

The Contribution of Knowledge Sharing to Organizational Performance and Decision Making: A Literature Review

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Abstract. In current knowledge economy, organizations have identified knowledge sharing as a catalyst to improve business. Therefore, the need to build relationships between organizational processes and knowledge activities are crucial to gain competitive advantages over competitors. However, there are new challenges facing organizations in transferring from business processes to knowledge processes. This paper suggests an integrative knowledge sharing performance framework based on the analysis of literature and the exploration of key performance indicators. Performance measurement is used to evaluate and measure the impact of knowledge sharing to organizational performance, this measurement can further provide support for organizational decision making. A major contribution of this paper is providing suggestions for future research and practices on how knowledge sharing can improve efficiency and effectiveness of employees, also reduce cost and errors in organizational business processes.

Keywords: Organizational decision making · Knowledge sharing · Performance measurement · Knowledge process

1 Introduction

The pattern of change of organizational capitalism has evolved in the last two decades, interest in knowledge management has grown significantly [1–4]. In the same vein, the contributions of related studies in knowledge management, performance management and decision support literature has increased exponentially [5–8], these contributions consist of concepts, applications and interaction of various paradigms of management. Knowledge is a key essential tool for organizational decision making [9–12]. Therefore, there is a swift change in capital investment from physical resources to intellectual resources. The knowledge economy has provided an enabling competitive environment where performance and profitability is driven by organizational owned knowledge apparatus. The need to introduce knowledge sharing concept to augment business processes across all sectors of the organization, which avail the edge above competitors in the industry [13]. However, the success of implementing knowledge sharing with the organizational business processes is dependent on essential organizational factors; these factors can be internal and/or external [14]. According to scholars in this field,

knowledge sharing activities significantly contributed to improving performance, which will directly support decision making [15–17]. Management of decision support systems are influenced by the impacts of knowledge sharing activities on critical management tasks.

The aim of this paper is to provide an in-depth literature review on the knowledge sharing contribution to organizational performance and decision making. An integrative knowledge sharing performance (IKSP) framework has been developed to knit the literature into a body of knowledge and provide guidance to the analysis of literature, in order to elicit future directions. The IKSP can provide an overall picture of future directions in how to facilitate and enhance organizational performance for decision making through the identification of key performance indicators for the actual measurement of the contribution of knowledge sharing to organizational performance.

The sections of this paper are organized as follows. Section 2 introduces the IKSP framework used to analyze the literature. Major findings of the literature review and recommendations for future research are presented in Sect. 3. Finally, Sect. 4 draws conclusions.

2 Deriving an Integrated Knowledge Sharing Performance (IKSP) Framework

A large amount of existing research studies has been published relating to the topic in this review. The main purpose of this literature review is not just to provide a “shopping list” of the published work, but to provide an overview of the body of knowledge, and more importantly to elicit research gaps in the literature and suggest future research directions. Hence, it is important that a framework is developed in order to systematically knit the literature to reveal the relevance and trends of existing work. This section starts with the key components of the IKSP framework, including knowledge sharing, SECI model, Japanese Ba theory and performance measurement approaches.

2.1 SECI Model for Knowledge Sharing

In a knowledge driven environment, knowledge sharing is the platform where employees directly/indirectly mutually ex-change individual ‘know-how’, ‘know-what’ and ‘know-why’. Based on Nonaka and Takeuchi [18], the Socialization, Externalization, Combination and Internalization (SECI) model introduced the knowledge creation process [19–22]. In categorizing the SECI model, internalization and socialization as knowledge sharing process converts organizational knowledge to individual knowledge, while combination and externalization as knowledge sharing process is the transfer of individual knowledge to organizational knowledge. Organizations deploy knowledge sharing activities as a means of tackling unresolved problems, innovation and cost reduction. However, implementation of successful knowledge sharing practices has benefits to organization, such as improved performance and decision making. Tacit and explicit knowledge are the foundations for socialization and combination

respectively, while for externalization and internalization, it will be classified as an equal share of contribution by Abdulla and Mehairi, Akiyoshi, and Blackler [23–25].

