In Search of Credible Knowledge

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ABSTRACT
Knowledge users are always concerned about the validity of the knowledge. We study modern knowledge management and its basic model proposed by Nonaka. Humans have studied and managed knowledge since centuries. Similarly, there exist management theories since that time. One of them is Hadith knowledge management. Islamic scholar collected the largest number of hadiths several hundred years after the Prophet (PBUH). We study validation model they used to find the authenticity of the knowledge. We compared both modern Nonaka Knowledge Management Model and Hadith knowledge management. We proposed a new knowledge management module Farooqui Fauzan knowledge management Model (FF (Faroqui Fauzan) Model), here we add a new module, Validation to amalgamate the authenticity mechanism of Hadith knowledge management in modern Nonaka Knowledge Management Model. Furthermore, we propose a point based system to implement Hadith type of validation into the modern knowledge management.

Keywords: knowledge management, information technology, hadith, SECI model, knowledge, knowledge, credibility, knowledge validity, knowledge resources, Nonaka knowledge model.

1. INTRODUCTION
Knowledge management is today’s worlds of huge data has become critical to achieve objectives of the organization. The credibility of the data, information and knowledge in the organization has gained importance in recent years. Particularly in the age of social media and Wikipedia, where authenticity and credibility of the information we get cannot be done.

There are works done to detect the credibility of the knowledge being generated. One such important work was done about 600 hundred years ago. The knowledge of hadiths and their credibility detection was done by group peoples around Prophet Mohammad (PBUH). This system of collection of hadiths and detecting their credibility was one of the best. Because finding out its credibility, the conditions that they apply on the knowledge to be credible are tough and allow only credible knowledge to be part of the system.
This paper studies, modern knowledge managements and its core activities. We further study the historical knowledge management theories. We study in detail, one of the historical
knowledge management techniques, namely hadith management. In the recent past, it has been proved by several studies that knowledge, credibility is critical to the success of knowledge management. We, therefore, introduce a new module, Validation for implementing the credibility of the knowledge being added to knowledge management.

This paper is organized as follows. Section 2 gives details of related studies done. Section 3 explains the basics of Hadith, Science of Hadith, its types and hadith collection. Section 4 establishes the knowledge management and its importance. Section 5 studies Nonaka Model of knowledge management, 6 gave the comparison between Nonaka knowledge management and Hadith knowledge management. Section 7 discusses how Hadith credibility system works. Section 8 combines the credibility of Hadith and other credibility model proposed by Hilligoss, B., & Rieh. Section 9 presents a FF model and explains how, validation works in FF model. Furthermore, it explains how a point based system for the knowledge validations can be implemented.

2. RELATED STUDIES

Recently there has been growing interest among the researcher’s knowledge management and knowledge management theories. Aldhaln, K., Zeki, A., & Alreshidi, H. (2012) had studied, knowledge extraction of Hadith using a Decision Tree algorithm. KM (knowledge management) in Hadith was also worked on by Jbara, K. (2010) using Text Classification Algorithm. Credibility of another two studies, first one is Westerman, et al (2012) who have studied knowledge, credibility of tweets on the popular social networking website Twitter. Second one is Sweetser, K. D. et al (2008), they studied the credibility of knowledge on the blogs among the journalists. Information technology researchers also contributed a lot, for example Bilal k and Mohsin S. (2012) proposed a cloud based distributed system for classification of hadiths.

3. HADITH & SCIENCE OF HADITH

3.1 Hadith
Hadith means sayings of the Prophet (PBUH). It can be simply understood as a description of his action or acceptance to an event which happened in front of him and he showed acceptance of it. Large collection of Hadith Literature guide Muslims around the world in their day to day decision-making. The sayings of the Prophet (PBUH) or Hadith guide everything such as right method of eating, praying, marriages and divorce. After the Quran, Hadith is the second most valuable scholarly resource available to the Muslims.

