

A Knowledge Management Model for Internal Auditing

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Abstract: Internal audit is crucial to improve the effectiveness and efficiency of internal controls, governance, and risk management processes in organizations. For an internal audit organization, to benefit from the knowledge of its staff, it is vital to identify the knowledge that is needed to complete quality and efficient internal audits. Knowledge management is a system that is concerned with using to the best advantage knowledge and experience. In internal auditing, knowledge management is increasingly recognized as a tool to effectively manage not only the knowledge of individuals, but also the collective knowledge in the organization. Research on internal audit has appeared since the 1980s and brought many benefits to internal audit activities, but these studies have not explained how knowledge is created during an internal audit. To address the research gap, this study looks into how knowledge is managed in an internal audit process. The applied methodology is to conduct qualitative case study research by using in-depth interviews, observations, and documentary analysis in the internal audit field. Findings from empirical analysis of the case together with the literature review provide useful insights to construct a potential model of knowledge management in internal audit. During an internal audit process, there are three key elements including data, information, and knowledge that internal auditors need to consider. Data is a series of separate observations, measurements, or events in the audited company. Information is the organized data that has been arranged with relevance and purpose for better comprehension of the internal activities. The knowledge generated and applied by internal auditors can be thought of as a collection of specific and broad information sets and experience in similar audit situations. The process of knowledge management in internal audit involves four sub-processes: collecting data, analyzing data to get information, synthesizing information to create knowledge, and improving knowledge by putting knowledge into practice. The research findings imply that the process of internal auditing requires internal auditors to apply not only analysis capacities but also empirical experience in their work. In the internal audit, it requires collaboration from within the auditing organization and from the auditee's sources to enable a valuable outcome for all involved.

Keywords: knowledge management, internal audit, internal control

1. Introduction

Internal auditing is an assurance and consulting activity purported to add value and improve an organization's operations (IIA, 2017). In the model of three lines by IIA (Figure 1), internal audit function serves as the third line of defense in an organization.

Specifically, internal audit function is crucial to improve the effectiveness and efficiency of internal controls, governance, and risk management processes in organizations. For example, Sarbanes – Oxley Act (SOX) in the US require executive boards to issue a report on their internal control systems annually and in order to discharge this obligation, the boards rely on the internal audit function. Section 303A.07 of listing rules on New York Stock Exchange demand all listed firms conduct their internal audit function. In other countries, there are compulsory requirements of internal audit activities for listed or big companies such as in Malaysia in year 2008, Singapore 2012, India 2014 and Vietnam 2019. The importance of internal audit function has been increasingly reported. For a successful activity of internal audit, it is vital to identify the knowledge that is needed to complete quality and efficient internal audit job. Knowledge of internal auditors plays a big role in these duties.

Research on internal audit has appeared since the 1980s and brought many benefits to internal audit activities, however, these studies have not explained how knowledge is created during an internal audit. For example, Messier and Schneider (1988) found that external auditors ranked internal auditors' competence as the most crucial component, followed by their objectivity and work when evaluating the internal audit function.

Mihret and Yismaw (2007) evidenced that internal audit effectiveness is influenced by both internal audit quality and management support meanwhile Arena and Azzone (2007) found the effects of the ratio of internal auditors over employees and the audit committee's involvement in internal audit engagements. In addition, Ma'ayan and Carmeli (2016) proved that the skills, resources, and behaviors of internal auditors support audit learning and assist audited units in improving their efficiency, and effectiveness meanwhile Endaya and Hanefah (2018)

showed that characteristics of internal auditors, the performance of internal audit function and support of other organization members directly affected the effectiveness of internal audit job.