2.2 Japanese Ba Theory for Knowledge Sharing

Japanese Ba theory has described by [26–29] relates social context environment with knowledge interaction. There are four types of Ba which are associated with SECI model; originating, dialoguing, systemizing and exercising Ba [30]. It is necessary to understand the characteristics of each Ba concept with SECI model, also the impact on organizational performance and decision making in general. The following sub-sections discuss the bonding of SECI model and Ba theory.

- **Socialization/Originating Ba**
The social context of interaction is described as face-to-face and individuality. This is characterized by care, love, trust and commitment when individuals are sharing experiences, mental models, emotions and feelings. This social context is required when sharing tacit knowledge, also the difficulty in capturing tacit knowledge makes it obligatory to create environment empathy [31, 32]. There is continuity of knowledge transcending from one individual to another during interaction.
- **Externalization/Dialoguing Ba**
The social context of interaction is described as face-to-face and collective, this is characterized by sharing personalized mental models and ‘know-how’, which is grouped as common class and are documented as verified concepts. Therefore, this is an environment where individuals’ ‘tacit’ knowledge is captured during knowledge activities through the organization medium, such as problem solving capturing tools [28, 29]. Dialoguing Ba is conscience with the creation of new knowledge by developing efficient collaboration of individuals with specific tacit knowledge.
- **Combination/Systemizing Ba**
The social context of interaction is described as collective and virtual, knowledge activities are characterized by the consolidation of existing explicit knowledge. It is easier to communicate explicit knowledge in this environment to a big number of individuals using documented resources. In addition, the role of information technology aids knowledge sharing through a collective virtual environment for transfer of explicit knowledge [29, 31]. Among the information technological tools used in combination/systemizing Ba are on-line network, databanks, groupware and social networks. In recent time, organizations promote knowledge sharing by introducing electronic mailing lists and online problem solving groups which consist of employees [28], this medium allows free sharing of collective knowledge to improve performance for making effective and efficient decisions.
- **Internalization/Exercising Ba**
The social context of interaction is described as individual and virtual, knowledge activities are characterized with the conversion of explicit to tacit knowledge. Employees in the organization gain organizational knowledge which is available through virtual media, such as simulation programs and organizational learning

[32, 33]. Internalization/exercising Ba can be synthesized through continuous practice and action [27, 29].

2.3 Performance Measurement

Existing literature in performance draws from various fields of work, increasingly suggests that performance measurement is beneficial to most areas of management and decision making, a good example of the application of performance management is operations management [34]. However, there are research arguments in the performance field suggesting that performance management may not worth investing time and researching on, although literature exists on appropriate performance measurements and the identification of negative outcomes when inappropriate performance indicators are used for measurement [35–37]. Studies have shown that performance measurement is a tool which organizations use for assessment and evaluation of processes, this paper move to achieve the measurement of the contribution of knowledge sharing to improve organizational processes. Research in performance measurement also shows that carrying out test with different quantitative links yield conflicting result, which proves that there are different measuring indicators for a particular performance input. Emerging studies in this field check for comparable quantitative output for input with particular measures indicators [38].

2.4 The Integrative Knowledge Sharing Performance (IKSP) Framework

A large number of related articles have elaborately presented knowledge sharing and its benefits to organization in various capacities. However, there is little related work on the contribution of knowledge sharing to organizational performance in relation to decision making. Hence, the research gap as identified is to measure the contribution of knowledge sharing with specific KPIs ‘key performance indicators’ [39]. In the literature, the social context in which knowledge conversion takes place was extensively discussed and how knowledge participants play critical role. IKSP framework is a knowledge approach with two knowledge sharing categorizations; where the environment for interaction is considered to be face-to-face. Hence, the need to create an organizational culture based on trust, love, and shared mental model which reflects the vision of leadership. As shown in Fig. 1. There are three stages of communication;

- The initial stage for knowledge sharing is to identify employees with experiences which reflects the technical and business ‘know-how’, also the environment for knowledge interaction
- The performance stage is the measuring of the impact/contribution of knowledge with performance indicators, these indicators are industry specific i.e. an industry decides on the processes which indicators are measured with
- Lastly, the decision stage uses some analytical tools to draw conclusions on the efficiency of the knowledge transformation process.