3.2 Science of Hadith
After the Prophet (PBUH), his companions refer his guidelines about ways of doing the things, which he gave during his lifetime. Over a couple of generations, systematic way was developed to keep a collection of Hadith in authentic and original. Thus next generation started collecting the hadiths from the companions of the Prophet (PBUH). Hadith collectors and writer were called as “Muhadith”. Slowly there was a systematic way of collecting and writing the Hadith was developed. This system is called as the Science of Hadith.
Science of Hadith explains the way to write Hadith. Each Hadith consists of two parts, first is Matn (pronounced as MATAN) and the second is Isnad. Matan is the saying of the Prophet (PBUH) or text of Hadith, while Isnad is the chain of reporters of hadith. For example, the following is a hadith.

“Narrated Qutaybah bin Sa‘id narrated Laith from Hisham bin ‘Urwah from his father from Aisha (may Allah be pleased with her) who said, Hamzah bin ‘Amr al-Aslami asked the Messenger of Allah (may peace be upon him) about fasting while travelling, and he (the Prophet) replied: if you wish to fast do so, and if you prefer to break your fast then you may do so.”

In this above hadith, underlined text is a chain of narrators, while the knowledge is in rest of the text which is called as matan.

### 3.3 Types of Hadith

![Types of Hadith](image)

Some hadiths may have more than one reporter. Prophet (PBUH) said something to his dearest companion; this companion said it to his younger friend. The younger friends were alive during the collection of Hadith. This ISNAD will have two reporters first one is the direct companion, and another one is his younger friend. Here comes the question of credibility. The detecting credibility of a Hadith is of the Prophet (PBUH) was narrated in its original form, or it was modified. To solve this problem, Muhadith wrote a set of rules to detect the credibility of what is being said. Table 2 describes these rules in detail. Chain of reporters of some hadiths is weak, means it cannot connect till the Prophet (PBUH).

Fig 1 shows the types of hadiths.

### 3.4 KM and Hadith

Here comes the next question, what is the relationship of hadiths and the KM? There are similarities between the process of hadith collection, its authentication, its writing and KM. The process of Hadith management is similar to the knowledge gathering, authentication and propagation.

### 3.5 Hadith Collections

![Diagram of Hadith Collections](image)
Two most popular books followed by scholars around the world are hadith collection of Imam Bukhari and Imam Muslims. These two books are the authentic source of hadiths for Muslims. The reason is strict conditions followed by Imam Bukhari and Imam Muslim to include the Hadith in these books. These conditions are described in detail in Table 2.

4. KNOWLEDGE MANAGEMENT

It is crucial to manage the organizational knowledge appropriately and wisely. The important aspect of KM implementation in the organization is the validity of knowledge. The validity of the knowledge is an important element that determines the success and failure of the KM in your organization. An organization must have a proper plan and a strategy to capture, transform and store the knowledge exist in the company and able to utilize it in the future.

Byounggu Choi, Heeseok Lee (Choi, B., & Lee, H. (2003)) studied KM strategy of 58 Korean firms. They found that human-based KM is better compared to the system based. They further found that human-based model is more likely to be effective for socialization while system strategy is more likely to be valid in the combination. They propose a model that suggests that, all four elements of Nonaka Model, socialization, Externalization, combination, and internationalization (Nonaka, I., & Takeuchi, H. (1995)), should be aligned with the proper strategy such as human-based or system based. It should further be aligned with the departments.

4.1 Process of Knowledge gathering

The knowledge is placed after information, whereby it requires several processes before it is called as knowledge. The process of knowledge acquiring itself is innovative process and it has an effect of credibility of the knowledge being gained. Laredo, J., Vukovic, M., & Rajagopal, S. (2012, January) proposed a novel approach to furthering the knowledge through the use of social networking. They suggested a web-based system using crowdsourcing.