The IIA's Three Lines Model

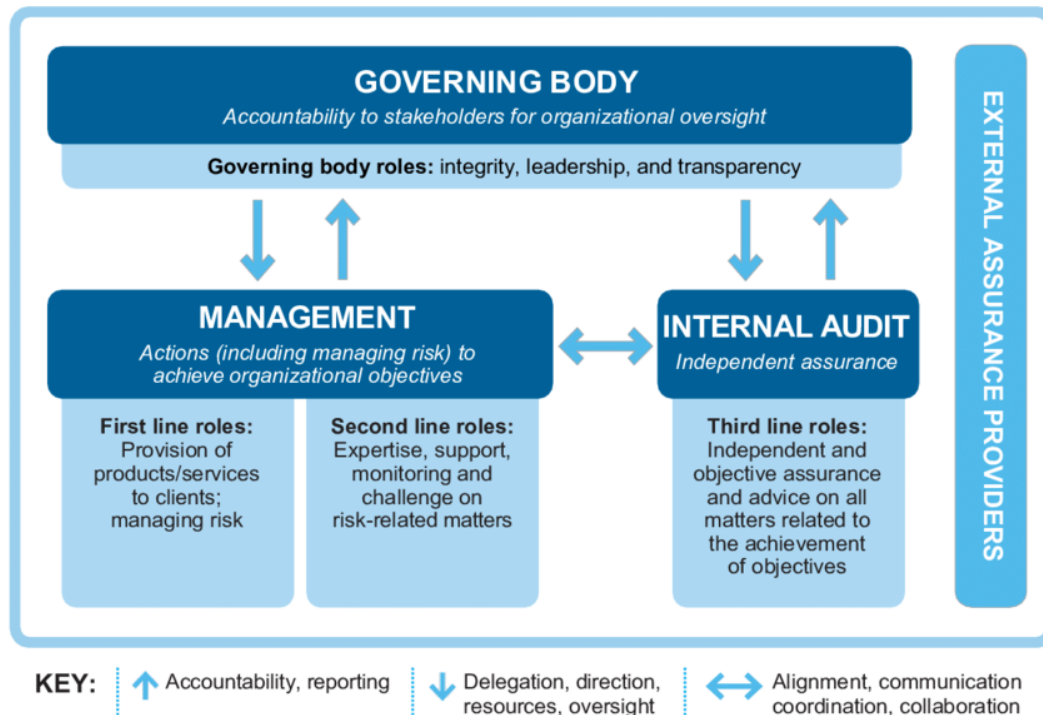


Figure 1: IIA's Three Lines Model (Source: IIA, 2020)

Knowledge management (KM) is a system that is concerned with using to the best advantage knowledge and experience. Currently, KM is being discussed as an emerging topic of theoretical development and practical application (Ragab and Arisha, 2013; Pawitra et al., 2019; Duh et al., 2020). In the area of internal auditing, knowledge management is increasingly recognized as a tool to effectively manage not only the knowledge of individuals, but also the collective knowledge in the organization.

However, there are few empirical studies on the relationship between KM and internal audit. Most of the research tried to find out what factors affected the quality of internal audit jobs rather than focusing on how KM has been applied in that internal engagement. For instance, Mihret and Yismaw (2007), Arena and Azzone (2007) found the roles of management support, audit committee's involvement or ratio of internal auditors over employees affecting the internal audit jobs. To address the research gap, this study looks into how knowledge is managed in an internal audit engagement.

2. Literature Review

2.1 Internal audit theory

External audit area has got more attentions from researchers than internal audit (Gendron and Bedard, 2006). However, the external audit practice has not met the expectation of stakeholders in society which is often called the audit expectation gap. The role of internal audits becomes bold as a way of compensating for the inherent weakness of external audits. There is no consensus on the theory of internal audit. Traditionally, internal audit function is viewed as a component of audit committees or corporate governance mechanism. However, when considering the role of internal audits in real life, it seems to have the best relations to agency theory (Adams, 1994) and behavioral theory.

In a context of agency theory, an agency relationship (between the principal and agent) exists when one party (the internal auditor) is obligated to act on behalf of and in the best interests of the other (audit committees or top management) (Jensen and Meckling, 1976). Internal auditors as agents may have different incentives to be biased in their audit conclusions which audit committees or top management depend on. On papers, internal

auditors are assumed to conduct their internal audit job in professional and due care manners. However, there is always a limitation in any conducted activity. For example, lack of training or competence or even negligence of internal auditors could impair the best interests of principals. Meanwhile salaries, and other related expenses of internal audit function (IAF) can be seen as agency costs. With the above discussion, it is clear that there is a reasonable demand to make internal audit activity more effective and efficient for the best interest of audit committees or top management or ultimate interest of whole company. Sarens et al. (2011) found evidence of monitoring role of IAF in corporate governance mechanism and a substitution effect between IAF and independent members of board.