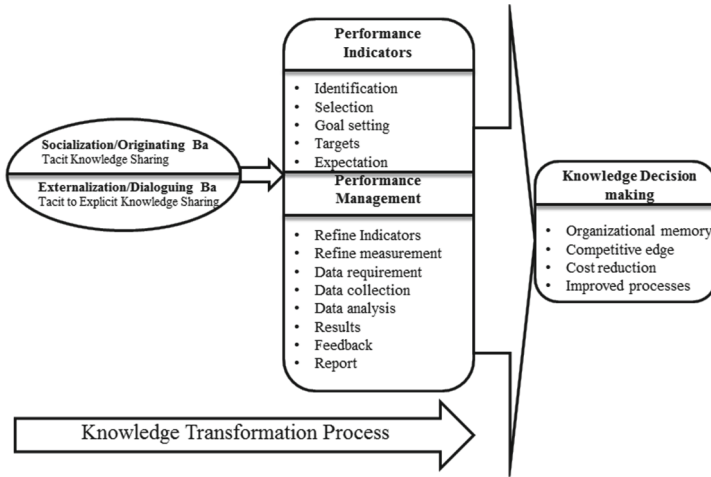


Fig. 1. Integrative knowledge sharing performance (IKSP) framework for decision making.

KPIs are set values or figures which are tools used to measure against targets, goals, and objectives. KPIs provide the platform to compare both internal and external targeted performance milestones. KPIs in IKSP framework are characterized by; (1) the lesser the number of indicators, the better the performance. (2) Knowledge impacted processes should be measured against real factors. (3) Comparing of indicators should reflect past, present, and future. (4) The interest of stakeholders should come first when designing indicators. (5) To achieve a more comprehensive performance, complex indicators should be simplified. KPIs represent organizational key success factors.

2.5 IKSP in Decision Support Systems

Comparatively little research has been conducted on the direct relationship between SECI Model and Japanese Ba theory. Tacit knowledge promises competitive advantage in the evolving organization knowledge decision processes and therefore the measurements of new knowledge processes using the concept of KPIs, provides alliance with decision support systems [40]. On the other hand, tacit knowledge is difficult to share and inherently hinders capitalizing in decision making. However, the need for more research to consolidate previous results and to further understanding of how knowledge characterized by different combinations of the aforementioned characteristics affects decision support processes.

Furthermore, research has examined knowledge sharing from a general standpoint impact on relatively global scales – the extent to which know-how or knowledge processes impact decision support systems [41–45]. A more precise survey of organizational knowledge assets as limited objects of decision making, allowing for more precise elaboration of the effects of knowledge characteristics on organizational decision processes (Table 1).

Table 1. Classification of review evidences. Note: EX = Explorative; QL = Qualitative; QN = Quantitative

