Knowledge management success factors: Human perspective

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Abstract

The people is an important factor and requires attention in designing a knowledge management (KM) program. However, pressuring workers to participate in a KM program in an organization is not a good idea because knowledge resides with those people. Unless workers cooperate in knowledge sharing, knowledge cannot flow effectively. The study aims to derive a theoretical marketing model designed to manage the people factor that influences workers to participate in a KM program. The paper uses qualitative research with a grounded theory approach. It studies the marketing concept and marketing mix models based on 4Ps, 4Cs, 4Es, SIVA, SAVE and OVER. The comparative analysis of the selected models was done and finally, the SERVE model was derived from the analysis. The model is applicable for planning and designing a strategy for a KM program involving the KM implementer, practitioner, and policy maker.

Keywords: knowledge management, marketing mix, knowledge management marketing, success factors, knowledge sharing

1. Introduction

Knowledge management (KM) may be viewed from various perspectives. One interesting and simple perspective is the three main factors of KM: technology; process; and people [1 - 4].

Technology includes various information technologies used as tools to support or facilitate the lifecycle of KM processes by capturing, storing, and sharing knowledge. Examples of information technologies are Wiki, Blog, Groupware, and Intranet. These technologies allow people to be involved in the KM program and help to manage their knowledge efficiently in online or offline, face-to-face, or distance modes.

Processes refer to activities or procedures that people interact with including knowledge capturing, storing, sharing, and applying processes. The result of a process is that knowledge is retained, transferred, and utilized in the system. For example, After Action Review (AAR) is a process designed to capture knowledge from a lesson learned in a project before team members forget or a team disperses [5].

People engage in KM processes and may use technology in order to enact these KM processes. Knowledge resides in people and is used and shared by people. These are the roles for individuals in a KM program which are the focus of this study. Morale, organizational structure, and organizational culture affect people participating in KM [6]. In this paper, the term people, human, employee, and worker are used interchangeably.

All three elements are vital and lacking any one may cause a KM program to fail or be inefficient. To make a KM program successful, all elements must be blended seamlessly and artfully. Many firms start KM program by considering only the technology dimension because it is tangible and it is the fastest, and easiest to manage [7]. Technology is an essential element of KM, and many firms install KM related technologies such as groupware, collaborative software, and Intranet hoping that staffs will use those systems to share knowledge that will flow through the firm in a virtual space. However, the outcome might not be as expected and even though a website is interesting, easy to use, and has many features, very few people may use it [7]. Moreover, the technology might not support the firm or staffs' needs [7]. On the other hand, working with people is difficult, sensitive, and time-consuming. As noted by Bhatt [1] the KM dish will be superb when the people ingredient is involved.

Although nobody opposes the concept of KM, he may not have time to devote to it. Also, many KM programs pay little attention to organizational culture. Only good technology is not enough for a successful KM program. If KM fails then many people try to blame the information technology, but technology does not change the staffs' behavior of accumulating knowledge [1, 8, 9]. Many organizations over emphasize the technology element compared to the human (people) element and that causes KM projects fail [10].
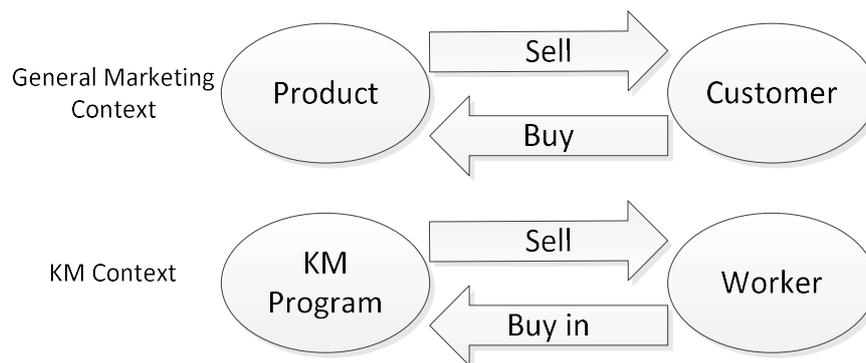
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Figure 1 Conveying characteristics of marketing to KM context

1.1 Human is a significant factor in KM success or failure

Knowledge management (KM) is "strategies and processes designed to identify, capture, structure, value, leverage, and share an organization's intellectual assets to enhance its performance and competitiveness" [11]. A firm establishes a KM program to bring in all necessary things to achieve KM. Surrounding the KM processes, people involvement and knowledge sharing are a vital issue, otherwise, a KM program will fail as indicated by the following literature.

