizations. Knowledge sharing is much needed especially for complex work procedures and task routines because they are valuable to many organizations and are difficult to be imitated by competitors [6, 7].

Despite heavy investments by organizations on knowledge management (KM) initiatives, the more challenging aspect is to attain its objectives after a long journey. A lot of related works have identified various barriers and Critical Success Factors (CSF) on the failure and success of KS. However, knowing the barriers and CSF is not enough. The processes needed to manage knowledge such as the creation of the knowledge, knowledge storing and knowledge transfer or sharing are essential for achieving strategic organization goals by fully exploiting existing knowledge bases [4, 8]. With an integrated and coherent KM strategy, organizations are in a better position

to yield good results in terms of business performance and technologies enhancement [1]. This potential can be attained by building an organization's knowledge base to enable employees to leverage on knowledge sharing activities in the organizations [8].

One should be clear on the key differences between knowledge management strategy, knowledge strategy and knowledge sharing strategy in any knowledge journey. Knowledge strategy [9] is a set of strategy that aligns the organizational knowledge to a set of defined business strategy. Knowledge strategy focuses on knowledge resource development to support business strategy. On the other hand, knowledge management strategy is a set of strategy and framework that provides an effective knowledge management (KM) program where it is a systematic strategy, not just a general plan to help employees share knowledge in the organizations [10]. Lastly, Tounkara and Arduin defined knowledge sharing strategy from the information systems perspective as the choice of a set of specific information system functionalities (and associated organizational rules) in order to support knowledge sharing activities [11]. Besides, other considerations such as process and people or talent are being taken into account in the knowledge sharing strategy.

In this sense, KM strategy is important for organizations to achieve organization goals and objectives with the clear use of an integrate KM processes [1, 12]. Hence there is a need for knowledge strategies in ensuring the success of KM resourcefulness and the business itself [13]. This research is essential from a theoretical and practical perspective. Completing research in this area is important theoretically and together with a practical approach, the findings from such research can potentially help the industry in terms of KM strategy and KM implementation.

II. RELATED WORKS

A. Knowledge, Knowledge Management and Knowledge Sharing

There are a number of different types of knowledge. Tacit knowledge is the type of knowledge that is hard to transfer and shared. It is developed through experiences, actions and it can be shared through conversations, over a cup of tea and storytelling [4, 14]. Meanwhile, explicit knowledge is easy to

be created, stored and captured to redistribute it back in various forms. In this research study, the term knowledge referred to the individual's mind where the knowledge is stored, their experiences with the organization. Knowledge is independent and is influenced by factors like beliefs, principles, values, visions and feelings of an individual. Therefore, with knowledge sharing, the organizational performances, efficiency, competitive advantage and values can be increased when knowledge is disseminated throughout the organization [4, 15]. To properly manage knowledge, knowledge management process needs to be properly understood.

Knowledge Management (KM) is a process that assists organizations in storing, organizing, capturing and redistribution of knowledge effectively [5]. KM is also defined as a process that captures, store and disseminate knowledge as well as best practices to gain a competitive advantage [16, 17]. KM can also be defined as identification, creation and actual application of an organizational knowledge. This paper adopts all of the views above and defines KM as a process to identify, create and disseminate knowledge to achieve organizational objectives and competitive advantages while fostering an environment and culture that encourages further knowledge creation and sharing.

B. Critical Success Factor of Knowledge Sharing

Critical Success Factors or CSFs are crucial factors required to ensure the continued success of an organization and management should focus on these factors to increase organizational performances and productivity [14, 18]. The definition of CSF adopted in this paper is defined as areas that will produce successful and competitive performance [19] for the organization if these areas are well addressed. CSF influencing knowledge sharing behavior (KSB) of knowledge worker has been theoretically [20], qualitatively [21], conceptually [22] investigated including some practitioner papers [15] published in this area. Studies have also been done via questionnaire surveys [23]. Long term commitment and leadership from management are required as they are the most critical barriers to a successful KM implementation [24]. Management holds the responsibility for identifying the strengths and weaknesses of the organization thus to conceptualize a vision of what KM should be like in the organization [16] and cultivate the KS and learning culture. It is imperative to embrace KS in the strategy and goal of the organization. Missing or ambiguous integration of KM strategy in the organization strategy can obstruct effective KS practices. Benefits and values of KM are unknown to the employees who process the knowledge because of the poor leadership approach and management communication thus creating knowledge barrier. The employee's vision on KM varies with the management's; making it unproductive as both parties are working towards different goals. It is essential to create a culture that supports that vision while it is the management's responsibility to promote KS and motivates the employees to achieve these visions and objectives [24, 25].

Employees need to share their experience and domain information willingly instead of being compelled to share in the organizations. Employees in any organizations that share quality information will support the creation, sharing and use

of learning and experience through the strengthening of any individuals who investigate new potential outcomes and methodologies [26]. Thus in most knowledge culture a set of principles and values on how organization interprets and facilitates learning are incorporated in the practice of the workflow process [24].

