Management of Knowledge for Business Excellence: The Customer Service Delivery Perspective

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***Abstract*—This paper is analysis of an organization's Knowledge Management Practices, during the research four key capabilities gained from Knowledge Management (Operation Readiness, Operation Effectiveness, Value Addition and Sustainability) were pointed out and data was gathered from questionnaire and lickert's scale. To find out effect of these capabilities on Service Delivery and in turn its role towards achievement of Business Excellence. With the help of quantitative analysis and statistic models, the authors were able to find the effect of each factor on an organization's quest towards achieving business excellence. The results achieved in this study, will help future researchers to find out gaps in implementation of Knowledge Management in organization and pin point the areas which can be tapped for better results using optimum resources.**

Keywords*—*Knowledge Management; Operation Effectiveness; Business Excellence; Service Delivery; Value Addition; Operation Readiness

I. INTRODUCTION

Knowledge is asset and at such it has to be acquired, flourished, protected and employed to create value; this process is known as Knowledge Management [1]. Value created by using Knowledge Management practices enhances organization's capabilities, streamline its processes and by better service delivery to its customers, an organization can create better business opportunities which take the organization to a level where it can achieve business excellence [2], due to this reason extensive attention is being diverted by researchers towards Knowledge Management [3]. Researchers also consider knowledge as the most important driver to achieve competitive advantage and sustained superior organizational performance [4]. Firms acquire competitive advantages with higher order capabilities in exploiting and exploring knowledge [5]. An organization's ability to amalgamate existing and new knowledge is a key success factor in a competitive, knowledge-based environment [6]. Research of McEvily and Chakravarthy investigated the circumstances under which a firm can benefit from creation and sharing of knowledge towards improvement in competitive advantage. A number of following researchers also employed empirical studies and helped investigate various models to measure benefits of knowledge management.

The purpose of this paper is to take up the customer service delivery perspective to develop theoretical links and empirically examine the role of Use of KM towards increased customer service delivery and further examine its function in achievement of business excellence. We propose a research model shown in Figure 1, in which the Use of KM helps promote, Operation Readiness, Operation Effectiveness, Value Addition and Sustainability in the organization's function, these four factors help an organization increase service delivery, further the service delivery helps lead an organization gain Business Excellence.

II. THEORETICAL DEVELOPMENT

Customer focus not only changes our way of thinking towards quality of products, it also changes, various concepts of Management [7]. Firms these days are concentrating more than ever to align their management techniques and production strategies with customer demands [8]. Delivering better service quality, produces measurable benefits in profit, cost savings, and market share, therefore, an understanding of the nature of service quality and how it is achieved in organizations has become priority for research. Parlby (2000), [9] found that many organizations still face serious problems in managing knowledge, such as: the difficulty of capturing tacit knowledge, lack of KM policies, lack of methods for mapping knowledge, and knowledge overload. There are positive effects of Knowledge integration on organizational performance at various levels, such as financial [10], product development [11], and information systems development performances [12]. Moreover, with even distribution of convergence, there is a great chasm to be filled with versatile ideas in this field [13]. The relationships between KM, innovation and performance in Small and Medium Enterprises (SMEs) have been examined by Uhlaner et al. (2007) [14].

According to Liao C et al. (2010) [15], as KM resources are complex to gain and difficult to imitate, firms that achieve competitive advantage through KM have also learned to combine effectively their KM resources to create an overall KM capability. Changing perspectives towards customers benefited in many ways, management to maintain compatibility with market these days don't have to consider too many variables; they can easily investigate customer needs and quickly find a direction to align them with it. According to Yogesh Malhotra [16], "Business environments characterized by rapid and radical change put premium on continuous business model innovation, to deliver novel, sustainable and competitively viable customer value propositions".

The ability of organizations to acquire sustained competitive advantage depends on relative capability development of a firm, and a firm's ability to differentiate its products [17], this process of differentiate and continuously aligning to Customer needs is the key to gain market superiority. This focus towards Service delivery using Knowledge management has also been described for its possible role in creating sustained competitive advantages for organizations [18].