Many factors affect KM program success or failure. Heisig [12] found the four main categories of KM critical success factors from 119 frameworks as follows: human, organization, technology, and management Process. Among these, the human is central for KM success factors. The study in 35 multinational corporations shows that organizational culture and organizational structure, namely, collaboration, learning and development, top management support, formalization and centralization affect knowledge sharing. Importantly, if people believe that sharing knowledge will reduce their power and affect their job security and promotion, they will not share. Once this feeling happens, it will degrade workers' collaboration against a KM program [13].

Chua and Lam [14] studied KM failure factors and classified them into four categories: technology, culture, content, project management through initiation, implementation, and institutionalization stages. Among these categories, there are human-related factors such as user buy-in, lack of user involvement, lack of trust, knowledge hoarding, and perceived image which affect a KM program. Akhavan and Pezeshkan [10] point out that KM critical failure factors happen in six stages of KM cycle. These factors include top management support and commitment, overreliance on KM technology, identifying critical knowledge, external consultant because involvers do not understand organization nature, lack of evaluation process. Knowledge identification is a vital task that needs workers' participation. Reward and incentive system, change resistance, misunderstanding in KM project also affect knowledge sharing. A firm needs to be concerned with employees' needs. Many of those issues are related to the human that require the critical consideration. Otherwise, it will cause a KM project fail.

1.2 People cannot be forced but must be persuaded

One major problem is that people do not share their knowledge and involve in KM activities. May we order employees to do so? Even though we have a chain of command like the military, KM program may fail in getting people in participation [15].

People in KM environment have special characteristics. They are knowledge workers in which possesses the intellectual property both tacit and explicit knowledge [16]. This knowledge is inside the human's head and heart. What knowledge they know or do not know does not show obviously. Forcing workers to share or apply knowledge without their cooperation might not be a good practice [17].

If they are not willing to do, how the knowledge inside their heads can flow out smoothly. Finally, the KM program will fail. Additionally, Vuori and Okkonen [18] indicates that users should use KM tools willingly. The main challenge is how to persuade people participating in KM willingly.

This leads to the research question concerned with the formulation of a theoretical model of how to influence a worker to buy in to a KM program.

1.3 Applying marketing to KM context

The marketing has three interesting characteristics as follows:

1) Acceptance of Idea: The marketing concept is quite broad in which can apply for other areas than products and services such as increasing members or acceptance of ideas [19]. To conduct a KM program, concepts such as knowledge sharing also needs to be accepted by workers and consequently becomes a part of the scope of marketing.

2) Human as Target Market: In marketing, it pays attention to customers as the target market that influences the sales. Customers' needs will lead other marketing activities [20].

3) Human Persuasion: A seller has no power to force a buyer. Unless a buyer needs a product, a seller

cannot sell it. Marketing has to find a way to persuade a customer to buy products.

By these scenarios, we may apply the marketing discipline for workers to accept the idea of KM. Workers influence KM. Unless workers involve or contribute in KM programs, it is inefficient to have KM programs or KM activities. Thus, workers will be the target of KM programs. Moreover, knowledge is inside human, so forcing workers to share their knowledge might not be efficient. Hence, we must apply the "buy-in" concept to workers. Merriam-webster.com defines "buy-in: acceptance of and willingness to actively support and participate in something." Workers get buy-in for KM means that they accept an idea and willing to participate in the KM program. Thus, we may convey characteristics of marketing from the product to a KM context such as a product to KM program, customer to worker, sell the product to sell the KM idea, buy the product to buy in KM (Figure 1).

This leads to a modified research question "What marketing theory may be applied to influence a worker to buy in to a KM program?"

The article is organized as follows: it starts with the research methods followed by a literature review about marketing concepts and marketing mixes. Next, a model is formulated using a variety of marketing mixes and final conclusions are drawn.

2. Methods
2.1 Research design

To find out the marketing theoretical model to make workers obtaining buy-in for a KM program, this paper is based on qualitative research with the grounded theory approach in which used for theory generation rather than theory verification [21]. The grounded theory is a way to discover theory from data [21] which is marketing mix models from document in this study.

