CHAPTER II

LITERATURE REVIEW

In the previous section, the introduction of this research was described. The main research question that drives this research is how to develop knowledge management systems prototype for small enterprises using the Wiki environment? This section describes brief reviews of the literature on knowledge and knowledge management, KM in small enterprises, and Wiki environment.

2.1 Knowledge and Knowledge Management

Books and journal publications usually start with definitions, but until now, there is no universal agreement in defining knowledge management. Different authors approach the subject from different perspectives and with different motives. Therefore, they have different definitions on knowledge management.

Defining knowledge management and defining knowledge is quite difficult because concepts and practices are changing and evolving since the early issues arise. Drucker and Earle study [3] describe two main issues on evolving knowledge: i) knowledge is a critical resource, in comparison with land, machines, or capital, and ii) knowledge, in general, poorly managed by

organizations. If more attention were paid to creating, providing, sharing, using, and protecting knowledge, there will be improvement on organizational performance.

2.1.1 Knowledge

Current definitions of knowledge vary from a range of different viewpoints. There is a definition contains a comparatively broad approach because it includes a range of phenomena such as values, insight, and information: *"Knowledge is a fluid mix of framed experience, values, contextual information, and expert insight that provides a framework for evaluating and incorporating new experiences and information. It originates and is applied in the minds of knower's. In organizations, it often becomes embedded not only in documents or repositories but also in organizational routines, processes, practices, and norms"* [5]. Alavi and Leidner summarize the definitions of knowledge and the implications of the various definitions for organizational knowledge management as figured in Table 1 [1].

Table 1. Knowledge Definitions & Their Implications [1]

Definitions of Know-ledge		Implications for Knowledge Management (KM)	Implications for Knowledge Management Systems (KMS)
Knowledge vis a vis Data and Informati-on	Data is facts, raw numbers Information is processed/interpreted data Knowledge is personalized information	KM focuses on exposing individuals to potentially useful information and facilitating assimilation of information	KMS will not appear radically different from existing IS, but will be extended toward helping in user assimilation of information
State of Mind	Knowledge is t understanding	KM focuses on exposing individuals to potentially useful information and facilitating assimilation of information	Impossible to mechanize state of knowing. Role of IT to provide sources of knowledge rather than knowledge itself.
Object	Knowledge are objects to be stored and manipulated	Key KM issue is building and managing knowledge stocks	Role of IT involves gathering, codifying, and storing knowledge
Process	Knowledge is a process of applying expertise	KM focus is on knowledge flows and the process of creation, sharing, and distributing knowledge	Role of IT to provide link among sources of knowledge to create wider breadth and depth of knowledge flows
Access to Information	Knowledge is a condition of access to information	KM focus is organized access to and retrieval of knowledge content	Role of IT to provide effective search and retrieval mechanisms for locating relevant information
Capability	Knowledge is the potential to influence action	KM is about building core competencies and understanding strategic know-how	Role of IT is to enhance intellectual capital by supporting development of individual and organizational competencies

2.1.2 Knowledge and Knowledge Taxonomies

It is important to understand the concept of knowledge and knowledge taxonomies because a theoretical development in the knowledge management area influenced by the distinction among the different types of knowledge [3]. The literature offers a number of different knowledge taxonomies. Nonaka analyzed and developed the most cited classification of knowledge distinguishing tacit and explicit knowledge dimensions [11]. According to Nonaka, tacit knowledge is comprised of both cognitive (individual's mental models consisting of mental maps, beliefs, paradigms and viewpoints) and technical elements (concrete know-how, crafts and skills that apply to a specific context). Other classifications [1] refer the knowledge taxonomies as social (created by and inherent in collective actions of a group), declarative (know-about), procedural (know-how), causal (know-why), conditional (know-when), relational (know-with), and pragmatic (useful knowledge for an organization).

2.1.3 Knowledge Management

KM has become one of the most discussed issues among academics and practitioners who are working in the information systems and human resource management arenas [14]. The KM definition stated by Iandoli and Zollo have been considered the working definition for this research as it simultaneously refers to objectives, knowledge involved, tools and phases of KM: *"KM is the*

process of creating, capturing, and using knowledge to enhance organizational performance. It refers to a range of practices and techniques used by organizations to identify, represent, and distribute knowledge, know-how, expertise, intellectual capital, and other forms of knowledge for leverage, reuse and transfer of knowledge and learning across the organization"[7].

2.1.4 Knowledge Management Systems

Technology can give contribution and support to KM to make it more efficient and effective in different ways. According to Alavi and Leidner, knowledge management systems (KMS) refer to a class of information systems applied to managing organizational knowledge. In other words, KMS are IT based systems that developed to support and enhance the organizational processes of knowledge creation, storage/retrieval, transfer, and application [3].