A book named *A Behavioral Theory of the Firm* by Cyert and March (1963) ignited the development of subsequent behavioral theories in different area such as management, political science, psychology, and economics. The essence of behavioral theory stated that an organization is made up of various individuals and groups (stakeholders), each with its own set of objectives and requirements. These objectives may conflict with one another and with the organization's overall objectives. As a result, activities of people and organizations are not always rational as expected although behavioral theory mostly concerned with rationality, searches for problems, solutions and standard operating procedures (Argote and Greve, 2007). Knechel (2000) elaborated that changes of auditing process to more subjective, and risk-based approaches emphasized the role of judgment placed on individual auditors when making audit decisions. As a part of organization, decisions of internal auditors can be affected by many factors such as the amount and timing of information they have, their knowledge, preferences and judgement on the audited subjects. For instance, Brown-Liburd et al. (2015) found behavioral implications of Big Data on auditors. Specifically, information overload, pattern recognition and ambiguity are challenges to individual auditor during the course of information processing and finally affected the audit decision making. Moreover, Sarens et al. (2015) proved the relative magnitude of the IAF is also influenced by a supportive control environment.

In summary, internal audit activities relate to the context of agency theory (internal auditors as agents in agency relationships) and behavioral theory (works of internal audit are affected by many factors inside and outside an organization that internal auditors serve).

2.2 Knowledge management theory

In essence, knowledge management (KM) can be understood as necessary activities to make the best use of knowledge resources. DIKW (data–information–knowledge–wisdom hierarchy) also called the *Knowledge Hierarchy* is a model originally proposed by Ackoff in 1989. It has been widely used in knowledge management literature. Based on the DIKW model, KM can be viewed as a process that transforms data into information, and then into knowledge (see Figure 2).

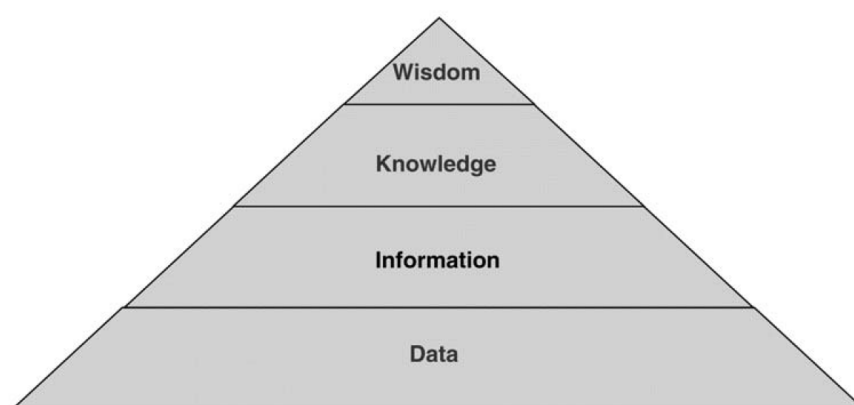


Figure 2: DIKW model (Source: Rowley, 2007)

According to the figure above, data is the entry level of DIKW model and it is the product of observation. Data itself cannot work until it is processed into useable or relevant forms. Information is inferred from data and accommodated in statements on who, what, when and how. Information systems are tools to process, store and retrieve information. Meanwhile, knowledge referred to know-how, and it turns information into instructions. More importantly, knowledge can be achieved by instructions or experiences. In other words,

knowledge can transfer from one individual to another. And the last, wisdom is the highest level of DIKW model and it is possible to enhance the effective use of knowledge. Wisdom adds value and requires judgment. Thus, the ethical and aesthetic values are unique and personal to individuals.