The research starts reviewing the literature about marketing concepts. Then searching for the interesting marketing models that would facilitate the researcher in providing ways to handle a target market. It was found that the marketing mix is a marketing model which determines important factors to make marketing strategy, and also found the 4Ps model which has been a classic marketing mix for several decades, this was used as the origin of the theory. Therefore, there are other competitive marketing mixes. Purposive sampling was used to select marketing mixes in which the author reviewed many of them from several sources [22] such as web site, textbook, and journal, then selected significant mixes which are related to and extend the 4Ps model for comparative analyses. In this study for simplicity, the objective was to limit selected models to those which did not include more than four factors. Finally, six of them were selected and used for model analysis which met the appropriate number of cases between four to ten [23]. In accordance with Birks and Mills [24], the comparative analyses of

the selected mixes were done based on four factors within and across the mixes. Through deliberate reading iteratively and cross-checking by several academicians, the related factors and descriptions across six models were tabulated. Similarities and differences among the factors in different contexts were identified in order to generate factors used in a new theoretical model. Criteria for factors' evaluation and selection are as follows:

- Concept relevance is the degree to which the factor is applicable to KM.
- Level of abstraction. For example, a product refers to a physical concrete item but solution refers to a factor which is abstract such as a computer software system.
- Context dependence is the degree to which the factor applies across different marketing contexts.

The new factors were validated in the KM context by considering their compatibility with findings in the KM literature. The implementation of these methods is made clear in following sections.

2.2 Literature review

Marketing is a broad discipline in which relates to many perspectives as appeared in various definitions. For examples:

"Marketing is the activity, set of institutions, and processes for creating, communicating, delivering, and exchanging offerings that have value for customers, clients, partners, and society at large" [25].

"It is much more than just selling stuff and collecting money. It is the connection between people and products, customers and companies" [26].

Marketing is "the identification, creation, communication, delivery, and monitoring of customer value" [20].

"Marketing reveals the customer's needs, designs and products based on the requirements and demand, and it consequently creates a support system aimed at ensuring customer satisfaction (Crainer, 2000)" cited in [27].

Marketing is an extensive management process that relates to pre-production, production, post-production to provide goods and services that satisfy customers and make a profit for a firm. There are a broad set of processes related to marketing from developing a product, determining price, finding a place to reach the customer, having a promotion, advertising, after sale service.

Marketing is far beyond selling matters, although it relates to selling. They all mention about the customer as the target of marketing activities. All phenomena of marketing aim to serve customers' needs. Although profit is the target of firms, customers are the source of wealthy. No matter what product, quality, and quantity are given to the customers, it is useless for the business if they do not need.

Marketing does not limit for financial gain.

Table 1 Transformation from 4Ps to other models

Models	Related factors			
4Ps	Product	Price	Place	Promotion
4Cs	Consumer	Cost	Convenience	Communication
4Es	Experience	Exchange	Everyplace	Evangelism
SIVA	Solution	Value	Access	Information
SAVE	Solution	Value	Access	Education
OVER	Offer	Value	Experience	Relationship

Table 2 Transformation of product

Models	Related factors	Short description
4Ps	Product	Function and feature of the tangible product.
4Cs	Consumer	Consumer wants and needs.
4Es	Experience	Understanding customer's needs through entire processes.
SIVA	Solution	Solving customer's problem.
SAVE	Solution	
OVER	Offer	Anything offers to the customer including the intangible thing.

The result of marketing might not limit just financial gain from selling products. Normally, firms conduct business to make a profit, particularly money. Therefore, the term profit in marketing does not limit in differences between revenue and expense or financial gain. Some types of business may do marketing to increase members or acceptance of idea [19]. For examples, a public health organization campaigns people to prevent HIV, politicians campaign for their votes.

1) Production-oriented marketing vs. Customer-oriented marketing

There are two main concepts of marketing: production-oriented marketing and customer-oriented marketing [19, 20]. Production-oriented marketing views from a seller or producer that concerns about what to sell, what to produce. This focuses on what product a firm can produce, how a product can sell or deliver to a buyer. In the earlier era, this concept might work well because a customer had not many choices. There was no high competition. So manufacturers influenced customers. However, this might not guarantee that a product matches the buyer's need.

Later, the situation has changed. There are many producers to provide a wide variety of products. Customers have many choices. They are always ready to change from one product to others when other products are better than one. Customers may shift from one product to others easily. Thus, the power changed from a producer to a customer. To gain competitive advantage, it depends on how much a firm can serve a customer's need. Finally, customer-oriented marketing comes to play a role that views from the customer's side. The buyer's need is the starting point that directs the production process of the firm to produce a product that satisfies customers as much as possible.

Nowadays, the seller is not a determiner because a customer has many choices to select in the high competition of globalization. The power falls into the customer's hand [28]. So "marketing activities should be based on the identification of customer needs and wants" [29].

In conclusion, production-oriented focuses on producing and selling products whereas customer-oriented focuses on customer's needs. Shortly speaking, it looks from the perspective of seller or buyer.