Technologies such as knowledge respiratory, communication networks, electronic mails, data warehousing, and decision support systems are essential to promote KS and facilitate the exchange of information and knowledge throughout the organization as employees are able to create, store and share expertise, information and experience with one another efficiently [27]. Technology aids in eliminating obstruction and encourages knowledge retrieval and dealing with the information by supporting the everyday procedure of creation, exchange and share information. These frameworks will be coordinated in the work process of organizational exercises to help KS [28]. The presence of technology in the organization does not ensure that the workers will utilize them to help them with knowledge exercises when the technology is not easy to use and no legitimate preparation was given. It can be concluded that tools and technology positively influence employees' perceived behavioral control towards KS.

KM strategy is essential to ensure successful KM initiative. A well-planned strategy gives the premise to the use of abilities and assets to accomplish the KM objectives, characterizing the association's key information and upgrading the nature of organizational learning. The objectives of KM strategy refer to the organizational objectives and the importance given to KM to achieve those objectives. KM may bridge the gap that appears when organizations determine to address these issues, to develop new products, to increase innovation and productivity [29, 30]. Hence, KM strategy ought to be coordinated and adjusted to the business strategy (BS) with the goal KM should be utilized to encourage the achievement of such objectives and help the organization to address business issues and increase complete favorable position [31].

Recognition and acknowledgment by co-workers, superiors, and management motivate employees to share their experiences, best practices, and knowledge [32]. Employees refrain themselves from sharing knowledge as they are afraid of losing their credit for what they have done [33]. Employees with a higher level of knowledge determine their status in the organization [20]. Reputation and status are gained through knowledge sharing activities by providing advice and their experience in solving an issue. Thus, reputation enhancement positively impacts employees' attitude towards KS.

Motivational incentives like reward systems or motivational aids should be incorporated in the KM initiatives. Organizations ought to incorporate motivating forces and rewards be it as far as fiscal or non-money related with the significance of effort in knowledge sharing and utilization of knowledge. The incentive programs should focus on KS, creativity and innovation ideas with group based benefit based on high involvement in knowledge sharing [31].

Training allows employees and managers to perform their tasks more effectively and develop effective work behavior and

ethics that support KM. Organizations are able to convey a better understanding of KM concept to their employees via training. With training, organizations will be able to create awareness on the importance of KM and its benefits. The training conducted should focus on the importance of KS and the use of KM systems with the aim of fostering creativity, innovation, and KS.

With the help of human resource management, organizations are able to focus on the recruitment of employee, personal advancement, and retention rate. The purpose of KM recruitment is to bring in new knowledge and skills into the organization filling the organizational gap by hiring new employees who fit into the knowledge culture and have a fondness towards KS. Development activities that are customized for the employees will help improve the employees' skills and competencies. Another focus of human resource management would be the retention of employees. If an employee leaves the organization, the knowledge, know-how and experience goes with it. Thus it is important for an organization to retain their employees from leaving by offering a decent and conducive working environment, prospects for them to grow and advance in terms of their careers to meet their requirement and increase their job satisfaction [26].

C. Concept of a KM Strategy

Business strategy is characterized as a state, an adaptable arrangement that manages the development of business activity. To make sure that the accomplishment of organizational objectives and goals in any businesses, the strategy must be aligned and aimed at furthering the goals and objectives of the organizations [13]. A KM strategy is usually a subset of the business strategy for the organization; any KM imitative will fail to achieve goals that are substantial to the organization if they are not aligned. It is essential that KM strategies are aligned closely to the overall business strategy, and produce substantial results to the organization as a whole. KM strategy demonstrates an overall approach on how an organization intends to align its knowledge assets and competences to the intellectual requirement of its strategy [29]. Hence, the definition adopted for KM strategy in this research is a high-level framework and roadmap that highlights the processes, technology, and infrastructure required for knowledge management to follow effectively throughout the organization.

Most approaches used by an organization in the development and implementation of KM strategies do not satisfy the KM needs of the organization, and there is a lack of cohesiveness across the various approaches. KM strategy frameworks can be categorized as, prescriptive, descriptive and hybrid. A prescriptive framework provides directions on the type of KM procedures and processes to be developed without any specific details on how these procedures and processes can be implemented. A descriptive framework, however, describes KM in a way where the CSFs that influences the success of KM and KS are identified and focused on. Lastly, a hybrid framework is a mixture of the prescriptive and descriptive framework. The study of 11 KM strategies by [13] includes four (4) strategies as a prescriptive framework [18]; six (6) as a descriptive framework; and one (1) that follows a hybrid

framework [34]. Even though knowledge strategies should have these three components, no knowledge strategies are the same as they are unique to the organizations that devise them [22, 29]. Thus, in conclusion, it is essential to develop a KM strategy that is integrated with the CSFs that need to be adhered to and ensure that this strategy is suitable for the organization. The aim of this research is to develop a KM strategy based on the CSF of KS in a trading company in Malaysia.