Characteristics of each level in DIKW model can be explained in more detail in the Figure 3 as follows:

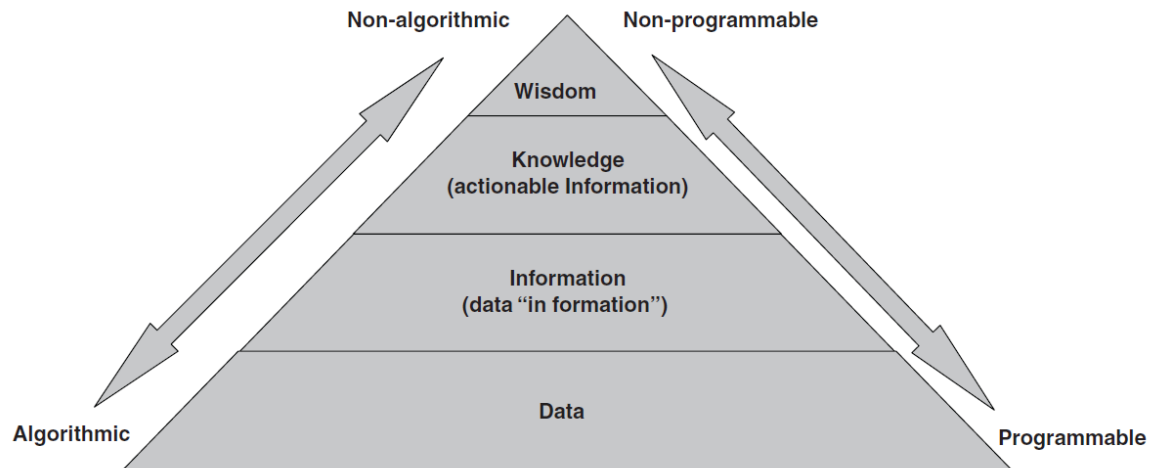


Figure 3: Data, Information and Knowledge (Source: Awad and Ghaziri, 2004)

Other authors provided deeper analysis or elaborated further on the work of Ackoff such as Jashapara (2004) or Bellinger et al. (2004), Nguyen et al. (2015), and Nguyen (2021). For example, Jashapara (2004) labeled knowledge level as “actionable information” and suggested that better decision making was a result of actionable information. Equally, Bellinger et al. (2004) emphasized that with the ethical aspect of wisdom, computers cannot process wisdom, thus, wisdom is unique to human beings. Moreover, Nguyen et al. (2015) proposed a framework of knowledge management in external auditing to emphasize the knowledge process in external auditing. Nguyen (2021) also described a wisdom-based model for external auditing. More importantly, Pawitra et al. (2019) indicated that knowledge has played a significant role in the judgments of auditors and implied enhancing knowledge of auditors resulted in better audit judgments.

These above studies imply many theoretical aspects for knowledge management research in internal audit.

2.3 Knowledge management in internal audit

Internal audit function is a knowledge intensive practice because it requires deep understanding of audited units. To achieve the mission of adding values and improving an organization’s operations, internal auditors must have insightful knowledge to provide assurance and advices on different aspects of operations. Auditors with better audit knowledge could result in better audit conclusions because they could make more appropriate judgments (Knechel et al., 2013). Furthermore, Duh et al. (2020) evidenced that sharing of knowledge within audit firms increased both audit quality and audit efficiency. However, knowledge management in internal audit appears to be a neglected area of research. There are some possible reasons for this state. The first one relates to internal characteristics of an internal audit job. In any organization, internal audit department (function) is an independent unit of all the remaining. No one knows exactly how knowledge of internal auditors is created, shared, stored or enriched. Thus, activities of internal audit department (training, coaching, work procedure setting...) have been quite isolated from the rest of an organization. The second reason is that scope and objectives of internal audit engagement are so diversified depending on intention of audit committee or top management at each organization.

In current literature, there are some studies on KM in external audit. For example, Nelson (2009) evidenced that expert knowledge and judgment of auditors played significant roles in planning an audit engagement meanwhile Rogers et al. (2017) found that knowledge transfer is vital for improving auditor professional skepticism and, as a result, the accuracy of auditor judgments. Thus, KM in internal audits still needs a lot of research works to explore the way KM can affect the effectiveness and efficiency of internal audit engagements.