2) Marketing mixes/models

In marketing, the marketer has to develop a marketing strategy to reach the target market. Therefore, the marketing process is quite broad and complex. There are many factors in a marketing mix or model to define marketing strategy [30]. However, they can be grouped into manageable areas. Many factors in a marketing mix can be simplified into four factors, which are called 4Ps namely, Product, Place, Promotion, Price [19].

Product is making things that customers need. **Place** is a distribution that refers to the availability of product when and where customers need, and providing convenience for customers to buy. **Promotion** is telling customers about products. **Price** must be appropriate and accepted by customers.

The marketing concept has developed for long since products were just soap, toothbrush, kitchenware, medicine, and food to buy from a supermarket or grocery store. The world has evolved from shopping in a store to an E-commerce. Advertising has extended from billboard to social media. The business model has expanded from B2C to B2B and C2C. These

Table 3 Transformation of price

Models	Related factors	Short description
4Ps	Price	Payment for the product.
4Cs	Cost	What customers gain by investment including tangible and intangible benefits.
4Es	Exchange	
SIVA	Value	
SAVE	Value	
OVER	Value	

Table 4 Transformation of place

Models	Related factors	Short description
4Ps	Place	The channel of distribution, or physical place where customers may afford the product.
4Cs	Convenience	Provide customers with easy access to solutions.
4Es	Everyplace	
SIVA	Access	
SAVE	Access	
OVER	Experience	Provide good experiences with all processes that interact with customers.

complexities have come around us until the traditional model of marketing like 4Ps may not fit. Therefore, other marketing mixes, 4Cs, 4Es, SIVA, SAVE, and OVER are interesting and proposed to conform to the current marketplace. These models extended the 4Ps concept that has long been using for decades. Table 1 shows how each model transforms from 4Ps.

4Cs stands for Consumer wants and needs, Cost, Convenience, Communication. It views from a marketing communications and advertiser perspective [31].

4Es stands for Experience, Exchange, Everyplace, Evangelism. This model comes to serve the fast-changing world [32].

SIVA stands for Solution, Information, Value, Access. This model views marketing by changing from a supplier based to customer based marketing. The customer is prioritized in the earlier marketing process rather than the last. Sellers work as a server to respond what customers want [28].

SAVE stands for Solution, Access, Value, Education. This model tunes to serve the B2B world with customer-centric perspective [33].

OVER stands for Offer, Value, Experience, Relationship. This model adjusts to serve complex service, solution, digital world with deeper customer relationship [34].

2.3 Model analysis

The objective of this section is to find factors and their properties that will apply to the KM context. The following comparative analysis identifies similarities and differences among the marketing mix models that are examined. This is done by analyzing the

transformation (or shift) of the 4Ps model to others by comparing their factors' properties.

1) Transformation from product

As shown in Table 2: the two models (SIVA and SAVE) shift from Product to Solution; the 4Cs model shifts from Product to Consumer; and the OVER model shifts from Product to Offer (Table 2).

Product is shifted to a **Solution** to a customer's problem(s). The Solution does not view the appearance feature and function of a product; rather it looks deeper into solving a customer's problem using a product. In the current society, manufacturers offer many products and customers are overwhelmed by the variety of choices. A seller needs to understand the customer's problem and help to solve it. It changes a seller to as a solver. **Consumer** refers to understanding the wants and needs of consumers. **Experience** is understanding a customer's needs from the start to the end of the marketing processes that influence customers. **Offer** is broader in meaning than a solution since Offer can be anything including intangibles that satisfy a customer's needs.

2) Transformation from Price

In Table 3, it is seen that: the three models (SIVA, SAVE, OVER) shift from Price to Value; the 4Cs model shifts to Cost; and the 4Es model shifts to Exchange.

Price is not the only consideration by a customer's decision. Lower price does not always mean competitive advantage. However, **Value** is what customers gain including convenience, elegant emotion, pride, time saving, ease of use, or satisfaction. A customer will

Table 5 Transformation of promotion

Models	Related factors	Short description
4Ps	Promotion	Ways to attract or stimulate customers to buy.
4Cs	Communication	Two-way communication.
4Es	Evangelism	Creating emotion and passion.
SIVA	Information	Giving useful information about the benefit to the customer.
SAVE	Education	Creating an understanding and realization of the solution.
OVER	Relationship	Creating engagement sustainably and a place in the customer's heart.

think about total **Cost** of ownership, what a customer gains in an **Exchange** by comparing worthwhile investments and benefits. The marketer must consider offering what can serve or satisfy a customer for investment.