4.2 Evolution of Knowledge

As knowledge is evolving and exploding throughout the time, a strategic method is required in order to manage the knowledge effectively and efficiently. Therefore, KM is an approach to manage the essential and useful knowledge in an appropriate manner which resulting in easy access of stored knowledge as well as leveraging the utilization. Leading KM scholars have defined that KM involves with simplifying and improving the process of sharing, distributing, and creating, capturing and understanding knowledge (Gottschalk, P. (2006)). KM has been investigated in various domains and multidiscipline in order to see the significant impact and the usefulness among the individual, society and organizations. Emerging disciplines with KM initiatives are studied in business, economics, sociology, government, technology management and many more. These studies have roots in a long time ago since the KM is introduced in 1980s (Fong, P. S., & Kwok, C. W. (2009)).

4.3 Importance of valid Knowledge
Users of the knowledge are concerned about the validity of the knowledge, Noordin M. F. (2009) discusses, validity of knowledge after studying data, from 114 organizations. Validity test was also studied by Guo-bao, W. (2013) for Chinese Govt knowledge sharing practice. Casselman, R. M., & Samson, D. (2005) has discussed the validity among four main criteria, to be compared. First of those four dimensions is validity of knowledge. He argued that interplay between truth, justification and belief leads to differing degrees of knowledge validity. Peopleware and heartware has been introduced by Noordin, M. F. (2011), focusing on Information and Communication (ICT) domain as shown in Fig. 2.

![Fig. 2. ICT domain](image)

However, the application is similar to the KM discipline. People or knowledge worker drives to the success or failure of the organization. They are the main factor determines whether their acquired knowledge can be managed and utilized within the company or not. Therefore, the ability of the organization on managing their knowledge workers is essential to ensure that their knowledge is preserved and can be leveraged among the employees and to the organizational level. Furthermore, when Peopleware is taken care, it will indirectly concern with their hardware.

Several problems have been found associated with peopleware and heartware when it comes to KM implementation. (Li, W. (2010), Liu, E., & Porter, T. (2010), Tong, J., & Mitra, A. (2009), Disterer, G. (2001) and Hong, D., Suh, E., & Koo, C. (2011)) concludes that culture plays prominent role in ensuring the success of KM implementation. This is vital influence that incorporated in the individual’s belief that determines the willingness to openly share their knowledge. A study made by Li, W. (2010) in the finance company revealed that trust is the barrier towards knowledge sharing. In this context, the trust is more on the confidence level in an employee on the knowledge that they received.

Similarly, in a study done by Liu, E., & Porter, T. (2010) different culture possesses different trust factors. This study found that for American and Chinese employed in the multinational company highlighted that the American community has more trust on the information posted in the ShareNet compared to the Chinese. The Chinese group is more concern on the authenticity and authorities of the information which make them less participate in the knowledge sharing tool. Studies by Al-Alawi et al (2007), Liu, E., & Porter, T. (2010). Tong,
J., & Mitra, A. (2009) and Siakas, K. V. et al (2010) also presents same results regarding trust factor. Whereby the trust relies on the individual that trigger them to share the knowledge. When the trust present in the organization, especially among the workers, teamwork and networks the KM implementation, especially knowledge sharing and knowledge transfer can be occurred smoothly without any enforcement.

5. SECI MODEL (NONAKA KNOWLEDGE MODEL)

(The knowledge-creating company) (Nonaka, I., & Takeuchi, H. 1995) There is a spiral of knowledge involved in their model, where the explicit and tacit knowledge interact in a continuous process. This process leads to the creation of new knowledge. The central thought of the model is that the knowledge held by individuals is shared with other individuals so it interconnects to a new knowledge. The spiral of knowledge or the amount of knowledge grows all the time as more rounds are done in the model.

Fig 2: Nonaka Knowledge Model

6. COMPARING HADITH KM AND NONAKA KM MODEL (SECI MODEL)

Following paragraphs compares, the Hadith Knowledge Model and Nonaka Knowledge Model. The comparison found out that, Hadith Knowledge Model, covered almost all aspects which are written by Nonaka.