3. Research Methodology

In order to address the above research gap in internal audit studies, this research aims to explain the empirical internal audit process by using the viewpoint of knowledge management. The conducted major research question is “how has an internal audit process been performed in practice by a company?”. To answer the major research question, we employed a qualitative study to examine the process of internal audit in practice.

The data were collected by interviewing five practicing internal auditors who have long-term experience in the areas of internal auditing, such as working in internal audit departments, performing internal audit projects, consulting for internal audit activities, and so on. All the five interviewees are internal audit managers who have around five to ten years of working experience in the field. The interviews were semi-structured to verify the nature of the research phenomenon. We conducted both face-to-face interviews and online interviews through Zoom video meetings.

To analyze the data collected, interview transcripts were recorded and coded to find out the answer for the major research question. The interview transcripts were analyzed through four steps and supported by MAXQDA 12 software. At first, all the transcripts were thoroughly read as a whole to find out impressive words, actions or processes. Then, all the relevant words, actions and processes were labeled or coded. Next, the important codes were sorted into categories by connecting together based on their meanings. Finally, emerging associated concepts or relationships were identified to describe the tentative framework.

4. Research findings

An internal audit usually is conducted by the company’s internal audit department or an outside service provider who could be an external audit team. The interview findings identify that an empirical internal audit process has been performed through four sub-processes including *planning*, *fieldwork*, *reporting*, and *following up*. In order to conduct an internal audit engagement, each of the sub-processes has its own specific purposes. They have a logical sequence and findings of a prior sub-process is used to perform a later one.

4.1 Collecting general data in planning for an internal audit

The first sub-process of an internal audit is planning phase. Normally, there are two types of planning in internal audit that include annual planning and engagement planning.

- *Annual plan* is an overall plan for all internal audit activities of the fiscal year. It usually is early prepared from the end of the prior year. In the annual plan, based on the scopes of the businesses and numbers of current internal auditors, the internal audit department has to identify the total internal audit engagements needed to be conducted in the next fiscal year.
- *Engagement plan* relates to specific engagement of internal audit. Each engagement plan is defined by a particular objective of internal audit activities. For example, during an interview with an audit manager, he described that: “*internal audit could be conducted for personal loans, secured or unsecured loan activities, operational audit of branches, and so on*”. In accordance with the risk assessments of the internal audit department and the directions of the board of directors, engagement plans are selected.

In the planning phase, the internal audit team aims to obtain background information about the specific audit engagement. The overall data of the audit engagement shall be collected. For instance, if the internal audit is a compliance audit, the applicable laws and regulations, relevant policies, and control procedures will be obtained. In more detail, another internal audit manager explained that “*if the audit relates to personal loans, all relevant information of the loan activities will be collected, such as loan contract, loan agreements, debt-age rating of the loan, debt payment status, list of collateral assets (if any) and so on*”.

After collecting all the necessary data, the audit team will analyze the preliminary data to assess the risk. Each audit engagement has a risk assessment in order to determine which areas with higher risks should be focused on in the audit. According to the results of the risk assessment, the audit manager prepares the audit schedule, allocate the audit staffs, arrange to meet the client and design the audit program.

4.2 Analyzing data in fieldwork to discover audit findings as meaningful information

The audit fieldwork is the second phase of an internal audit engagement when the allocated internal audit team visit their client’s offices to conduct the prepared internal audit plans. Usually, the audit team starts the audit

by arranging a kick-off meeting with the clients to discuss the audit scope and the audit schedule. In this meeting, the audit clients could share their thoughts and concerns about the audit engagement.

During audit fieldwork, the audit team members collect more empirical data about the engagement. For example, an internal audit manager highlighted that *“they can interview their clients about business activities, have site-observations, obtain internal documents, review documents, and perform audit tests”*. The major purpose of the fieldwork is to examine the problems in internal control activities, for example accounting errors, control weaknesses, asset misappropriations, or fraudulent operations. For instance, an interviewee described that *“during the audit fieldwork of an internal audit for a personal loan, the in-charged audit team discovers that the loan object is inappropriate and the loan interest rate is improper in accordance with the company’s regulations”*. In other cases, internal auditors could find the secured assets have disappeared or downgraded the status of those assets.