III. METHODOLOGY

In this research, the broad literature review was conducted in order to build theoretical platforms to understand KS barriers and CSF in its early stage. The review of literature in this research focus on the CSF of KS consisting of organizational climate, tools and technology, organizational motivations, mutual benefits and reputational enhancements. This is followed by a study on the relationship between these barriers and KSB. A preliminary investigation was conducted with the objective to understand the CSF that promotes KSB in a trading organization in Malaysia. A construction trading organization was chosen. This organization consists of 800 employees over 16 organizations that are based in different locations such as Malaysia, Singapore, Thailand, China and Australia. Qualitative and quantitative approaches were used in this study and questionnaire survey was used as the primary data collection technique and interview as the secondary data collection technique to better understand the participants' perception on KS tools, problems that they are facing in the organizations with regard to knowledge sharing in the hope to provide a better knowledge sharing strategy to improve the current situation. The duration of data collection was four (4) months. Due to the geographical and fund challenges, the survey was conducted in Malaysia where survey forms were distributed to all employees on a voluntary basis. The details of the questionnaire are as follow: (i) A total of a hundred (100) questionnaire survey forms were given out; (ii) sixty (60) employees have responded to the questionnaire survey achieving a response rate of 60%; (iii) the questionnaire includes sections on the usage of KS tools, types of KS tools they used most often, the acceptance level of KS tools, their perception on KMS interface design on the barriers and CSF mention above. To seek better understanding, a series of interview sessions with the employees were conducted. A total of four (4) employees from two (2) different departments were chosen to take part in the interview activity which lasts about an hour each. The interview questions were divided into four (4) sections; Introduction, People, Technology and Organizational Factors. The analysis approach used was to tabulate the results from the questionnaire survey to identify issues that were relevant to the main themes. Knowledge sharing strategy (KSS) is then developed based on the findings of this study and the review of the literature.

IV. RESULTS AND DISCUSSION

A comprehensive analysis of CSF of KS based on characteristics and factors discussed in the literature review has been carried out on the survey conducted. The purpose of this investigation is to identify the CSF of KS by having a better understanding of the perception of employees towards KS, CSF of KS and potential improvement of the knowledge tools

and processes. When conducting this study, the participants were briefed on the research objectives and the questionnaire distributed to them. The findings from the questionnaire survey were thoroughly analyzed to discover findings on employees' perception towards KS, the barriers and motivational factors that they faced when sharing knowledge using KS tools available to them. In this research, the KS tools cover all the tools that provided to them for sharing of knowledge. This research does not target at a specific KS tool. All the tools used by the employees are not mandatory.

Fig. 1 shows that majority of the employees use email, instant messaging and intranet from the knowledge sharing tools listed on the survey form. This is because the system that they are using currently provides them these capabilities. It can be seen that collaboration tools like Google+, Google Group, Social Cast, and Yammer are not popular among the employees, as the majority of them have never used or heard of these tools before. The employees in the organization are still using traditional tools to communicate with one another instead of using collaborative and social tools. This finding raises the question of "what are the reasons that de-motivate them from using these new tools?". This is a question that needs to be investigated in the future research.

Usage of Knowledge Sharing Tools

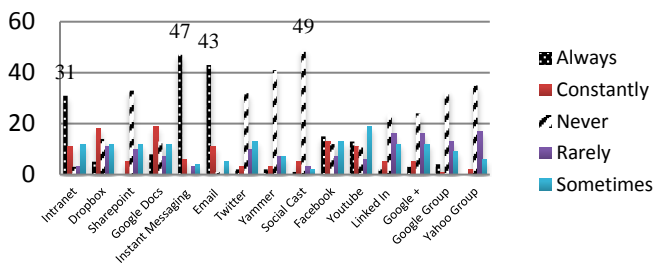


Fig. 1. Usage of knowledge sharing tools.

Fig. 2 shows a summary of the usage of KS tools based on the purpose of use. The majority of employees constantly uses email, calendar, scheduling and instant messaging functions. This shows that the employees of Sunway Trading Group of Companies (STGC) seldom collaborate with one another using Web 2.0 applications such as Facebook or Whatsapp, but instead share knowledge via instant messaging and the intranet in their communication with one another.

Fig. 3 shows that the numbers of positive responses are more than the negative responses on the employees' perception towards the acceptance of knowledge sharing tools. Although the employees have a positive perception and acceptance towards knowledge management tools, most of these tools are not provided by the organizational systems and they do not use them aside from the emails, intranet and instant messaging among others mentioned above. Many of these tools used by different departments are adopted based on the departmental needs. The choice of the tools is also based on the decision and resources available to them at that point in time. Tools adopted are not consistent across departments and countries too. Hence, disparity on tools adoption and usage of tools are high.

Type of Knowledge Sharing Tools

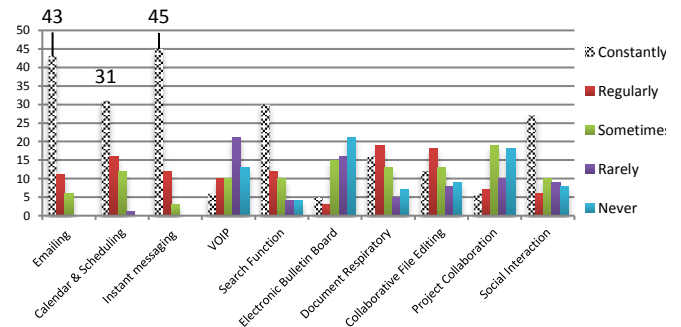


Fig. 2. Types of knowledge sharing tools.