3) Transformation from place

Table 4 shows that: the two models (SIVA, SAVE) shift from Place to Access; the 4Cs model shifts to Convenience; the 4Es model shifts to Everyplace; and the OVER model shifts to Experience.

Place seems to be explicitly obsolete since information technology has come to play this role. The Internet allows people to communicate through virtual space anywhere at any time. **Everyplace, Convenience, and Access** consider the convenience of the customer in accessing products or services through physical or electronic means. However, **Experience** is broader than Access including whole processes that interact with customers such as ease of use, applying, searching, and learning about products or solutions. These processes must impress the customer at the stages of pre-buying, buying, or post buying.

4) Transformation from promotion

Table 5 displays the shifts from Promotion associated with each of the six models.

Promotion is a process that operates from the seller to the buyer that may create negative feelings or barriers to customers. Oftentimes a customer feels that a seller is pushing too much sale until the customer begins to question the product's quality. This may not be serious for an uncomplex commodity. One can buy a product based on trial and error. However, for an expensive or complex product or solution, a customer needs confidence before making a decision to whom providing a good service in the business lifecycle.

Communication means two-way communication. A seller sends a message to a buyer and receives feedback from him. In contrast, a promotion is a one-way message that originates from the seller only.

Evangelism means creating emotion and passion for a company's brand in order to engage customers.

Information means delivering useful information to customers. Many products send email that becomes junk mail. A popup advertisement comes up when a customer visits websites. These may bring too many messages to a customer who consequently does not

know which product is a right choice. Instead of providing unnecessary promotion information to customers, it should give them information about the real benefits of the products. The marketer must hand on the appropriate information about the solution to help a customer solving problems at the right time. Once the product's information is clear, a customer will usually buy willingly.

Education goes deeper than Information. Apart from giving the correct information, an education goes deeper in creating a realization of the value of the solution. Things today are more complicated than just soap, bread, donut, comb, and toothbrush. An application program for a smartphone requires knowledge to reap benefits from products. For example, Apple Store provides a training course for interested people to learn how to use the Apple product. This makes a user know and aware of the product value.

Relationship is to create an engagement. Promotion for a one-time sale is not enough and continuity must be sustainable. Building trust and confidence to customers will attract to come back or even bring their friends and this can be achieved by building a relationship.

The six models above reveal a different range of offerings to customers. The OVER model appears to address a broad range of offerings to customers appropriate for new styles of businesses while by comparison the SAVE, SIVA, 4Es, 4Cs, 4Ps models represent a narrower range of offerings.

There are a variety of marketing mixes, which are created to provide management suited to different marketing contexts such as Consumer Marketing, Relationship Marketing, Services Marketing, Retail Marketing, Industrial Marketing, Electronic Marketing, and Web Marketing. Some marketing mixes add to, or replace factors in the original 4Ps marketing model. The 4Ps model provides necessary, simple, and applicable factors and it was suitable for the mass marketing era. Whatever elements are in the mix, it must respond to the customer needs and wants [29, 35 - 37].

The 4Ps model was developed in the production era of low technology but the world has evolved to become customer centric with high levels of communication technologies. Consequently, marketing models have developed to meet the current situation.

Table 6 Derivation of the SERVE model from other marketing models

Marketing models						
4Ps	4Cs	4Es	SIVA	SAVE	OVER	SERVE
Product	Consumer	Experience	Solution	Solution	Offer	Solution
Price	Cost	Exchange	Value	Value	Value	Value
Place	Convenience	Everyplace	Access	Access	Experience	Experience
Promotion	Communication	Evangelism	Information	Education	Relationship	Education Relationship
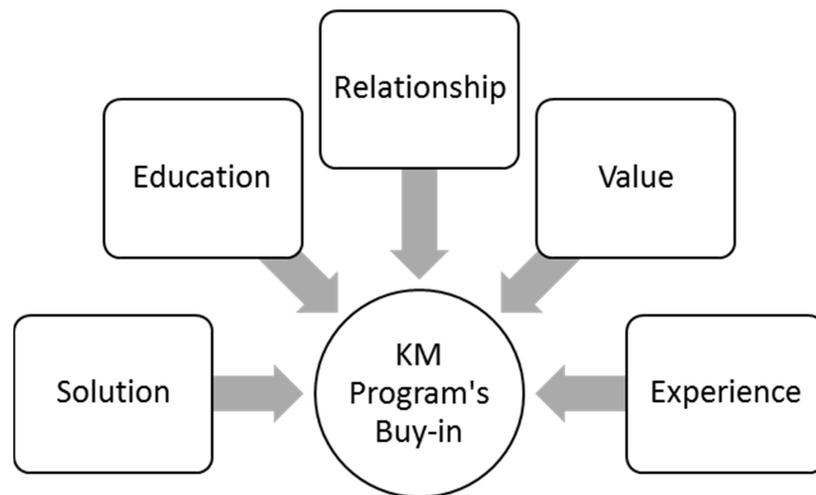
Figure 2 SERVE model affecting KM program's buy-in