Some of the Measurement approaches for KM like the work of Tobin's Q [19], and Calculated Intangible Value [20], are able to solve this problem only a certain extent. There is a grave need to develop criteria to link KM to such aspects of business which are easily calculated in monetary value. Customer perspective being discussed in this research will solve this problem to an extent where measurements will be made in terms of how better the KM was able to transform an organization's knowledge to the satisfaction of needs of its customers and in doing so, gets benefited in terms of market value. The positive relationship between use of KM and organizational performance has been investigated and reported in prior studies [21].

Previously the research on KM and competitive advantage has emphasized 'description, rather than empirical study' KM can lead to such an advantage [22]. With extensive literature review and observation of various performing organizations of today, several key factors were discovered that contributed towards Business Excellence, out of these, four aspects were found to have been achieved by Knowledge Management in any organization, The core motive of this research is to present an empirical study with focus on these four aspects which are Operation Readiness, Operation Effectiveness, Value Addition and Sustainability, to gauge their role in achievement of Business Excellence with better Service Delivery.

The willingness of organizations, to adapt a customer-orientation supported by quality improvement initiatives, aimed at improving service quality, is critical toward competitiveness in an increasingly competitive service operational environment [23]. Much of these efforts were directed to obtain theoretical and abstract understandings of what knowledge is about.

We propose a research model shown in Figure 1, in which the Use of KM helps promote, Operation Readiness, Operation Effectiveness, Value Addition and Sustainability in the organization's function, these four factors help an organization increase service delivery, further the service delivery helps lead an organization gain Business Excellence.

A. Role of Business Excellence

Business Excellence (BE) is about developing and strengthening the management systems and processes of an organization to improve performance and create value for stakeholders. [24]. BE is much more than having a quality system in place. BE is about achieving excellence in everything that an organization does (including leadership, strategy, customer focus, information management, people and processes) and most importantly achieving superior business results. Lim Siew Lang, Director of Information Technology, ST Electronics Singapore Technologies Engineering Ltd, Recipient of Singapore Quality Award (SQA) with Special Commendation in 2007 said about his firm's quest towards business excellence, "The business excellence journey has strengthened the management of information. The alignment and integration of process across business units have enhanced efficiency and effectiveness. The integration of processes and information has also aided staff to see the big picture and understand how one function can affect the others". Chow Khin Choong, Manager, ST Kinetics, Singapore Technologies Engineering Ltd. Recipient of (SQA, 2007) was saying in his address at the occasion, "The business excellence framework highlighted the once-not-so-visible processes and created greater awareness of performance measures in the organization. More importantly, business excellence represents the underlying platform for other improvement initiatives". According to Kenny Yap the CEO of Qian Hu Corporation Ltd, the first SME to win the Singapore Quality Award in 2004, "If you want to run a company that is sustainable beyond your life time, then yes, you should go ahead and adopt business excellence".

B. Service Delivery

Service delivery is a series of activities which are designed to deliver customer satisfaction. The core objective of this process is based on understanding of the wants and needs of one's customers. [25]. Efficient service delivery leads to the utilization of resources to their greatest advantage and minimizes associated costs. P. Drucker (1988) [26] defined it as "There is only one valid definition of business purpose: to create a customer. It is the customer who determines what a business is. What the business thinks it produces is not of first importance - especially not to the future of the business and to its success. What the customer thinks he is buying and considers 'value' is decisive - it determines what a business is, what it produces and whether it will prosper." [26]. Service expertise should be considered as an important predictor of superior service quality [27], competition in service-based industries depends mainly on the services offered directly [28]. It is particularly important for these services to exhibit the ability to interact and maintain positive customer relations. Since knowledge assets in the service-based firms come from their knowledge base, they continually need to be nurtured and developed the customer service delivery aspect of their business [29]. As per Karl M. Wiig 1999[30], Knowledge

Management Efforts, which become increasingly sophisticated and demanding, must build upon the historic roots of knowledge-related considerations. In addition we must pay attention to developments in technology and people-centric areas like cognitive sciences. In other words, we must rediscover the power of past thinking as well as understand opportunities that lie ahead, opportunities that we can explore through better customer focus and service delivery. Most service organizations ask CSRs to comply with a set of established service guidelines, for maintaining the organization's standardized quality of service as delivered to customers [31].