6.1 Socialization

The process of tacit to tacit knowledge transfer, wherein knowledge is processed through practice, guidance, imitation and observation. According to SECI model, this is done, when someone who is learning new skills can interact with a more experienced person, ask questions and observe him.

Hadith KM is included in this step, companions, who lived with the Prophet (PBUH), listen to his guidance and learn from his practices.

6.2 Externalization
The process focuses on tacit to explicit knowledge transfer. Externalization is about making an internal understanding more quantifiable like writing documents and manuals, so that the knowledge can be spread more easily throughout the organization and are good at distributing knowledge for repetitive work or processes. In Hadith KM this process was done by Hadith Scholars, they are called as ‘Muhadith’. Several books of Hadith collections were written by Hadith Collectors. Among these, six top most books are more popular. These are called Kutub-e-Sitta (Kutub-e-Sitta):

1. Sahih Bukhari, collected by Imam Bukhari (d. 256 AH, 870 CE), includes 7,275 hadith
2. Sahih Muslim, collected by Muslim b. al-Hajjaj (d. 261 AH, 875 CE), includes 9,200 hadith
3. Sunan Abu Dawood, collected by Abu Dawood (d. 275 AH, 888 CE), includes 4,800 hadith
4. Jami al-Tirmidhi, collected by al-Tirmidhi (d. 279 AH, 892 CE)
5. Sunan al-Sughra, collected by al-Nasa’i (d. 303 AH, 915 CE)
6. Either: Sunan ibn Majah, collected by Ibn Majah (d. 273 AH, 887 CE); Muwatta Malik, collected by Imam Malik (d. 179 AH, 795 CE)

Hadith writers have written Hadith in a well-defined manner, which is part of Externalization.

6.3 Combination
The process of combination is about transforming explicit knowledge to another person’s explicit knowledge. A typical case is when a financial department collects all financial information from departments and consolidates this information to provide an overall profile of the company.

Hadith writers have collected and organized Hadith in their books to subjects, types. For example the books such as Kitabul buyu, this book have all hadiths which are related to sales and purchase (Business). Thus, Hadith KM has component of combination. It includes all types of hadiths into a single collection. This collection provides guidance to Muslims.

6.4 Internationalization
The process of internalization is about transforming explicit knowledge to tacit knowledge in your organization and yourself. Through reading books, manuals or searching on the web, explicit knowledge can be learned. The training program using explicit knowledge to train the user all over the company branches can complete the internationalization.

Hadith teachers have done internationalization work effectively. They helped in transferring the tacit knowledge to explicit knowledge by training students in Hadith science.

7. HADITH CREDIBILITY DETECTION SYSTEM

Let us summarize the conditions put forward by Hadith Scholars, to include hadiths in their collection. A book written by ‘Mohammed Abu Fazal’ called ‘ShurutSitta’ or Conditions of Six Books. The book compiled the basic conditions which were followed by writers of six popular Hadith books.

<table>
<thead>
<tr>
<th>Imam (Hadith Collector, Writer)</th>
<th>Condition NO</th>
<th>Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bukhari</td>
<td>B1</td>
<td>Hadith reported by a person, and chain of reports goes till Prophet Mohammed (PBUH) or a popular companion.</td>
</tr>
<tr>
<td></td>
<td>B2</td>
<td>The entire chains of reporters from reporter to Prophet (PBUH) are proved correct, authentic and reliable.</td>
</tr>
<tr>
<td>Bukhari</td>
<td>B3</td>
<td>Authenticity and reliability of Hadith reporter was evaluated on following factors</td>
</tr>
<tr>
<td></td>
<td></td>
<td>○ Person must not be alcoholic.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>○ Never lie in their life and</td>
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<tr>
<td></td>
<td></td>
<td>○ They never cheat with their wife</td>
</tr>
<tr>
<td></td>
<td></td>
<td>○ He should not involve in any theft or illegal activity.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(This was done with the cross checking of Hadith reporters)</td>
</tr>
<tr>
<td>Tirmizi</td>
<td>B4</td>
<td>In between the chain of reporter, if a Hadith is said by one report to its next reporter, it should be proved somehow that, both exist in the same period, they meet each other in the same city, same place and discussed this matter. It should be proved by some third person.</td>
</tr>
<tr>
<td>Tirmizi</td>
<td>IT1</td>
<td>He also collected, Hadith which was followed any one of Islamic Scholar or Imams.</td>
</tr>
</tbody>
</table>
Among them, Imam Bukhaari was the one whose conditions are most strict. Every other Hadith Book writer seems to be agreed to what Imam Bukhari has followed. Some of those conditions are summarized in Table 2.