Reference	Impact	KS	PM	DM
S. Liao and C. Wu, 2010	EX	✓		
G. von Krogh et al, 2001	QL	✓		
H. Alali and J. Salim, 2013	QN	✓		
C. Liu et al, 2014	QL		✓	
M. Birasnav, 2013	EX	✓	✓	
B. Reich et al, 2014	EX	✓	✓	✓
Y. Lai et al, 2014	EX	✓	✓	✓
T. Kim et al, 2014	QL	✓	✓	✓
I. Nonaka et al, 2000	QL	✓		
Z. Erden et al, 2008	QL	✓		
A. Pässila et al, 2013	QN	✓		✓
J. Sánchez et al, 2013.	QN	✓		
S. Brusoni and N. Rosenkranz, 2014	QN	✓		
G. Johnson et al, 2005	EX	✓		
H. Abdulla and A. Mehairi, 2011	EX		✓	
M. Akiyoshi, 2008	QL	✓		
F. Blackler, 1995	QL	✓		
M. Westerman, 2014	QN	✓	✓	✓
J. Young, 2012	QN	✓		
W. Hanks, 2014	QN	✓		
G. Jiang et al, 2014	QL	✓		
L. Shu et al, 2013	EX	✓		✓
M. Lyles, 2014	EX	✓		✓
R. Maruta, 2014	EX	✓		
D. Esterhuizen et al, 2012	EX	✓		✓
J. Hao et al, 2014	EX	✓	✓	
P. Coram et al, 2011	EX		✓	
G. Castro et al, 2008	EX		✓	
Y. Senoo, and R. Watanabe, 2010	EX	✓		
T. Sumita et al, 2009	QL	✓		
I. Nonaka et al, 2014	QL	✓		✓
I. Nonaka et al, 2002	QN	✓		
T. Alolah, 2014	QL		✓	
H. Wu, 2012	QN		✓	
S. Toor and S. Ogunlana, 2010	EX		✓	
M. Lahoz and J. Camarotto, 2012	EX		✓	
A. Draghici, 2014	EX		✓	
A. Enoma and S. Allen, 2007	QL		✓	
Y. Tsai and Y. Cheng, 2012	QN		✓	✓
C. Ivanov and S. Avasilc i, 2014	QN		✓	✓
S. Liu et al, 2015	QN	✓		✓
R. Speklé and F. Verbeeten, 2014	QN		✓	
K. Howell and F. Annansingh, 2013	EX	✓		
A. Alkhuraji et al, 2014	EX	✓		✓
U. Jayawickrama et al, 2013	EX	✓		✓
B. Wier et al, 2007	EX		✓	
S. Baños-Caballero et al, 2014	QL		✓	
A. Abdel-Maksoud et al, 2005	QL		✓	
S. Liu, 2014	QN	✓		✓
E. Neaga and J. Harding, 2005	QN	✓		

In conclusion, supporting decision making, key knowledge indicators measure the performance of knowledge sharing by comparing the outcome of the organizational process before the implementation of knowledge sharing and after. IKSP framework is a continuous knowledge management framework which is designed to integrate knowledge sharing actively with organizational activities to achieve optimal performance.

3 Major Findings and Future Research Directions

This section discusses major findings and future research directions using the IKSP framework for the analysis of literature, with a focus on how knowledge sharing contributes to organizational decision support. The findings and future directions are organized around, two critical features: Knowledge sharing features and performance measurement features and decision Support Systems and its relationship with knowledge management and information sharing in organization.

3.1 Knowledge Sharing Features

With the identification of research gap from literature, it is important to consider main limitations to the integration of knowledge sharing with organizational processes. The role of knowledge sharing for future research needs to support decision making through its impact on performance. Therefore, the foundation of knowledge has to be embedded in the processes of the organization, starting with the types of knowledge, tacit knowledge as a type of knowledge is context specific, therefore it is very difficult to document, codify and communicate [46]. However, tacit knowledge is understood to be the hub where new knowledge initiate. On the other hand, explicit knowledge is knowledge which can be codify, documented and easily communicated. Hence, the transfer of explicit knowledge is easier carried out through a channel while tacit knowledge requires enabling environment for transfer [11], the difficulties in measuring 'know-what', 'know-why', and 'know-how' have limited related literature [47, 48]. Knowledge sharing strategy ensures that organizations are capable of developing organizational memory by integrating existing knowledge from employees' knowledge domains. Ultimately, considering the fact that organizational memory is built on experiences of employees which are gained over a period of time, therefore the interaction of employees with organizational processes over time deposits new knowledge which improves performance. This feature sets out the knowledge domains which is in existence and focus on sharing that knowledge from individuals to groups, from groups to departments and from departments to the entire organization as a whole. In terms of strategic decision support, the contribution of knowledge sharing is an orientation towards attaining efficiency in organizational processes as well as improving competitive advantage. Knowledge sharing strategy ensures that organizations are capable of developing organizational memory by integrating existing knowledge from employees' knowledge domains.