2.2   Knowledge Management in Small Enterprises

Literatures or journal publications seem to have conducted little research about how small enterprise can explore the potential of KM. The literature review on KM reveals that the most part of research in KM field focused on large companies, and the understanding of the organizational theory and practice considerations of KM has mainly derived from large company experiences [3].

According to the review carried out by Thorpe et al., research on KM in the small enterprise's contexts classified as follows [17]:

1. The knowledgeable small enterprise's manager or entrepreneur;

2. The knowledge systems and routines embedded within the context of the enterprise and their immediate networks;

3. The institutional and policy framework that was intend to support knowledge production within small enterprises.

Besides the number of employees, there are other differences between small enterprises and large companies. Desouza and Awazu study discuss five differentiation of KM practices in small enterprises and large companies [3]:

- In small enterprises, there is lack of explicit knowledge repositories. Instead, each manager/owner acts as the knowledge repository.

- Common knowledge possessed by members of the small enterprises is deep and broad. This common knowledge helps in the organization of work by easing issues of knowledge transfer, sense making, and application.

- Small enterprises by their nature and due to deliberate mechanisms are skilled at avoiding pitfalls of knowledge loss. In cases where employees leave the business, there are plenty of available knowledge resources that can mobilized to quickly filled the void.

- Small enterprises have a knack for exploiting foreign sources of knowledge. Since they are resource constrained, and cannot spend

efforts to create knowledge, they look outside the organization for knowledge.

- Small enterprises knowingly or unknowingly, manage knowledge the humanistic way. Technology seldom made part of the knowledge management equation. The use of technology in small enterprises is mostly limited to acts of automation (such as the use of cash registers) and at times for informative purposes (storing of employee contact information in databases).

Wong and Wong and Aspinwall propose 11 critical factors, which is more comprehensive model for implementing KM in small enterprises [22]:

- management leadership and support;
- culture;
- IT;
- strategy and purpose;
- measurement;
- organizational infrastructure;
- processes and activities;
- motivational aids;
- resources;
- training and education; and
- Human resources management

These model of critical success factors is important because of it can address and deal with when accomplishing KM in small enterprises. This

helps small enterprises to ensure that essential issues and factors covered when they are planning and developing a KM strategy. It can also provide a basis to evaluate the KM practices [21].

2.3 Wiki

This research is using Wiki as a tool that hopefully will enable the KM in small enterprises. Wiki is a set of linked web pages (including the application enabling its development), which is created through the incremental development by a group of collaborating users.

Wiki platforms basically have two main functions, the open editing and edit preservation. Open editing means that anyone can easily edit the content or information on a wiki. The edit preservation is the ability of wikis to retain all edits to and versions of content that available on the wiki. With that both functionality mix together, these functionalities also allow users to "roll back" any changes to the wiki and restore content to a previous version or history. These two relatively simple capabilities of wikis, individually and in combination, can create a robust and transparent collaborative environment [8].

2.3.1 Wiki Characteristics

Most Wiki softwares have searching and indexing capabilities. Wagner described Wiki characteristics as follows [19]:

- It enables web documents to be authored collectively.

- It uses a simple markup scheme (usually a simplified version of HTML, although HTML is frequently permitted).

- Wiki content is not reviewed by any editor or coordinating body prior to its publication.

- New web pages created when users create a hyperlink that points nowhere.

2.3.2 Wiki Design Principles

Wiki has eleven design principles, which originally created by Ward Cunningham [19]. The following table (Table 2) will show those principles.

Table 2. Wiki Design Principles [19]

Principle	Explanation
Open	If a page is found to be incomplete or poorly organized, any reader can edit it as he/she sees fit.
Incremental	Pages can cite other pages, including pages that have not been written yet.
Organic	The structure and text content of the site is open to editing and evolution.
Mundane	A small number of (irregular) text conventions will provide access to the most useful (but limited) page markup.
Universal	The mechanisms of editing and organizing are the same as those of writing so that any writer is automatically an editor and organizer.
Overt	The formatted (and printed) output will suggest the input required to reproduce it. (E.g. location of the page)
Unified	Page names will be drawn from a flat space so that no additional context is required to interpret them.
Precise	Pages will be titled with sufficient precision to avoid most name clashes, typically by forming noun phrases.
Tolerant	Interpretable (even if undesirable) behavior is preferred to error messages.
Observable	Activity within the site can be watched and reviewed by any other visitor to the site.
Convergent	Duplication can be discouraged or removed by finding and citing similar or related content.

A wiki system can gives users almost complete freedom over the content development process without ruled workflow, access restrictions, or structures that have been predefined. The users can allow their own practice to define the structure. This is important, because different users or domains often have – or even require – different kinds of workflow.