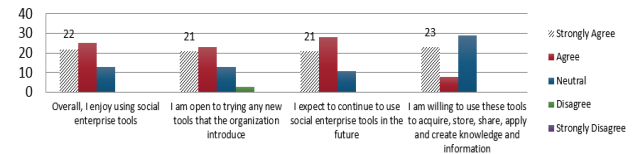


Fig. 3. KS tools acceptance.

It is believed that most of the knowledge sharing tools usage is to communicate and collaborate as the majority of respondents strongly agree that the purpose of KS is to communicate and collaborate with colleagues in the team, department, and organization (Fig. 4). Unfortunately, the technology used in the organization currently does not create an environment where collaboration is being fostered. In addition, the communication between teams and departments in the organization has not been made easy to all the employees. Policy to uphold and process to support have not been properly established. It is essential to find out what exactly the employees want and expect from the systems that will be used for collaboration and communication. Because these KS tools are the enablers for communication and collaboration where knowledge is shared.

Perceived Purpose of KM

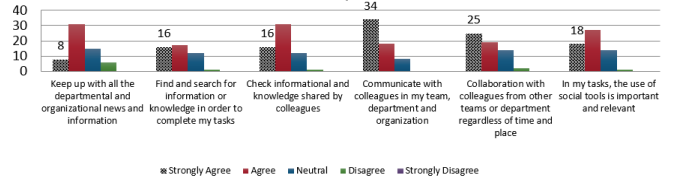


Fig. 4. Perceived purpose of KM.

Fig. 5 depicts the satisfactory level of KS tools from users in terms of user friendliness and ease of access, effortlessness of download and knowledge reuse. The majority of respondents agree that the interface of the KS tools is easy to use. They can use the tools effortlessly for knowledge sharing and reuse. Only a small number of respondents disagree and disagree strongly on the user-friendliness on the interface of the KS tools they use. This shows that there is still room for improvement in terms of user friendliness of the tools' interface. More research can be done to find out where further improvements can be made. Good user interface design is essential as it can make a big difference between a successful

and a not successful system. When a tool fails, it makes a negative impact to the knowledge initiative in an organization. If the employees find that the knowledge sharing tools are confusing or too complicated to navigate around, the tools will not be used efficiently. Thus it is essential for organizations to ensure that the tools that they implement for knowledge sharing are user-friendly and easy to use.

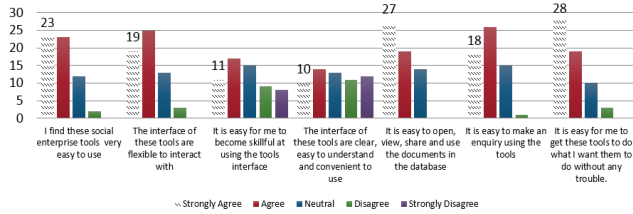


Fig. 5. Perception on KS tools interface design.

The employees’ perception on the effectiveness and productivity of using knowledge sharing tools is illustrated in Fig. 6. The majority of respondents agree that by using knowledge sharing tools, they help in reducing the time taken to complete a task by effectively looking up for information they needed, and prevent making the same mistakes that occurred in the past. Although the majority of respondents perceived that there are benefits to knowledge sharing but there are a number of respondents disagree. It is essential that employees understand the benefits of knowledge management and values of knowledge sharing.

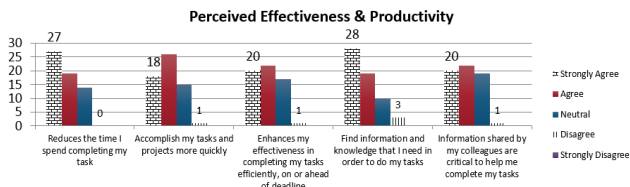


Fig. 6. Perception on the KS tools effectiveness and productivity.

In this research, besides survey was conducted, interviews also took place. These interview sessions were carried out to focus on several key questions that need deeper study.

A few interview questions were asked on the commitment and management leadership in driving the knowledge management activities. Based on the findings, long-term commitment and leadership from management are required as it is the most critical barrier for successful KM [26]. The following quotes show that the management in this trading organization agreed on the importance of leadership and management support towards KS.

“The word leaders’ means that people who lead by example. It is the responsibilities of the management to cultivating KS and learning culture in the organization. Management should lead by example instead of asking the employees to do something that they themselves are not even practicing. They should create a knowledge-friendly environment for the organization” – Manager 1

“It is essential for KM initiatives, or strategies to be aligned with organizational goals and strategies. Without this alignment, any knowledge initiatives and strategies will have no meaning and value towards the organization.” – Manager 2

“Employees do not know the importance of KS and how it would benefit the organization and them as individuals. The organization does not communicate the importance and benefits.” – Manager 3

Employees will share their knowledge publicly in an environment that has a well-nurtured sharing culture compared to an environment where employees are forced to share knowledge. The following quotes show that the managers and management in the organization agreed with the literature reviewed when asked about the importance of knowledge friendly culture.