Considering the details among the 4Ps and other models, it is seen that they are not that much different concerning the primary role of customers. Therefore, the 4Cs, 4Es, SIVA, SAVE, and OVER models include other factors in order to convey explicit meaning for factors related to contemporary marketing situations compared to the classic purpose and factors included in the 4Ps model. In summary, later marketing mixes modernize the 4Ps model to fit current marketing situations.

3. Results and discussion
3.1 Proposed model

In this section, a new theoretical model (SERVE) is derived from the factors and properties in the model analyses in the previous section. Table 6 displays the inheritance of factors from the six marketing mixes discussed above to form a new KM theoretical marketing model (SERVE).

The SERVE model includes five factors instead of four as in the previous original models, particularly **Education** from SAVE and **Relationship** from OVER. Although these two factors came from the same group, they are different concepts which serve KM in a different manner. Figure 2 illustrates the proposed

KM marketing model SERVE with the five factors displayed in Table 6 having an influence on the extent to which people buy in to the KM program.

This paper applies marketing concepts in the KM context referred to as "Knowledge Management Marketing" with the following details:

- The marketing concept considers the customer as the king and is called customer-oriented marketing. In the KM context, knowledge workers are the target market. Workers are the important source of knowledge. All KM activities require workers' participation. Workers' needs lead to KM activities and this is referred to as "Worker-Oriented KM Marketing."
- Although a KM program or KM activity will respond to knowledge workers, it also conforms to the firm's policy.
- The new KM marketing model is called SERVE which includes factors and properties derived from different marketing mixes. As its name suggests, the term "SERVE" can refer to a KM program that serves the needs of workers.
- KM program's buy-in means that workers would like to participate, be involved in, and share in KM activities.

Table 7 SERVE KM factors

Factor	Concept	Question	Goal
Solution	Creating a KM program based on workers' solution.	How does KM solve workers' problem?	KM program will help workers solving working problems.
Education	Creating understanding and realization in a KM program.	How much do the workers understand or realize processes and benefits of KM?	Workers understand KM processes and their values.
Relationship	Building a healthy relationship between workers-workers and workers-firm to achieve sustainability and engagement in KM activities.	How much do the workers engage, participate in the continuous activity?	Binding workers to KM activity. Workers will participate and re-participate in KM program willingly.
Value	Providing benefits for workers in participating a KM program.	How much do the workers gain or lose in participating KM?	Workers receive appropriate benefits from KM participation overweighing their efforts.
Experience	Creating impression and positive attitude on KM processes.	How much do the workers enjoy a KM activity?	Workers will be happy, enjoy, useful in participating KM.

Table 7 summarizes the properties of the SERVE KM factors.

The following presents the details of the properties of SERVE KM marketing model summarized in Table 7.

1) Solution for Workers

The solution factor means that a KM program or KM activity must aim at solving working problems of workers that will help workers to work better and easier.

Bringing a new KM task to workers may cause resistance which becomes a critical failure factor in a KM project since it will bring another burden to them as well as an extra hassle to adapt to those changes [10], including time to learn a new system and time and effort to participate in KM activities. For example, capturing working knowledge by an after action review [5]. A worker has to spend additional time to write it. The worker questions in his mind: Why must he do an extra task like this? It is a solely firm's benefit that can retain knowledge but not him. Hence, a KM project must bring benefits to the worker's routine task substantially [38]. Workers do not need KM; they need something to help their work [39].

To achieve KM project's goals and objectives, the project must be defined clearly [40]. The result of doing KM in addition to routine tasks must be explicitly informed [10]. A KM program must be thought of primarily as a solution matching with the worker's needs. This KM burden comes with interesting benefits to help them work better, faster, and easier. This burden tends to be welcomed by workers [15, 18]. This solution will reduce resistance, meanwhile increase acceptance of a KM program. Finally, it will obtain cooperation from workers to share their knowledge with a full mind.

2) Educating workers

The education factor means giving knowledge, creating understanding and realization about a KM program to workers, including communication, explanation, training, and convincing people about KM processes or benefits. Workers may not be aware of usefulness of KM program, so that we must communicate and put it foremost in their minds. For examples, explaining how to use KM tools to assist knowledge sharing, convincing how KM will benefit a workers' life, clarifying that KM does not reduce job security. The education will create a right attitude to users who are going to implement a KM program.