Employing Humanistic approaches to provide customer services can give improved efficiency for service organization without compromising on, the level of service quality perceived by customers. Such approach has already proved capable for financial services industry for attaining a competitive advantage and efficiency in long run. The second classification scheme focuses upon (1) the level of employee judgment of processes involved in service delivery, and (2) the level of customization of Knowledge [32]. Another concept that can be employed towards gaining a better perspective is the requirement analysis which strongly emphasizes on evaluation, for requirements analysis the aim is often to find out users' needs and then tunes the system to make sure that it really does meet those needs [33]. Approaches to needs detection can be appropriately described in terms of requirements analysis; because of two reasons first because, getting at the users' needs is the aim of requirements analysis [33], secondly research on Customer Management and KM often refers to requirements analysis [35].

C. Sustainability

Defined as the ability "to meet the needs of the present without compromising the ability of future generations to meet their own needs" [35]. According to a study by (David Kiron and Nina Kruschwitz, 2013) [36], in today's ever changing business environment "sustainability is necessary to be competitive". In the same study the author showed that sustainability is paying off for a growing number of companies. Overall, the portion of respondents reporting profit from sustainability went up 23%, to 37% of the total. Nearly 50% of companies have changed their business models as a result of sustainability opportunities — a 20% jump over last year. Marianne Gloet [37] provided framework for Knowledge Management, which came with results that proved that sustainability, achieved through effective KM suggests linkages and means by which organizations can develop leadership and management capabilities.

D. Value Addition

Researchers have described value addition being the basic concern of Knowledge Management Operation, three reasons about these initiatives have been refined to have significant importance, (1) Combining the knowledge chain between previous research, (2) by identification and removal of the barriers to sharing of knowledge between various entities of an organization, and (3) give importance to balance between organizational investments into human resources and increased knowledge. These key reasons if ignored can cause entire activity to fail in spite the availability of all other economic benefits.

E. Operation Readiness

Operation Readiness is the probability that, at any point in time, the system is ready to be placed into operation on demand [25]. Jiun-Sheng et al., (2006) [38] proved that operation readiness have direct relation with customer satisfaction. Achilles A. Armenakis and Stanley G. Harris 1993 [39] described Operation Readiness in terms of the organizational members' beliefs, attitudes, and intentions. It is more part of behavior and attitude which can be complimented with both motivation and training.

The successful execution of the operations of any organization is best achieved with operation readiness, ensuring that all the resources are optimal, and that the service delivery is aligned with the organization's business plan. A number of recent articles have begun to address the calls by Chase (1996) [40] and Johnston (1999)[41] for greater study of service operational competitiveness. These include studies focused on the traditional practices–capabilities–performance relationship [42] as well as newer topics such as new service development [43].

The willingness of service organizations to adapt a customer-orientation supported by quality improvement initiatives, aimed at improving service quality is critical toward competitiveness in an increasingly competitive service operational environment. [23].

F. Operation Effectiveness

Operation Effectiveness is the probability that the Operation can successfully meet an operational demand within a given time when operated under specified conditions. Knowledge, and other Intellectual Capital (IC) components, serves two vital functions within the enterprise. They form the fundamental resources for effective functioning and provide valuable assets for sale or exchange [20].