8. CASE OF EXTERNALIZATION

Nonaka SECI Model, Externalization focuses on tacit to explicit knowledge transfer. Externalization is about making an internal understanding more quantifiable like writing documents and manuals, so that the knowledge can be spread more easily through the organization.

1. Concern of Knowledge credibility

Converting, tacit knowledge into explicit knowledge requires authenticity to be checked. Writing of documents, manuals require special care so that knowledge being created is not fake, forced or manipulated.

Credibility is defined by Flanagan & Metzger as “Some studies focus on the characteristics that make sources or information worthy of being believed, while others examine the characteristics that make sources or information likely to be believed.”

Table 2 shows three levels of knowledge credibility as proposed by Hilligoss, B., & Rieh S.Y. (2008). Table further display the relation with Hadith credibility detection system, which was used and implemented by Muhadiths (Described in detailed in Section 7).

<table>
<thead>
<tr>
<th>Level</th>
<th>Definition</th>
<th>Types</th>
<th>Influence</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>(Refer Table 3 for Condition Code)</td>
<td></td>
</tr>
<tr>
<td>Construct</td>
<td>Conceptualizations of credibility</td>
<td>Truthfulness 1) Believability(B1,B3) 2) Trustworthiness (B3) 3) Objectivity 4) Reliability(B1,B4)</td>
<td>Provides a particular point of view for judging credibility</td>
</tr>
<tr>
<td>Heuristics</td>
<td>General rules of thumb that are broadly applicable to a variety of situations</td>
<td>Media-related 1) Source-related (B1) 2) Endorsement based (B2) 3) Aesthetics-based</td>
<td>Provides useful ways of finding information conveniently and making credibility judgment quickly</td>
</tr>
<tr>
<td>Interaction</td>
<td>Specific attributes associated with particular information objects and sources for credibility judgments</td>
<td>Content cues 1) Peripheral source Cues.(B1) 2) Peripheral information Object cues (IT1)</td>
<td>Provides specific information source or object characteristics on which to base a judgment</td>
</tr>
</tbody>
</table>
Question is how credibility can be established considering various factors, which contributes to collection, medium or propagation and content types.

Hilligoss, B., & Rieh, S. Y. (2008) presented a framework for credibility assessment. Their conclusion was a framework in three levels as shown below. Three distinct levels of credibility judgments emerged: construct, heuristics, and interaction. The construct level pertains to how a person constructs, conceptualizes, or defines credibility. It is the most abstract level and as involves broad notions of credibility that influence the person’s judgments. The heuristics level involves general rules of thumb used to make judgments of credibility. This level is fairly general, being broad enough applies to a variety of situations rather than specific to any particular situation. The interaction level refers to credibility judgments based on specific source or content cues. A summary of the three levels is presented in Table 1 along with mapping of Hadith credibility detection system, as above.

9. **FF MODEL OF CREDIBLE KM**

We present FF model (Farooqui Fauzan Model) for KM. We introduce new component right before the Externalization. This new model called as ‘validation’. This module implements Hadith credibility detection system for KM.