“The culture of the organization is the first thing that an employee experiences when he/she joins the company.” – Manager 1

“A culture in an organization is hard to change, it is a long process to change it but in the end, with a lot of hard work, I believe we can achieve a knowledge-friendly culture.” – Manager 2

“It is key to promote a culture that values knowledge highly; this will encourage KM and KS through the empowerment of employees to explore new knowledge and approaches.” – Manager 3

The collaboration culture is key to promote knowledge sharing in the organization. To be able to collaborate, employees need to trust each other and the information and knowledge that is being shared with them. This is supported by the questionnaire survey. Fig. 7 shows that 78% of the employees agree that it is key for employees to trust that the information shared is accurate; 58% of the employees agree that it is important to build the trust among employees in the organization in order to have successful knowledge sharing.

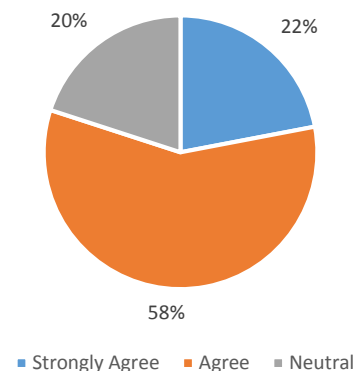


Fig. 7. Importance of trust among colleagues.

An employee needs to be acknowledged by coworkers, superiors, and management in order to encourage others to share their knowledge [32]. The following quotes show that the managers and management team in organization agreed when asked about the matter.

“People do things for recognition and employees in this organization is no different”– Manager 1

“Any form of acknowledgment and recognition shown by us, the managers or other colleagues will definitely boost the chances KS.”– Manager 2

The need for recognition and acknowledgment is also supported by the questionnaire survey results. As shown in Fig. 8, 68% of the employees agree that men have a high level of fear of losing their job as they are fear of losing power and ownership when knowledge is being shared with colleagues.

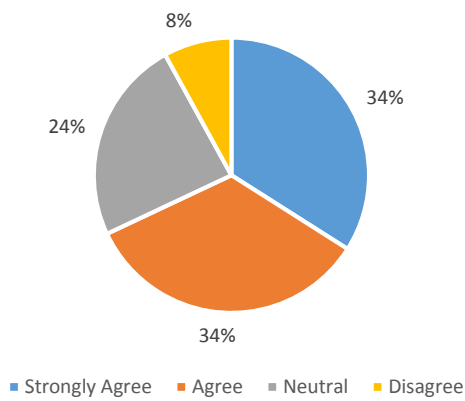


Fig. 8. Higher job security and recognition.

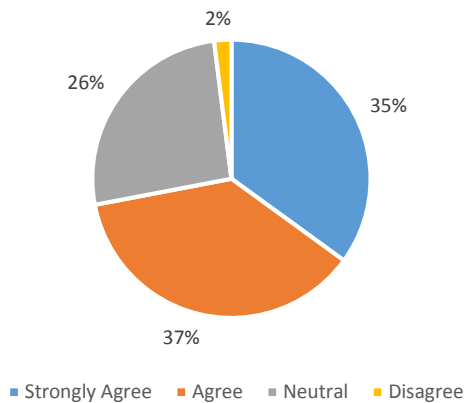


Fig. 9. Technology and tools helps KS.

Technologies such as knowledge respiratory and communication networks [27] are keys to promote KS and facilitate the exchange of knowledge throughout the organization as employees are able to create, store and share expertise, information and experience with one another

efficiently. 72% of respondents agree that technology helps employees find and search for information efficiently (Fig. 9); 81% agree that technology helps employees check information and share knowledge with colleagues (Fig. 10); 87% agree that technology helps employees communicate and share knowledge easily; 87% agree that technology helps communication in the organization (Fig. 11).

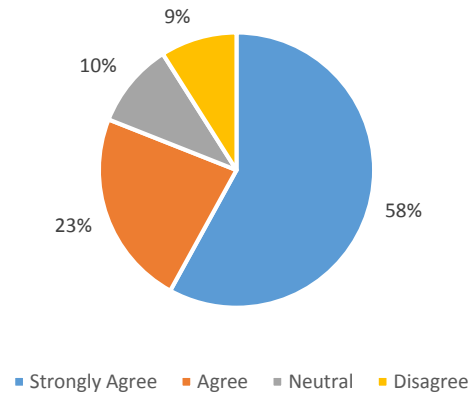


Fig. 10. Technology to keep up to date information.

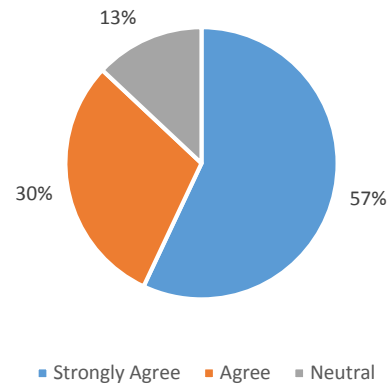


Fig. 11. Technology to communicate and share knowledge.

Financial incentives namely better pay, bonuses, job security, career advancement [15] are keys to encourage KS. This study agrees with the literature and shows that 68% of the respondents from the study agree that higher bonuses will encourage them to share knowledge among their co-workers (Fig. 12). 71% of the respondents agree that rewards should be given accordingly to the level of KS contributed by the employees regardless of their position and ranks (Fig. 13). Finally, the study also shows that 62% of the respondents agree that incentives should be given to promote the managing and sharing of knowledge (Fig. 14).