Our present focus on knowledge, particularly for KM, is often explicitly oriented towards commercial effectiveness. However, there are emerging realizations that to achieve the level of effective behavior required for competitive excellence, the whole process must be considered. We must integrate cognition, motivation, personal satisfaction, feeling of security, and many other factors to make our operations effective [26] A particular KM objective in support of whichever strategy the enterprise pursues is to leverage the best available knowledge and other ICs to make people, and therefore the enterprise itself, act as effectively as possible to deal with operational, customer, supplier, and all other challenges to implement the enterprise strategy in practice.

III. METHODOLOGY

A homogenous sample was chosen to maintain the degree of internal validity, a representation of various sizes,

demographic locations and type of business were selected as the sample frame. A field survey approach was adopted to collect data. It is assumed that all other behaviors and organizational contingency variables are encompassed and scattered evenly throughout the population and sample.

Items representing variables were developed based on items from existing research instruments significantly from Feng et al. (2004) [21] extensive review of the knowledge management literature, and input from knowledge management experts. Reliability and factor analysis were performed to check for reliability and integrity of the scale developed for this research. A five point Likert scale ranging from (1) 'strongly disagree' to (5) 'strongly agree' was used to measure the items.

One potential issue in having a single respondent assess both independent and dependent variables is common method bias, [44] to eliminate this problem, service delivery variable was inquired from the customers rather than the employees of the organization. A separate questionnaire was distributed among customers of the organization at service delivery point. A pilot test was conducted.

IV. ANALYSIS AND RESULTS

A. *Sample Characteristics*

Questionnaires were distributed to the managers of 520 firms in four countries in three continents based on convenient sampling. The first round yielded 48 usable responses from 540 manufacturing/service firms. The second round yielded an additional 58 responses, the last and final round of data collection provided another 51 usable responses raising the total response to 157, and this raised a final response rate to 29.1%. The characteristics of the responding firms are the following:

- Type: Manufacturing=30%, service 50%, both=20%
- Size: very large (24%), large (7.6%), normal (27%), small (9%) and very small (32.5%)
- From: China (35.7%), Pakistan (26.8%), Australia (26.8%), Canada (10.8%)

B. *Reliability and Validity Analysis*

To examine the research instrument and for validation Cronbach's alpha coefficient, was examined .The values of Cronbach's alpha for all the extracted constructs are presented in the first column of Table 1. Factor analysis was used for testing construct validity of the specially developed research variables, the results are as shown in the Table 1. Results showed that all the factor loadings resulted from Factor analysis are greater than the cutoff point of 0.50, as recommended by [45]. All four Knowledge Management results for an organization (Operation Readiness, Operation Effectiveness, Value Addition, and Sustainability) and two measures to estimate the Knowledge Management the Service Delivery and Business Excellence have values higher than the 0.50 cutoff values, ranging from 0.660 to 0.903. However, the factors KM Value Addition and Service Delivery exhibited relatively low Cronbach's alpha scores of 0.660 and 0.682, after retention of one item from the variable, Service delivery.

C. *Regression of the Model*

The final models show the following coefficients:

Fig. 1. Proposed Research Model with Results of Regression Analysis.