Communication and education are keys to improve awareness and understanding of KM. The communication language should be simple, not KM jargon [39]. KM requires worker's cooperation that will happen when workers foresee the benefits of their efforts [38]. Understanding and right communication to KM program are the essential factors to make acceptance and participation.

Just informing workers to help on KM is not powerful enough to call participation. Workers must receive enough knowledge and understanding about a KM program until they realize it. This is not just announcement through a firm's policy or executive's statements about the KM program but with real education. Lipka [15] states that even an order in a military fashion does not cause people to use a KM. Discussion and explanation bring to achieve cooperation, and people must be convinced about the KM processes and its benefits. The benefits to workers must be informed explicitly [10].

Workers might not know what they need, so the firm must educate them. "To gain an edge, the company must help customers learn what they want" [20] that will increase their productivity, to work better, to reduce mistake, and to be more comfortable.

In the knowledge fair, workers may look around and may come across to find what they need [8].

A wrongly perceived image of KM must be avoided [10]. The firm must provide understanding for the KM concept, KM processes, and purposes and goals through seminars, workshops, and training. This will lead to awareness of knowledge and its contribution that will benefit individuals and organizations [38, 40 - 42]. Moreover, the value of KM tool must be indicated [18].

3) Good relationship

The relationship factor means building healthy relationships among workers and between workers and the firm. This relationship aims to affect an engagement of workers in KM activities. KM is a continuous and endless activity [43]. KM activities must be organized continuously in a proactive manner to stimulate workers. Sustainable engagement is necessary by building good relationships.

People involving in any activities will bring about an interaction in some levels such as loose relationship, temporary relationship, or intimate relationship. For example, walking into a store to buy something generates a temporary relationship between a seller and a buyer. If the store needs customers coming back again, a good relationship will bind them together. In the same way, if a firm needs workers to cooperate each other well in KM, it requires a healthy relationship to glue them together. Engagement is a major factor to increase organization's benefits. Involvement of employees in decisions, relationship building, and recognition are drivers to enhance employees' engagement [44].

The relationship is a glue connecting people together. Trust is an origin to a good relationship that can lead to a healthy interaction among people and reflect engagement [45]. Trust is important for the longevity of the relationship. Family-like care is a way to build trust by empathy and altruism which can motivate workers to cooperate [46]. Different relational models cause different customer engagement values. Building relationships can be done through a sense of belonging, care, mutual respect, participation and interaction through community, forum, or event [47].

Management must demonstrate that sharing is recognized more than hoarding in order to build trust with workers [8]. For example, a firm organizes an event to reward a sharer who contributes knowledge to a firm. The event invites executives to salute the sharer, which expresses explicitly that a firm recognizes the sharer. Recognition can build pride to the sharer and affect engagement. Lack of workers' relationships will cause KM program failure [10]. If people do not trust, they will not share their knowledge [17]. Trust among workers will drive knowledge sharing [42, 48]. To be effective in knowledge sharing, a firm needs to create relationships among workers through trust by arranging social events and informal activities from time to time to make them communicate openly [41,

48]. A good relationship between employees and firm will positively affect knowledge sharing [49]. Zhang *et al.* [50] indicates that types of relationship such as compulsory bond and emotional bond positively affect in the sharing of tacit knowledge.

4) Worker value

The worker value factor means that a firm must provide benefits for workers participating a KM program including tangible and intangible benefits such as reward, promotion, recognition. Shallowly, doing KM activities might not be considered to have any cost to the worker but it does. Costs include time, effort, and knowledge. For example, writing a blog to share an experience requires additional time and effort. Some may spend time after work. It may be overlooked that doing KM might impose an extra burden on workers. Moreover, knowledge seems to be an intangible thing without cost or price. Indeed, knowledge is valuable in which Francis Bacon stated, "Knowledge is power." Hence, possessing knowledge empowers that person. Who is going to give valuable things without any returns? Who is going to transfer knowledge, if it moves his power to others, and then reduce his job's security?

Knowledge is like other goods and services; there is a knowledge market with a buyer, a seller, or even a broker. To make knowledge flow and be used smoothly through a firm, we need to understand its driving force that people who exchange knowledge expect benefits. Just because knowledge sharing is an intangible thing, so people involved in the transaction should not care about the benefit. It might not have any conflict or competition on these activities. These views may be too optimistic and lead KM programs to fail [1, 8, 15].