Despite the availability of technology, management commitment, and leadership, the lack of KM processes and methodologies is also a downfall of KM in an organization. Managers agreed that proper process is important and this aligns with the literature reviewed:

“It is important for organizations to have a proper and efficient knowledge sharing processes and methodology in place to store and disseminate the knowledge properly” - Manager 1

“Without a standardized KS processes, knowledge is not truly shared; each department has their own way to share knowledge.”— Manager 2

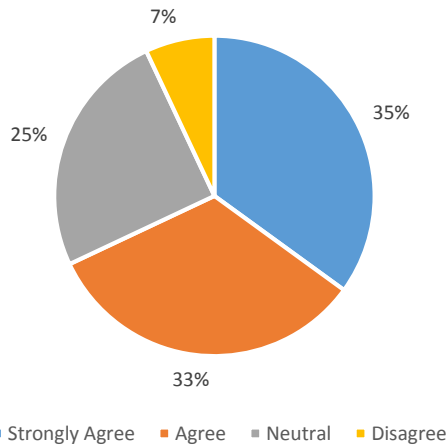


Fig. 12. Higher bonus encourages knowledge sharing.

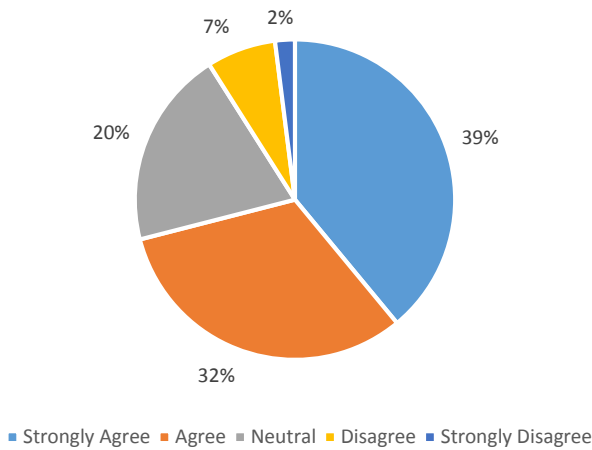


Fig. 13. Reward accordingly.

V. STRATEGIES TO OVERCOME BARRIER

A successful KM implementation needs to overcome KS barriers. This includes well thought measurable actions and processes. Both the management team and the employees need to cultivate knowledge sharing culture in the organization in order to achieve goals set. Organizations embarking on the KS journey needs to devise a set of strategies from all aspects so that they fit well into the ecosystem of the organization such as the vision, missions, and goals of the organization in the implementation of knowledge management initiative. Drawing from the strategies discussed in the [34, 35], the following strategies are developed to align with the business goals of the construction trading organization in this research project:

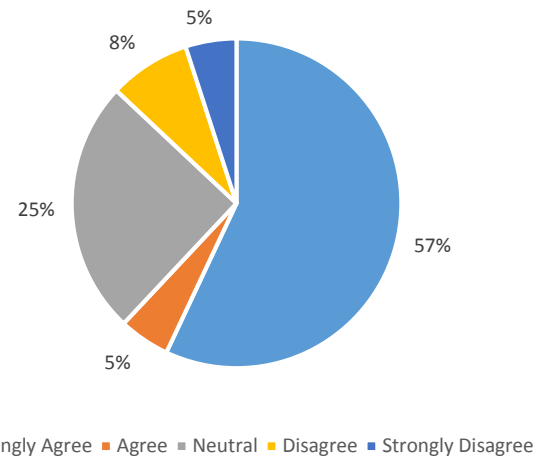


Fig. 14. Incentive in KS.

Strategy 1: Building a noticeable link between KS and organization’s goals.

Experts and administrators must inspect if the organization’s objectives and procedures provide support to the creation and utilization of KS. In the event that the organization’s objectives and missions do not express clearly and accurately the significance and advantages of organizational learning and KS, then it is hard for the organization to pass on and share with the information specialists the significance of KM and KS in the organization. Different organizations that had effectively actualized KM and KS have rebranded its qualities and incorporate the significance and advantages of KS into the core values of the organization. The establishment of a brand or tagline in the organization also helps convey the message to the employees that knowledge is highly valued and should be utilized whenever possible. Successful knowledge intensive organizations have started their KM efforts by connecting the importance of KS with challenges faced by organizations. With this, KM and KS processes can be framed as a strategy to reduce the time needed to complete tasks that will prohibit the employees from meeting the organizational goal.

Strategy 2: Integrate knowledge sharing with values held by the organization.

Values infused in the organizations should be recognized and assessed to cultivate a strategy for KS and KM. If KS is used to integrate into the organization’s value, then the introduction of KS can be perceived by employees as a way to extend their belief in the original value. For instance, if the organizations understood and encouraged the value of collaboration, KS can be used as a way to promote collaboration. Consequently, the value of collaboration can be strengthened with the help of KS.

Strategy 3: Integrating incentives and rewards into the knowledge sharing processes.

Management should look at the reward and recognition component of employees' performance evaluation to determine their relationship to KS values. Employees who are recognized, evaluated and rewarded on their ability to use and share knowledge with others will most likely to embrace KS processes in their jobs. On the contrary, if the management promotes or praises employees on what they know instead of the knowledge that they share with others will encourage knowledge hoarding in the workspace. This discourages the nurturing of knowledge sharing friendly environment. Management should implement a system that recognizes and evaluates staff who have increased and intensified KS in the organization. Employees who exercise and demonstrate best KS practices should be recognized and rewarded as a form of motivation.