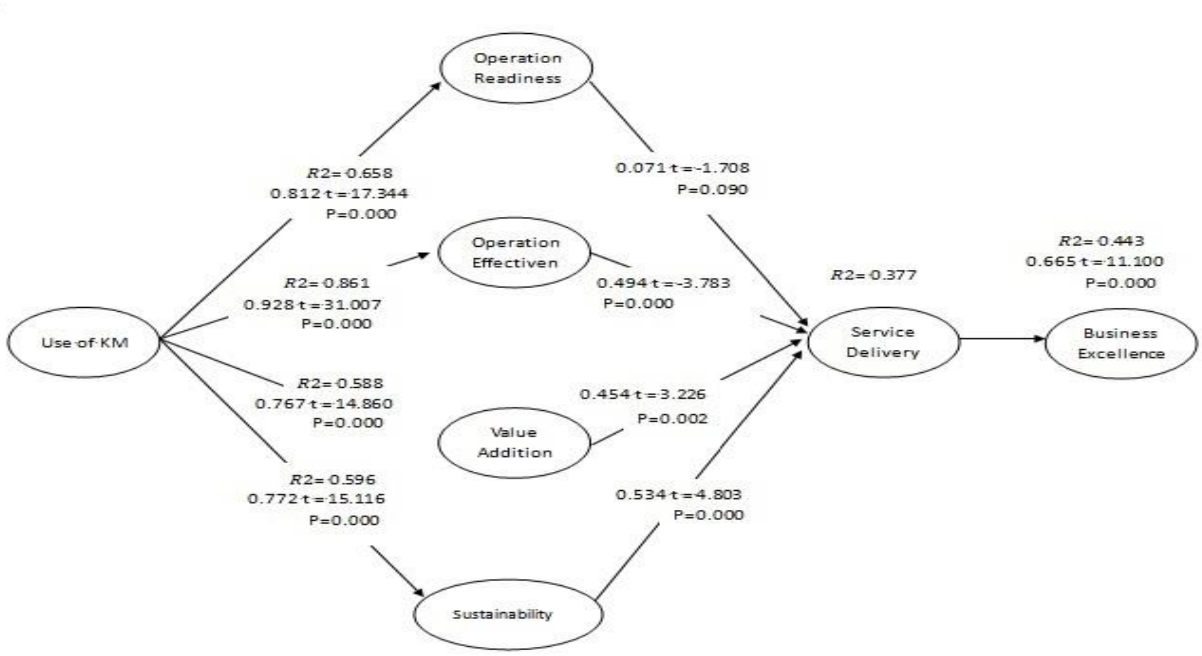

TABLE 1
FACTOR ANALYSIS OF RESEARCH VARIABLES

Factors and Items Description	1	2	3	4	5	6
KM_Operation Readiness (Cronbach's alpha = 0.804)						
KM_Operation_Readiness -1	0.921					
KM_Operation_Readiness -2	0.687					
KM_Operation_Readiness -3	0.887					
KM_Operation_Readiness -4	0.717					
KM_Operation_Readiness -5	0.651					
KM_Operation_Readiness -6	0.769					
KM_Operation_Readiness -7	0.647					
KM_Operation_Readiness -8	0.718					
KM_Operation_Readiness -9	0.846					
KM_Operation_Readiness -10	0.842					
KM_Operation_Readiness -11	0.641					
KM_Operation Effectiveness (Cronbach's alpha =0.905)						
KM_Operation_Effectiveness -1		0.897				
KM_Operation_Effectiveness -2		0.897				
KM_Operation_Effectiveness -3		0.901				
KM_Operation_Effectiveness -4		0.836				
KM_Operation_Effectiveness -5		0.776				
KM_Operation_Effectiveness -6		0.760				
KM_Operation_Effectiveness -7		0.791				
KM_Value Addition (Cronbach's alpha =0.660)						
KM_VA -1			0.735			
KM_VA -2			0.849			
KM_VA -3			0.808			
KM_VA -4			0.604			
KM_VA -5			0.798			
KM_VA -6			0.841			
KM_Sustainability (Cronbach's alpha =0.800)						
KM_Sustainability -1				0.848		
KM_Sustainability -2				0.848		
KM_Sustainability -3				0.864		
KM_Sustainability -4				0.836		
KM_Sustainability -5				0.695		
KM_Sustainability -6				0.902		
KM_Sustainability -7				0.826		
KM_Sustainability -8				0.836		
KM_Sustainability -9				0.747		
Business Excellence (Cronbach's alpha =0.701)						
Business Excellence -1					0.753	
Business Excellence -2					0.786	
Business Excellence -3					0.623	
Business Excellence -4					0.799	
Service Delivery (Cronbach's alpha = 0.682)						
Service Delivery -1						0.849
Service Delivery -2						0.846
Service Delivery -3						0.672
Service Delivery -4						0.807
Service Delivery -5						0.840
Service Delivery -7						0.854
Service Delivery -8						0.841