Workers' time and effort in KM activities must be considered as investments of workers in which require appropriate tangible and intangible returns such as a reward, recognition, and incentive system, which are critical factors for KM programs, and emphasized in the KM literature [10, 38, 40 - 42, 48]. As with building customer value, a KM program must build worker value by counting the cost of worker's participation as well as offering appropriate benefits to satisfy workers.

5) Positive experience

The experience factor means that KM must create an impression and a positive attitude to KM processes. Ease of use, reliability, availability, and usefulness of knowledge portals are positive experiences to encourage a worker to use it again and to recommend it to other workers. When workers need knowledge, they can rely on this knowledge portal and it comes foremost in their minds when they need knowledge.

Customer experience is about perceptions of the activities with products or services including before, during, and after sales such as advertising, searching, purchasing, packaging, payment, using,

and after-sales service commonly referred to as touchpoints. Creating a good experience can bind customers as well as encouraging repeat customers [51, 52].

Workers also require positive experience through KM processes or touchpoints. A touchpoint in KM can be a knowledge portal in which workers may interact in searching, posting, and sharing knowledge. A convenient environment is a positive effect for knowledge sharing [17]. Information technology is an important factor for successful KM initiatives and knowledge sharing. Therefore, it must provide a user-friendly system with ease of use which helps workers do their tasks easily and faster [18, 41].

KM need not be organized in an official or serious manner. Enjoyment can attract workers to participate as well as feeling comfortable to join in KM. Games or competitions can be used as a KM activity to persuade and challenge workers to experience KM [53]. For example, organizing quiz games when a firm wants workers to learn a new technology.

3.2 Practical implication

KM implementers including the KM manager and the KM leader are recommended to pay attention to the five factors of the SERVE model in order to ensure workers' effective participation in a KM program.

Firstly, when a KM activity is arranged, it must be a way in which to solve workers' problems. For example, writing an after action review will help a worker to find mistakes and learn to avoid the same mistakes in the future. They can save time for correction. Once, the activity becomes useful to the workers, they will pay attention to it. Secondly, if workers do not know goals of KM, and ways to practice KM activities, how can they participate in them effectively? Hence, education must be provided for workers through training and communication in order to understand the goals, worker's roles, benefits, and processes of KM. Thirdly, good relationships must be established among workers to reduce a barrier related to knowledge hoarding. A community of practice or informal KM activity may be organized that allows workers to join in. This can build a sense of community encouraging trust in each other. Thus, individuals will share knowledge in order to help each other in the community. Fourthly, the tangible or intangible values of KM must be demonstrated to workers. It must be evident to individuals that sharing knowledge and participating in KM activities will produce benefits and incentives. It is not necessary to offer a benefit of high value, just a movie ticket or chocolate bar can be enough to acknowledge their contributions. Finally, positive experience is important in any KM processes. For example, a KM tool for capturing knowledge should provide convenience for workers, so they can search for and find useful content from the KM portal when they need, attracting them to engage with the system. Paying attention to the five

factors in the SERVE model is expected to achieve workers' buy in on a KM program.

4. Conclusions

People is an important factor in KM (not less than process and technology) because valuable knowledge resides in people. Obtaining knowledge from workers is a very significant matter. Hence, persuasion must be done rather than force because knowledge is a part of the people and they need to be willing and cooperative to share their knowledge effectively. In this regard, it is a good idea to apply marketing concepts to the KM context in which workers are considered as the target market. This may be referred to as worker-oriented KM marketing where the workers' needs are recognized and lead the KM activities.

The researcher reviewed a number of marketing mix models. These models are analyzed to find similarities and differences. Finally, the SERVE model is derived from the analyses with the explicit purpose of addressing the people factor in a KM program. The factors in the new SERVE model are validated in the light of findings in the KM literature.

This study is beneficial to both researchers and practitioners. There is a considerable amount of literature concerning KM success and failure factors from a human perspective. However, the findings are scattered and not directed at use for management. For KM practitioners, the new SERVE model will help the KM implementer, practitioner, and policy maker to focus on the important factors to define the strategic plan to influence people to buy in to the use of KM and bring about the effective knowledge management while decreasing the chance of a KM program's failure. Increased workers buy-in to a KM program reduces resistance and increases the acceptance of and willing participation in efficient knowledge sharing.

For KM researchers, the SERVE model represents a theoretical model for further research. The marketing mix models used in this study were limited at six models, so other possible models should be involved for analysis in order to generalize the application of the theory. The objective of this study is to generate this model and it is suggested strongly that the SERVE model needs to be validated in further qualitative and quantitative studies.

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