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**Defining Knowledge
Management (KM) Activities
from Information
Communication
Technologies (ICTs)
Perspective**

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Abstract

KM practitioners or managers may sometimes face difficulties when they

come to adopt definitions to
plan for effective KM and
information infrastructure
in their respective
situations to achieve
organisational competitive

advantage (CA). This paper is to review and examine the variations and similarities from the various definitions of KM activities since 1990s from

the perspective of
Information
Communication
Technologies (ICTs) with
the aim of finding out
which is the most suitable

one to adopt. A keyword index search of 'knowledge management' was conducted on 01 December 2009 in the ProQuest Central online database.

25932 articles were found.
After topic filtering, there
were only 254 articles
related to the keyword and
55 of them were connected
to the 'knowledge

management activities'.
Based on the scope of the
55 articles, this paper
identified that there are
four KM activities: creating,

storing, sharing and
utilising knowledge.

Keywords: Information
Communication
Technologies (ICTs),

Knowledge management
(KM) and KM Activities.

Introduction

Knowledge management (KM) activities are one of the basic requirements to know for any individual who wishes to implement KM in his/her

organisations. The activities are enabled better by information communication technologies (ICTs). However, since the

inception of KM, there are a myriad of definitions given for KM activities by different KM workers for both academic and practical applications. As a

result of this, a clear understanding of KM activities is hence essential for effective development and implementation of KM.

Therefore, this paper is to review and examine various definitions of KM activities since 1990s from the perspective of ICTs with the aim of showing their

variations. A keyword index search of 'knowledge management' was conducted on 01 December 2009 in the ProQuest Central online database.

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management activities'.
Based on the scope of the
55 articles, this paper
identified that there are
four KM activities: creating,
storing, sharing and

utilising knowledge. KM practitioners and managers can adopt this KM activities for implementing KM to effectively implement KM

to achieve organisational
CA.

The following sections of
this paper will first present
the research background of

KM, KM activities, KM system (KMS) and ICTs, and subsequently evaluation of KM activities. Thereafter, a summary of existing KM framework issues

surrounding the KM activities is discussed. Section 6 finally concludes this paper.

Research Background

There are different views of knowledge. These different

views thus lead to different perceptions of KM. From the ICTs view, knowledge consists of data and information that has been organised and processed to

give understanding,
experience, and expertise in
a specific context (Benbya
et al., 2004, Zack, 1999b).

If knowledge is viewed as an object, or is equated with information access, then KM should focus on building and managing knowledge stocks. If

knowledge is an activity,
then the implied KM focus
is on knowledge activity.

The view of knowledge as a
capability suggests a KM
perspective centred on

building core competencies,
understanding the strategic
advantage of know-how,
and creating intellectual
capital. The major
implication of these various

conceptions of knowledge
is that each perspective
suggests a different
strategy for managing the
knowledge and a different
perspective of the role of

systems in support of KM
(Alavi and Leidner, 2001).

In the context of this paper,
knowledge is viewed as an
object and processed-based

since this paper is from the view of ICTs to KM activities (Alavi and Leidner, 2001, Benbya et al., 2004, Davenport and Prusak, 2000, Zack, 1999b).

KM is seen as a broad, multi-dimensional and covers most aspects of business activities (Alavi and Leidner, 2001, Wiig, 1997). The business

activities were perceived as KM life cycle (Benbya et al., 2004). KM life cycle is an iterative sequence of KM activities (Benbya et al.,

2004, West and Hess,
2002).

Methods of Study

This study was carried out by searching publications of works since 1990s which were connected to knowledge management activities. An online

database system
subscribed by Multimedia
University called ProQuest
Central Online database
system was basically used
to carry out the search by

means of keyword index
such as knowledge
management, knowledge
management and
technology, knowledge
management activities, etc.

All the related topics were then reviewed, analysed and summarised on their frameworks defined for KM activities in terms of

number of phases and
definitions of phases.

Results

A total of 55 articles from 1994 to 2008 were found connected to 'knowledge management activities' in the literature search carried out. Table 1 below

shows the summary of the KM activities identified in different frameworks. This table shows that the KM activities consist of three, four or five phases.

Table 1: List of KM Activities from Different Frameworks

**Please see Table 1 in full
PDF version**

**Table 1: List of KM
Activities from Different
Frameworks (continued)**

**Please see Table 1 in full
PDF version**

While there are different KM frameworks that used different number of KM activity phases, Table 2 lists that the KM activity phases used by different

frameworks are mostly three and four. There are 9 articles that used three and four KM activity phases respectively as highlighted in Table 2.