3.2 Performance Measurement Features

Organizational performance [49] is classified into three main levels; financial, non-financial, and operational level. The financial level of an organizational performance is the net profit derived after sales. Almost all companies focus more on finance performance [39–42]. The non-financial level is considered as the employees' satisfaction, the outcome of finance performance most often dependent on the non-financial performance, while operational level is the performance of the market share, quality of products and services [24]. However, financial and operational performance is directly influence by the efficiency of non-financial performance [25]. During the last two decades, there is a shift from measuring only financial performance to financial and non-financial performance of assets and liabilities. The annual report of the organization reflects the cordial relationship between financial and non-financial entities.

Performance measurement provide a comprehensive view of the organization's achievement over a given period of time, this achievement varies when comparing time periods, and performance is subjected to factors such as; government policy, environmental conditions and other external influences [16, 17]. Therefore, the contribution of either hampers the performance of the other. Most financial performance measurements have national and international report standards. There are guide-lines which are supervised by financial governing institutions, hence, the measurement of financial performance of the organization is easy to quantify. On the other hand, there exist little or no non-financial governing institutions to design a uniform measuring guide-line for the organizations.

In future research, the measurement of knowledge sharing activities needs to be implemented using key knowledge performance indicators, these indicators can be also known as success factors. Knowledge sharing activities are measured using knowledge specific indicators; these indicators are context-defined data collections from organizational processes which interact with knowledge sharing activities.

3.3 Decision Support Systems and Its Relationship with Knowledge Management and Information Sharing in Organization

In this paper, IKSP framework emphasized on identifying and integrating resourceful know-how for organizational decision processes. Two knowledge fundamentals, i.e. SECI model and Japanese Ba theory produced an inter-relationship between the organizational knowledge holders and the context-defined environment which has been specified [6–9]. The advancements realized in organizational knowledge decision processes can be theorized based on contributions stressed in the literature on knowledge and performance issues within the organization. In addition, the introduction of context knowledge application to organization processes provides leverage for interaction between knowledge holders; consequently, reducing operations turnaround time and processes, supporting organizational decision processes. A key benefit of discovering knowledge processes for IKSP is that it propagates expansion of 'organization memory' for the success of organizational operations through advanced 'time-to-decision' [21–24]. Eventually, the knowledge processes and the measurement

Table 2. Summary of research findings.

Research unit of analysis	Findings	Research gaps
Subject specifics	Broad range of different theories and models	Lack of research with continuous approach for dynamic processes
	More quantitative approach	
Knowledge sharing processes	Approaches concentrate more finding on theories	Lack of research on KSP application
Knowledge performance measurement	Broad research arguments findings on performance measurement	Lack of research on integration of knowledge processes with performance measurement
Organizational knowledge processes	Little research arguments available	Inadequate research on the subject

of the contribution to organizational decision processes model can resourcefully support the collaborative decision-making between various knowledge entities, precisely, in transiting from organizational processes to organization knowledge processes. Considering the leadership implication, the benefits of IKSP includes making justifiable integrated decisions based on sufficient planning, sourcing and valuation provided from measureable performance objectives [31–34] (Table 2).

4 Conclusions

This paper reviews existing work focused on contribution of knowledge sharing to organizational performance, and organizational support decision making. An integrated knowledge sharing performance (IKSP) framework has been defined to analyze the literature. Three major landmarks are significantly instrumental in the contextual lay-out of this paper, i.e. the SECI model, Ba theory and Performance measurement. The interaction between SECI model and Ba theory has been specified for future research. Focusing on the outcomes of the literature review, priority should be given to measuring knowledge sharing processes which have added more values to organizational processes and also provide support for decision making [39, 40].

The limitations of this paper are as follows: (1) there are organizational factors which can hinder the successful implementation of IKSP framework, but these factors can be managed based on the interest of the leadership structure. (2) The availability data for empirical analysis is also constricting factor.

This review paper is important for future research due to the following reasons: (1) An IKSP framework that can provide knowledge support for decision making in organizations, knowledge sharing can significantly improve organizational performance by providing an environment for knowledge innovation and support for employees through enumeration. (2) It provides guidance for the measurement of the output of organizational knowledge processes to equip organizations with cutting edge

competitive advantage over competition. (3) It provides guidance based on literature review for the transition from organizational processes to knowledge processes which can reduce operations turnaround time and cost.

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