Strategy 4: Tailor KS processes to the culture of the organization.

The way organizations respond to changes varies in different ways; it is essential to reflect on the past organizational changes before introducing KM into an existing organizational culture. Organizations with formal culture and process, the change process might need to include a note from the management explaining the importance and need for the mechanism of knowledge sharing, using training and pilot projects to introduce KM. Management is able to assess the organizational culture that can encourage or inhibit KS behavior in the organization via different aspects of the organizational knowledge sharing culture: teamwork, reflection, and the spirit of learning.

Teamwork involves all the employees working together by communicating to each other, trust and strength to manage the group interaction. Trust acts as a predominant enhancer or proactive KS. It is essential that employees capture the importance of KS, especially on how KS benefited their organization in the past. Organizations should make use of important lessons and best practices in the past case studies, training provided to employees on the tools used to share information within the organization, and lastly rewarding employees when knowledge is shared.

Management should encourage sharing and sees learning as a part of every employee's job and workflow, where there are progressive discussions and on what employees have learnt from projects and delivery of services as critical reflection works best in a team. Management should manage the organization as a learning organization where the importance of intellectual capital is well understood and regard their employees as key roles in developing the organization. The organizations should also actively pursue knowledge based skills and integrate organizational learning into the daily workflow by defining processes to set learning agenda and capture, filter, apply and share knowledge via technological platforms. With these processes in place, the organization will be able to provide sharing and learning opportunities for all employees and create a culture that values organizational learning and sharing by reinforcing it with incentives.

Strategy 5: Implementing an effective informal network of employees.

With a proper and effective network implemented in an organization, it is easier to establish open communication, trust, and mutual obligation to share knowledge in the organization. Management needs to understand where employees naturally seek knowledge to solve their problems and their preferences in which technology is suitable. Therefore, it is crucial for an organization to know how their employees seek information and knowledge and whether they are comfortable using the technology to share knowledge.

Strategy 6: To identify the extent and strength of knowledge that exist in the organization and ways to capture and disseminate them.

Organizations contain a large amount of knowledge, be it tacit or explicit knowledge. Nevertheless, employees find it hard to find where knowledge resides, how it can be assessed and located thus shared effectively. While many organizations collect, store and share explicit knowledge, they often just translate tacit knowledge into knowledge that can be utilized by all employees. Organizations should manage the use of tacit knowledge efficiently and valued it as the key to achieving competitive advantage. High level of understanding and appreciation for tacit knowledge can greatly facilitate KS. Most organizations have mechanisms to collect and store explicit information but there are few strategies to access and collect tacit knowledge. Thus, it is essential that management to educate employees on what tacit knowledge is and stresses how important and valuable tacit knowledge is for the future. Management should ensure that the organization has the capacity to transform into accessible knowledge for all employees by encouraging open discussions and forums, orientation, mentorship and training programs, communities of practices, lessons learned and best practices, among others.

Strategy 7: Utilize a KM team to facilitate the implementation of KM strategies.

Knowledge workers in any organizations are the ones that create, hold and shares knowledge. It is essential for an organization to find a team that is skilled at transforming experience in collecting, assessing, applying and disseminate knowledge via tools and technology to take care of issues and challenges. Organizations need to identify individuals that have the ability to identify strategies to seize and disseminate knowledge, an understanding of barriers and enablers of KS and the technological issues involved. These individuals can be part of the implementation process of a KM strategy that involves in-service training, hiring practices, managing the expectations of employees and reward systems.

VI. CONCLUSION AND FUTURE RESEARCH

Knowledge sharing factors in any knowledge management framework and initiative can motivate or inhibit the success of knowledge sharing ecosystem in the construction trading organization. This research has laid a strong foundation for future research in other industries. This research has also provided a deeper understanding of the motivators and barriers

that one needs to take into consideration. These factors help the formulation of knowledge sharing strategies. This research adopts the strategies to explain in conjunction with the factors found in the findings of the research and they are found to be aligned. In the future research, outcomes found can be reused with these factors to investigate needs in other industries and domains too.