Table 2: Number of KM Activity Phases Used by Different Frameworks

**Please see Table 2 in full
PDF version**

Table 3 shows that there are 34 KM activity terminologies used. The five most frequent used terminologies are create, store, share, distribute and

utilise as highlighted in
Table 3.

Table 3: Number of KM Activity Terminologies Used by Different Frameworks

**Please see Table 3 in full
PDF version**

***Interpreting Knowledge
Management (KM)
Activities***

Knowledge is having more
descriptive value based on

recent frameworks
proposed as in KM
activities. KM activities are
supported by information
infrastructures (Alavi and
Leidner, 2001, Benbya et

al., 2004, Bloodgood and
Salisbury, 2001, Gertjan et
al., 1997, Hahn and
Subramani, 2000,
Holsapple and Joshi, 2002,
Kim, 2001, Nonaka, 1994,

Rajiv and Sanjiv, 2005, Sher and Lee, 2004, Tanriverdi, 2001, Zack, 1999a, Wang et al., 2007). KM capabilities are supported by information infrastructures

(Alavi and Leidner, 2001,
Benbya et al., 2004,
Bloodgood and Salisbury,
2001, Gertjan et al., 1997,
Hahn and Subramani, 2000,
Holsapple and Joshi, 2002,

Kim, 2001, Nonaka, 1994, Rajiv and Sanjiv, 2005, Sher and Lee, 2004, Tanriverdi, 2001, Zack, 1999a). In 1994, Sher and Lee proved that information

infrastructure facility often resulted in greater information infrastructure capabilities (IICs).

Competitive advantage (CA) resulting from the

view of ICT was investigated among researchers within the information system (IS) field (Wade and Hulland, 2004). The primary finding

was organisation that
possesses imitable or-non-
substitutuable resources
often enjoys sustainable CA.

Creating Knowledge

Creating knowledge refers to the development of new knowledge from data, information, or prior

knowledge (Rajiv & Sanjiv, 2005). Creating new knowledge was treated as continued organisational learning which was formed by teams of employees and

synergies emanating from these teams (Nonaka, 1994; Quinn, Anderson, & Finkelstein, 1996). Nonaka (1994) proposed a framework for managing

the dynamic aspects of organisational knowledge creating process. This framework viewed processing information and creating knowledge as KM

activities which can process information and then create knowledge to the organisation efficiently in a changing environment. This framework proposed

“hypertext management”
for implementing more
effective knowledge
creation. The term
“hypertext” is borrowed
from computer software

which allows users to search large quantities of text, data and graphics with a user-friendly interface. The core feature of the hypertext is having the KM

capability of switching
between dynamic aspects
of organisational
knowledge creation. Within
the KM activities of
knowledge creation, the KM

capability is able to distinguish between various KM activities such as acquisition, generation, exploitation and accumulation of knowledge.

Such KM activities are managed effectively by appropriate capabilities and tools. ICT infrastructure such as modern computer systems

enables reconfiguring of
existing information
through the sorting, adding,
re-categorising and re-
textual of knowledge
creation effectively and

efficiently. It is proven that while lots of new KM tool is developed by individuals, organisations play a critical role in articulating and amplifying that knowledge

(Nonaka, 1994). In Sher and Lee's (2004) framework, knowledge creation incorporates organisational and managerial routines. It is

closely related to
innovation (Nonaka, 1994).
For example, KM is
regarded as central to
product and process
innovation and

improvement, the execution of decision-making, organisational adaptation and renewal. In Rajiv and Sanjiv's (2005) framework, knowledge

creation is mostly from combining prior knowledge, socialisation and hiring new employees or by forming external alliances. Knowledge can be

created through collecting
knowledge from new
knowledge, codifying
knowledge and combining
new and old knowledge
(Gertjan et al., 1997;

Nonaka, 1994; Sher & Lee, 2004). It is impossible to manage the requirements for these knowledge flows unless information

infrastructure is supportive
(Sher & Lee, 2004).

Storing Knowledge

While organisations create knowledge, they also forget (Alavi & Leidner, 2001).

Knowledge can be viewed

as an item to be stored for future usage (Zack, 1999a). Gertjan, Rob and Eelco (1997) presented a framework for organising corporate memories. The

goal of the research was to investigate how IICs and knowledge KM tools can be used to realise corporate memories. Any piece of knowledge or information

that contributed to the performance of an organisation could (and perhaps should) be stored in the corporate memory. This included knowledge

about products, production processes, customers, marketing strategies, financial results, strategic plans and goals etc. Sher and Lee (2004) suggested

that more attention should be paid to the storage and retrieval of knowledge. This is because the storage of organisational knowledge constitutes an important

aspect of organisational CA
and high ICTs utilisation
that lead to a reduction of
ICTs application costs.