4.3 Generating knowledge by interactions to build action plan

Reporting is the third phase of an internal audit process. After collecting all the relevant information from the fieldwork, the internal audit team summarizes all their findings, and proposes a tentative action plan. Then, the internal audit team arranges a meeting to announce the results of the audit findings with the client. In the meeting, all the audit findings, client feedbacks, suggestions, and discussions are recorded in minutes.

- Next, based on the results of the meeting, a preliminary internal audit report is drafted. There are some adjustments during the meeting, the content of the preliminary report may be different from the content of the early audit findings.
- Later, the preliminary report is reviewed by the head of the internal audit department or the manager of the internal audit team. From there, the main auditor (in the IA team) will make an official report and send it to the Board of Directors and Supervisory Board. The Board of Directors and the Supervisory Board will then give opinions and agree on the issues in the official report and then send it to the relevant departments. The result of the report is an action plan that is suggested in the preliminary report.

4.4 Putting action plan into practice to revise action plan

After the reporting, the follow-up is a critical step to consider whether the action plan is performed appropriately or not. For example, an internal audit manager stated that *“the following-up sub-process is important and meaningful for future improvement. Usually, internal auditors consider the implementation of action plan and revise it if necessary.”*

In more detail, a follow up sub-process aims to attain these objectives:

- To ensure the proposed audit findings have been corrected, follow-up is performed after one month to one year of the internal audit. The follow-up phase possibly includes some procedures audit fieldwork, such as reviewing new processes or testing documents.
- According to the recommendations of the official report, each department or branch will implement the recommendation of the action plan. Usually, there is an auditor who keeps track of the issues that need to be followed up for an internal audit engagement.
- The follow-up activities have specific deadlines. When the deadlines are over, the follow-up auditor will send a report on the follow-up results to the head of internal audit department to see if the problem is clear.

5. Potential framework and discussions

According to the research findings, this study proposes a potential framework to explain an empirical internal audit process as follows:

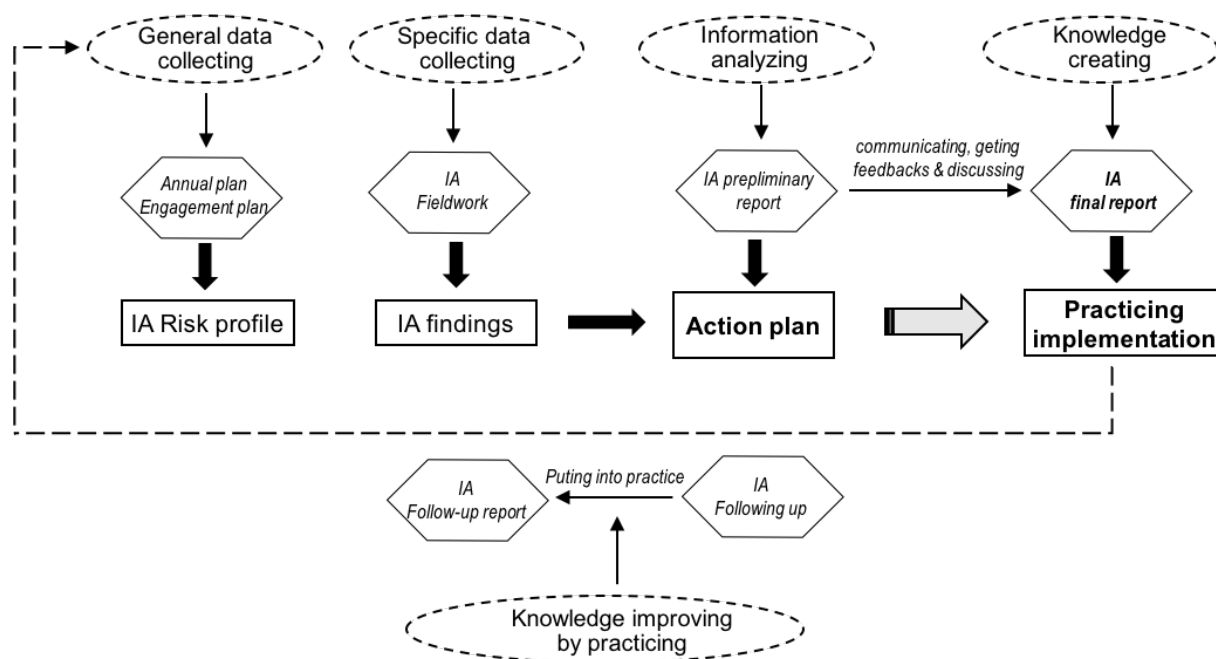


Figure 4: Knowledge Management Process in Internal Audit

The research findings from the interviews, coding results and literature implications suggest us to build a potential theoretical framework of knowledge management in internal audit as presented in Figure 4. Using the knowledge management viewpoint, the framework explains how an empirical internal audit is performed by internal audit team.

The framework, including five steps, describes how: data of internal audit is collected, information is created by analyzing to examine audit findings, knowledge is generated by communications in form of an action plan, and knowledge is revised by putting it into practice.

- The first step of an internal audit starts by collecting general data such as scopes of the businesses, internal audit objectives, number of current internal auditors to prepare an overall plan.
- Then, when the objectives of all internal audit engagements are clearly defined, the in-charged internal auditor for particular engagements continues collecting necessary data for their engagement. In this step, the data is more specific and relevant to the being audited engagement such as background information, relevant policies, internal controls, risk profiles and so on. In the first two steps, data is collected as a series of separate observations, measurements, or events in the audited company.
- In the third phase, all the above data is analyzed to create new findings of the internal audit engagement. This phase aims to create new information from the collected empirical data. Newly created information involves all discovered issues in the internal audit such as accounting errors, control weaknesses, asset misappropriations, or fraudulent operations. In this analyzing step, information is organized and arranged with relevance and purposes for examining new audit findings.
- Next, new information needs to be communicated with the audited company. Through the process of communicating, getting feedback and negotiating about the audit findings, details of potential actions are decided. In this phase, knowledge is generated in form of a final action plan for the internal audit engagement.
- Finally, the action plan is put into practice to justify and revise the action plan if necessary. This phase relates to following-up activities when final action plan is conducted in real life context.

During the above internal audit process, individual auditors contribute their knowledge to build the action plan for particular audit findings. In reality, the interviewed auditors said that they did not be aware of KM application but they did understand that they must use their knowledge and experience to develop the action plan. Then, after each audit engagement, they can memorize that experience and applied to a similar situation in the next audit job. In other words, their understanding and experience have been enriched after each engagement. However, the kind of knowledge that individual auditor learnt can be classified as tacit knowledge because it

has been done on individual base with different extents. The collaboration inside and outside the auditing department created explicit knowledge that all auditors can learn collectively.

The research findings imply that the process of internal auditing required internal auditors to apply not only analysis capacities but also empirical experience in their work. In the internal audit, it requires collaboration from within the auditing organization and from the auditee's sources to enable a valuable outcome for all involved.

6. Conclusions, limitations and suggestions for future research

The paper sought to answer the main research question by proposing the model of knowledge management in internal audit based on an empirical case study. This model possibly sheds more light on the way KM has been created and managed in the area of internal audit. The research findings imply that the process of internal auditing required internal auditors to apply not only knowledge but also professional judgments in their work. In addition, for a success of an internal audit engagement, it requires collaboration from within the auditing department and from the auditee's sources to enable a valuable outcome for all involved.

For practical contributions, this paper recognized the importance of KM in each internal audit activity and it implies the need of formalization of KM in internal audit operation that require the attention of senior management or Supervisory Board.

The numbers of interviews used in this paper are still limited and thus the conclusions could be challenged by other research with larger sample sizes. In addition, all of the internal auditors in this paper have been working in one country (Vietnam) and in the financial service industry, so there could be a concern of geographical area and the business sector.

Future research can be conducted at a larger scale or specialized in each sector such as banking, production or retailing to explore in more depth the way KM has been applied in internal audit activities.

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