Table 2
Summary of regression results

Multiple regression model BE= α_1 + β (SD = α+β_1 KMOR+β_2 KMOE+β_3 KMVA+β_4 KMS)		
Function BE = f(SD= KMOR,KMOE, KMVA, KMS))	β	t value
	β = 0.773	t = 11.100*
	β_1 = -0.110	t = -1.708*
	β_2 = 1.485	t = -3.783*
	β_3 = 0.378	t = 3.226*
	β_4 = 1.830	t = 4.803*
	t = 11.100*	
	F= 23.043	
α = α_1 =	2.776 123.043	
R_2 =	0.443	
*P<0.05; ** P<0.01 BE; Business excellence; SD: service delivery; KMOR; KM operation readiness; KMOE; KM operation effectiveness; KMVA: KM value addition; KMS: KM Sustainability		

A multiple regression analysis is used to examine the relationship between Use of Knowledge Management and four aspects of Organization's performance that leads to rise in customer Service Delivery and then the relationship between increasing customer service delivery towards attaining business excellence.

The regression analysis models were run for each of the dependent variable separately and results were obtained as shown in Table 2. The results show that Use of KM has strong association towards all four variables as for Operation Readiness (t =17.344; p = 0.000), Operation Effectiveness (t =31.007; p = 0.000), Value Addition (t = 14.860; p = 0.000) and Sustainability (t = 15.116; p = 0.000). In second step the multiple regressions were performed for effect of above variables towards Service Delivery. The results show that KM Operation Readiness (t = -1.708; p = 0.090) is found to have very little associations with the service delivery. The KM Operation Effectiveness (t = -3.783; p = 0:000); KM Value addition (t = 3.226; p = 0.002); and KM Sustainability (t = 4.803; p = 0:000) variables are found to be essential for Service delivery. Likewise, Service delivery (t=11.100; p=0.000) has a very significant positive effect on Business excellence. Hence KM Operation readiness, KM Value addition and KM Sustainability combine to give an aggregated variable called Service delivery, and its correlation is computed. Further when related to Business excellence, Service delivery shows strong positive relationship.

V. Discussion and Conclusion

This study provides an empirical test of the use of KM towards achievement of business excellence through enhanced service delivery, and provides a two-fold identification of KM resources, capabilities and practices in terms of the factors that influence delivery of services to its customers and further leads us to establish its importance in achieving business excellence. We identified four typical variables that gain value from use of KM namely Operation readiness, Operation effectiveness, Value addition and Sustainability, further empirical analysis examines the association between these four variables and service delivery and finds the relationship to be positive and significant. For instance, enhanced service delivery is crucial for a firm's ability to increase product acceptance.

With this study a link has been established between KM capabilities of an organization and their role towards service delivery, the study serves to inform business managers that customer service delivery of the firms can be effectively managed with the help of improved KM implementation. First, an organization has to focus on its operations for their readiness and effectiveness in service delivery, secondly they should focus on value addition by following latest techniques and using tools of advanced organization management, like customer management systems that come handy towards knowing habits and routines of their customers, third the organization must follow ways to hold on and stay consistent with its operations for attaining sustainability, because only thing that holds the customers together is sustained commitment and untiring effort to deliver the best. Finally, the role of service delivery towards achievement of business excellence is also proved, which is certainly the ultimate objective of any business entity. A firm's KM capability that in one way focuses on customer service delivery also helps attain many back office efficiencies and concentrate efforts of all departments at the single point, that is, interaction with its customers.

The presences of certain limitations suggest that this perspective of KM needs to be the focus of attention for additional research. Although the analysis indicates that better use of KM with an increase in customer service delivery, leads to sustained business excellence the underlying mechanisms and newly developed instrument through which these results are achieved are by no means free of ambiguity. The purpose of this study was to explore the possibility of a positive relationship between use of KM and business excellence. More rigorous studies must be completed to ascertain antecedent and consequent relationships between us of KM and business excellence.

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