Externalization converts tacit to explicit knowledge. It means knowledge is being written into book, so as to preserve and write experiences. Before writing it into a book (explicit knowledge), new module Validation will check it according to the rules laid down by Hadith credibility detection system.
9.1 Working of Validation Module
Our validation module will work in principle proposed in Section 7 namely B1, B2, B3 and B4 only. These are the conditions used by Muhadiths to include or exclude a Hadith from their hadith collection (Hadith Book). Conditions are described as follows:

**B1:** states that ‘Hadith reported by a person, and chain of reports goes till Prophet (PBUH) Mohammed or a popular companion’.

**B2:** states that ‘The entire chains of reporters from reporter to Prophet (PBUH) are proved correct, authentic and reliable.’

**B3:** states that credibility of the person who is generating new knowledge will be decided by following factors a) Person must not be alcoholic. b) Never lie in their life c) They never cheat with their wife and d) He should not involve in any theft or illegal activity.

**B4:** states that in between the chain of reporter, if a Hadith is said by one report to its next reporter, it should be proved somehow that, both exist in the same period, they meet each other in the same city, same place and discussed this matter. It should be proved by some third person.

The validation module follows, above conditions to implement the KM in real world.

9.2 Advantages of validation module
This module introduces tough conditions for validation of new knowledge which is being added into the KM system. Condition B1; suggest the root of the knowledge must be connected. It means if one piece of knowledge is being added into the system, that knowledge must be connected to all its dependent predecessor knowledge. Furthermore B2 and B3 states that, credibility of the person who is adding this piece of knowledge must be checked with conditions such as not a liar or not involved in any theft or illegal activity.B4 proves the existence of knowledge and its environmental and geographical validity.
9.3 Implementation

We proposed following point based system for deciding the credibility of the knowledge creator and knowledge created. Here we have interchanged the sequence of conditions considering the academic or worldly KM.

a. If a knowledge creator (employee/researcher) produces a piece of knowledge and proves his credibility, then he must be considered higher. (such as a+)

b. If a knowledge creator (employee/researcher) produces a piece of knowledge and its validity can be proved by basics theories and core knowledge of that subject, author’s authority and knowledge credibility must be considered higher (such as a+).

c. If a knowledge creator (employee/researcher) produces a piece of knowledge and its validity can be proved with core subject knowledge. In addition he can prove the credibility of intermediate sources between the core his knowledge, then the author and his piece of knowledge must be considered as higher than a (such as a++).

d. If a knowledge creator (employee/researcher) produces a piece of knowledge and it proved by the theories of top 5 scientists in that subject then grades must be higher (such as a+++)

e. If a knowledge creator (employee/researcher) produces a piece of knowledge and it proved against the any one theory of top 5 scientists in that subject then grades must be higher (such as b)

9.4 Software Implementation through point based system:

Fig 10 shows the flow of system. Starting from the knowledge creation till knowledge becomes the part of the system and goes to process of Externalization, we add points after checking author and credibility of knowledge’s generated.

Step 1: Check whether author is known and his earlier knowledge was credible then five points

Step 2: Check whether knowledge is compatible with all established theories of the subject then add 5 points.

Step 3: Check whether author can prove the credibility of knowledge creators in the chain then add 5 points.

More the points, credible are the knowledge generated by author or researcher.
10. **CONCLUSIONS**

We studied, Nonaka Knowledge Model proposed in Year 1998 and studied Hadith KM and its credibility detection system, which was setup and implemented about 600 years ago. Hadith KM system was compared components by component and point by point. It was found that, Hadith KM had implemented what Nonaka Model and Unifying credibility framework. We also found that, if we implement the strict credibility checking mechanism of Hadith to commercial KM it will become more credible. Hence we propose FF model for Credible KM.

11. **FUTURE WORK**

If someone studies, further the KM and its credibility problem with respect to knowledge being created in commercial world and online resources, particularly online resource which became rich source of knowledge now days can be compared with highly authentic sources of knowledge such as Hadith collections. Results will create a rich hybrid combination of methods, tools, framework and ideas to have content rich and authentic sources of knowledge.

12. **REFERENCES**