REFERENCES

- [1] M. J. Donate and I. Canales, "A new approach to the concept of knowledge strategy," *Journal of Knowledge Management*, vol. 16, no. 1, pp. 22–24, 2012.
- [2] M. Boisot, *Knowledge Assets*, Oxford University Press, 1998.
- [3] M. Zack, J. Mckeen, and S. Singh, "Knowledge management and organizational performance: An exploratory analysis," *Journal of Knowledge Management*, vol. 13, no. 6, pp. 392–409, 2009.
- [4] D. M. DeCarolis and D. L. Deeds, "The impact of stocks and flows of organizational knowledge on firm performance: An empirical investigation of the biotechnology industry," *Strategic Management Journal*, pp. 953–968, 1999.
- [5] T. H. Davenport, "Saving IT's soul: Human centered information management," *Harvard Business Review*, pp. 119–131, March–April 1994.
- [6] R. Grant, "The knowledge-based view of the Firm," in *The Strategic Management of Intellectual Capital and Organizational Knowledge*, Choo and Bontis, Eds. Oxford University Press, 2002, pp. 133–148.
- [7] B. Kogut and U. Zander, "Knowledge of the firm, combinative capabilities and the replication of technology," *Organizational Science*, pp.383–397, 1992.
- [8] J. March, "Exploration and exploitation in organizational learning," *Organization Science*, vol. 2, no. 1, pp. 71–87, 1991.
- [9] P. H. Jones, "Knowledge strategy: aligning knowledge programs to business strategy," [Online]. Available: <http://redesignresearch.com/ks-kmw2000.htm> [Accessed 20 Dec 2016].
- [10] "Knowledge management strategy," [Online]. Available: <https://www.apqc.org/knowledge-management-strategy> [Accessed 20 Dec 2016].
- [11] T. Tounkara and P. E. Arduin "Aligning knowledge sharing strategy with organizational and cultural contexts: an information system perspective," in *European Conference on Knowledge Management, Academic Conferences International Limited*, September 2014, vol. 3, p. 983.
- [12] R. Maier and U. Remus, "Defining process-oriented knowledge management strategies," *Knowledge and Process Management*, vol. 9, no.2, pp.103–118, 2002.
- [13] N. N. Sunassee and D. A. Sewry, "An investigation of KM implementation strategies," in *Proceedings of the 2003 Annual Research Conference of the South African Institute of Computer Scientists and Information Technologists on Enablement through Technology (SAICSIT '03)*, 2003, pp. 24–36.
- [14] J. Ranjan and V. Bhatnagar, "Principles for successful aCRM in organization," *Direct Marketing: An International Journal*, pp 239–247, 2008.
- [15] T. H. Davenport and L. Prusak, "Working knowledge: How organizations manage what they know," Harvard Business School Press, 1998.
- [16] I. Nonaka and H. Takeuchi, *The Knowledge Creating Company*, New York: Oxford University Press, 1995.
- [17] B. Pasternack and A. Viscio, *The Centerless Corporation*, New York, Simon & Schuster, 1998.
- [18] M. E. Greiner, T. Bohmann, and H. Krcmar, "A strategy for knowledge management," *Journal of Knowledge Management*, vol. 11, no. 6, pp. 3–15, 2007.
- [19] J. F. Rockart, "Chief executives define their own data needs," *Harvard Business Review*, pp. 91–92, 1979.
- [20] P. Kollock, "The economies of online cooperation: Gift and public goods in cyberspace," *Communities in Cyberspace*, pp. 220239, 1999.
- [21] P. S. Goodman and E. Darr, "Computer aided systems and communities mechanisms for organizational learning in distributed environments," *MIS Quarterly*, vol. 22, no. 4, pp. 417–440, 1998.
- [22] A. Tiwana, *The Knowledge Management Toolkit: Practical Techniques for Building a Knowledge Management System*, Prentice Hall, 2000.
- [23] M. M. Wasko and S. Faraj, "Why should I share? Examining knowledge contribution in electronic networks of practice," *MIS Quarterly*, vol. 29, no. 1, pp 1–23, 2005.
- [24] S. Chong and Y. Choi, "Critical success factor in successful implementation of KM," *Journal of KM Practice*, vol. 6, pp. 1–21, 2005.
- [25] M. E. Jennex, S. Smolnik and D. T. Croasdell, "Towards a consensus knowledge management success definition," *Vine*, vol. 39, no. 2, pp. 174–188, 2009.
- [26] K. Y. Wong, "Critical success factor for implementing knowledge management in small and medium enterprises," *Industrial Management & Data Systems*, vol.105, no.3, pp. 261–279, 2005.
- [27] M. Stankosky, "Advances in KM: University research towards an academic discipline," 2005.
- [28] Alavi and Leidner, "Review: KM and KMS: Conceptual foundation and research issues," *MIS Quarterly*, vol. 25, no. 1, pp. 107–136, 2001.
- [29] M. H. Zack, "Developing a knowledge strategy," *California Management Review*, vol. 41, no. 3, pp. 125–145, 1999.
- [30] M. J. Earl, "KM strategies: Towards a taxonomy," *Journal of Management Information Systems*, vol. 18, no.1, pp. 215–233, 2001.
- [31] K. Wiig, "On the management of knowledge-Position statement," 1996. [Online]. Available: http://www.km-forum.org/what_is.htm. [Accessed 6 Dec 2015].
- [32] C. O'Dell and C. Grayson, "If only we knew what we know: Identification and transfer of internal best practices," *California Management Review*, vol. 40, pp. 154–174, 1998.
- [33] A. Chua and W. Lam, "Why KM project fail: A multi-case analysis," *Journal of KM*, pp. 6–17, 2005.
- [34] US ARMY, 1999. [Online]. Available: <http://www.army.mil>. [Accessed 5 Oct 2015].
- [35] T. H. Davenport and L. Prusak, *Working Knowledge: How Organizations Manage what They Know*, Harvard Business School Press, 2000.
- [36] R. M. Grant, "Toward a knowledge-based theory of the firm," *Strategic Management Journal*, pp. 109–122, 1996.