Sharing Knowledge

Sharing Knowledge is the stage between knowledge acquisition and knowledge utilising of the three basic

activities of knowledge management elaborated by Tiwana (2002). Each stage may take place simultaneously to support each other. Becerra-

Fernandez, Gonzalez, &
Sabherwal (2004)
demonstrated knowledge
sharing as the process
through which explicit or
tacit knowledge is

communicated to other individuals. Three important clarifications are in order. First, knowledge sharing means effective transfer, so that the

recipient of knowledge can understand it well enough to act on it. Second, what is shared is knowledge instead of recommendations based on

the knowledge. Third, knowledge sharing may take place across individuals as well as across groups, departments, or

organisations. Sharing knowledge allows dissemination of skills, experience, and knowledge across individuals, groups, departments or

organisations. The shared knowledge enhances learning and enables employees to be more responsive to environmental change with

lesser cost (Gertjan et al., 1997; Rajiv & Sanjiv, 2005). An expert system that helps a novice technical support person answers technical support calls at the help

desk of Microsoft is a good example of knowledge that is being shared with that person (Tiwana, 2002).

Utilising Knowledge

Utilising knowledge is the actual use of the knowledge, which can be used to adjust strategic

direction, solve new problems, and improve efficiency (Wang et al., 2007). Tiwana (2002) indicated that learning is integrated into the

organisation by utilising knowledge. Whatever is broadly available throughout the organisation can be generalised and applied, at

least in part, to new situations. The expert system example that helps a novice technical support person who answers technical support calls at

the help desk of Microsoft
is a good example of
sharing and utilisation
taking place
simultaneously.

Today, the organisational CA relies less on traditional factors (capital, land, and labour) that was true in the past. Knowledge can be viewed as:

“A resource and now appears to be one of these traditional factors” (Sher & Lee, 2004).

“A process of simultaneously knowing and acting - that is utilising knowledge” (Zack, 1999a).

Emerging KM literature suggested that ICTs have the potential to add value to firms by enabling utilisation of valuable knowledge resources

across the firm (Benbya et al., 2004; Hahn & Subramani, 2000; Holsapple & Joshi, 2002a; Kim, 2001; Nath, 2000; Ngai & Chan, 2005; Sher &

Lee, 2004; Tanriverdi, 2001; Wang et al., 2007). As such, a knowledge driven organisation must effectively and efficiently utilise knowledge to

respond to environment variations to sustain a competitive advantage. Organisations thus benefit from improved dynamic capabilities and

competitiveness.

Furthermore, since high ICTs utilisation leads to a reduction of ICTs application costs, it tends to be a source of CA. Hence

knowledge, like any other resource, demands good utilisation.

Implications, Discussions and Suggestions

Implications

Based on the research
findings and contributions,

there are several implications for the theory about KM activity in view of ICT for organisational CA. This paper provides new insights into KM activity in

two ways. *First*, this research findings appear to provide the review and investigation from a myriad of definitions given for KM activities by different KM

workers for both academic and practical applications. This is due to the progress of globalisation and adoption of KM activities which are viewed critical

for knowledge-driven organisations (Chong, Chong, 2005, Chong and Choi, 2005). *Second*, the suitable definitions of KM activity, which are needed

to invest ICT
infrastructures that are
supported by KM activities
to effectively implement
KM and eventually lead to

organisational CA, can be identified.

Discussions

In general, the different frameworks proposed in

Table 3 share considerable similarities, the only difference is the activity definition. In order to examine the KM activities from a comprehensive

point of view, four most frequently used KM activities are identified, namely creating, storing, sharing and utilising knowledge. These activities

are adopted in this paper as representing a myriad of KM activities.

Consequently, in the context of this paper, the

knowledge development cycle is defined as the systemic activity of creating, storing, sharing and utilising an organisational knowledge.

From the perspective of KM, the definition can be extended to:

“The management of creating, storing, sharing

*and utilising organisation's
knowledge that gives
understanding, experience,
and expertise efficiently and
effectively in a specific
context for achieving*

specific organisational goals”

Suggestions

In this paper, the definition of KM activity is not

complete because other methodologies, such as statistical method, were not included in the study.

The qualitative and quantitative methods are different in both methodology and problem domain. Integration of qualitative and quantitative

methods may be an important direction for future work on KM activities.

Conclusion

In this paper, the author has presented an evaluation of KM activities based on review,

interpretation, and synthesis of a broad range of relevant literature. KM activities are defined as create, store, share, and utilise in the perspective of

ICT. It is hoped that this information will be able to help KM practitioners and managers to identify which definition of KM activities is most suitable to adopt

when implementing KM in their respective situation particularly organisational competitive advantage (CA).

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