



## A proposed model for disclosing the role of the collective intelligence system in improving joint auditing \*

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### Abstract:

This research aims to present a proposed model for disclosure and documentation when performing the audit according to the joint audit method by using the questions and principles of the collective intelligence system, which leads to improving and enhancing the efficiency of the joint audit, and thus enhancing the confidence of the parties concerned in the outputs of the audit process. As the research problem can be formulated through the following question: “Does the proposed model for disclosure of the role of the collective intelligence system contribute to improving joint auditing?”

The proposed model is designed for the disclosure of joint auditing and the role of collective intelligence in improving it to achieve integration between the auditor's report on the one hand and the joint audit information on the other hand, by disclosing the joint audit information in the explanations complementing the audit report that should be available in the current audit file of the economic unit in question. Auditing, by merging the questions of the collective intelligence system (who, what, how, why) with the indicators of the quality of the audit, and the research reached a set of conclusions, the most important of which is unified documentation of the joint audit work in the audit office as it is permissible to use the collective intelligence system—documenting the work carried out by members of his team independently of the other office. As for the most important recommendations, they were represented in need to adopt the proposed model for using collective intelligence to improve the quality of joint auditing performance, which aims to provide a mechanism for disclosure and documentation of joint auditing.

Research Type: Research Paper

\* Research is drawn from a master's thesis

## 1. Introduction

The European Commission proposed in its Green Paper in 2010 the use of joint auditing processes improve the quality of auditing and reduce the market focus of audit services. This proposal came after the organizers of the audit profession around the world demanded the necessity of reorganizing the profession, especially after the collapse of society's confidence in the auditing profession due to financial crises and the collapse A number of large companies that the auditing profession has failed to prevent, and international auditing standards encourage the discovery of new ways to improve the quality of auditing, and among these methods is the (collective intelligence system) that works in an environment of communication, coordination and cooperation between individuals, which made It is important to research the possibility of using this system to support the joint audit method by employing its principles and questions in the formulation of a model that contributes to improving joint auditing in several aspects, the most important of which is the disclosure and documentation of joint audit information.

The research problem is represented in "that the audit report does not include disclosure of information related to the method and mechanism by which the joint audit work was carried out, in accordance with the principles and foundations of the collective intelligence system, as well as the lack of specification of the responsibilities and the persons who performed the joint audit work, which affected the lack of integration." All information contained in the audit report provided by this system "which may weaken the importance of the audit report for the stakeholders with the economic unit."

The importance of research stems from the possibility of formulating a model to disclose all information related to joint audit procedures using the questions and principles of the collective intelligence system, documenting this information with each of the parties to the joint audit, in addition to documenting it in the current audit file of the economic unit.

This research aims to formulate a model for disclosure and documentation of joint auditing and to explain the role of the collective intelligence system in improving it.

## 2. The compatibility between the collective intelligence system and the common auditing method (the theoretical aspect)

### 2- 1. Collective intelligence system:

2-1-1 The concept of a collective intelligence system: The concept of collective intelligence has received the attention of many researchers. Although the term collective intelligence is not used explicitly, this term has roots that extend back to the sixties of the last century. Breakspear points out that intelligence means knowing how to work and express the main ideas, making plans to communicate ideas so that they can be clearly understood, as well as checking to know if there are mistakes that may occur while doing the work that should be done. (Breakspear, 2013: 4)

As for the term collective, it refers to a group of individuals, who are not necessarily demanding of the same positions or views, but who work together to find solutions to a specific problem. (Leimeister, 2010: 245).

Collective intelligence has been defined in different words, but they give close meanings and connotations. These definitions are divided into two basic types:

**A. Traditional collective intelligence:**

It is seen from the human side only, i.e., cooperation between a group of individuals through interaction between them and cooperation in order to solve problems and make decisions, as (Yassin, 2012: 14) defined it as the product of the joint work of groups and their ability to develop non-abilities. Intelligence preceded by intelligence cannot be achieved individually as (TSE 2014: 10) sees it as the ability to collect knowledge and compare observations with others to achieve a common goal.

(Malone & Bernstein) defines collective intelligence as groups of individuals who collectively behave in ways that appear intelligent (Malone & Bernstein, 2015: 3).

We conclude from the following definitions:

- Collective intelligence is based on the logic of working as one mind and the expression of the team as one voice.
- Team members realize that not everyone can know everything, but everyone will know something, and by gathering their knowledge together and sharing the same goal, they can achieve their goal easier.

**B. collective intelligence as an information system**

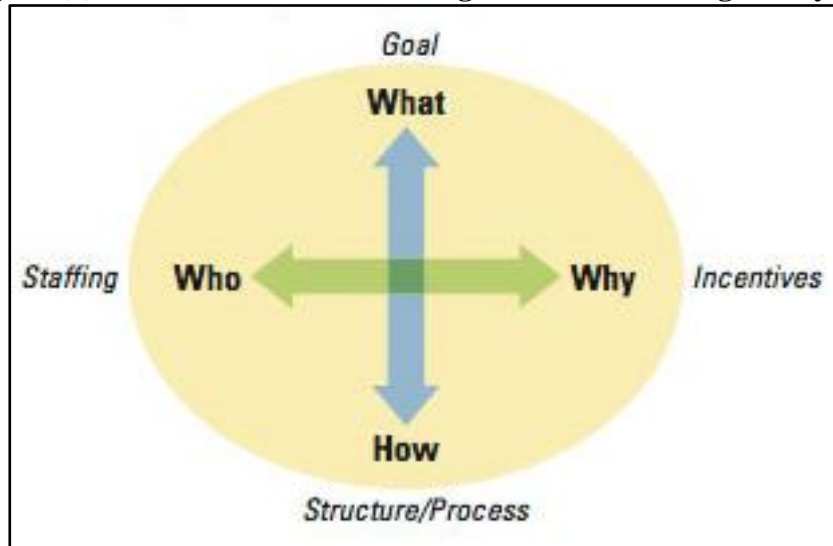
Collective intelligence is seen as an information system in which technology is shared to help group members. It has been defined as a tool to connect people and computers that create an intelligent system to achieve added value (Svobodova & Koudelkova, 2011: 944). Collective intelligence has also been defined as large groups of individuals who work. Collectively through the use of technology that leads to high-level intelligence and benefit to society (Skarzauskiene & Maciuliene, 2015: 318), and (Grimon, 2017) indicates that collective intelligence is a system that arises from the interaction and interconnection between its parts and components as:

- Data, information, and knowledge.
- Software and hardware
- Experts and stakeholders produce knowledge through their inputs and observations.

**2- 1 -2 - The foundations of building a collective intelligence system**

The Massachusetts Institute of Technology (MIT) has established a specialized center called (the Center for Collective Intelligence), and researchers at the center have identified a group of (building blocks). They call these building blocks "genes" of the collective intelligence system, and a gene is defined as a specific answer to one of the key questions (what The who, why, and how) associated with a single task in a collective intelligence system, and these regulatory genes are the basic elements from which collective intelligence systems are built, and a complete gene mix can be viewed as the 'genome' of this system (Malone et al.,2010: 23), and the following figure shows the foundations of building a collective intelligence system:

Figure (1) the foundations of building a collective intelligence system

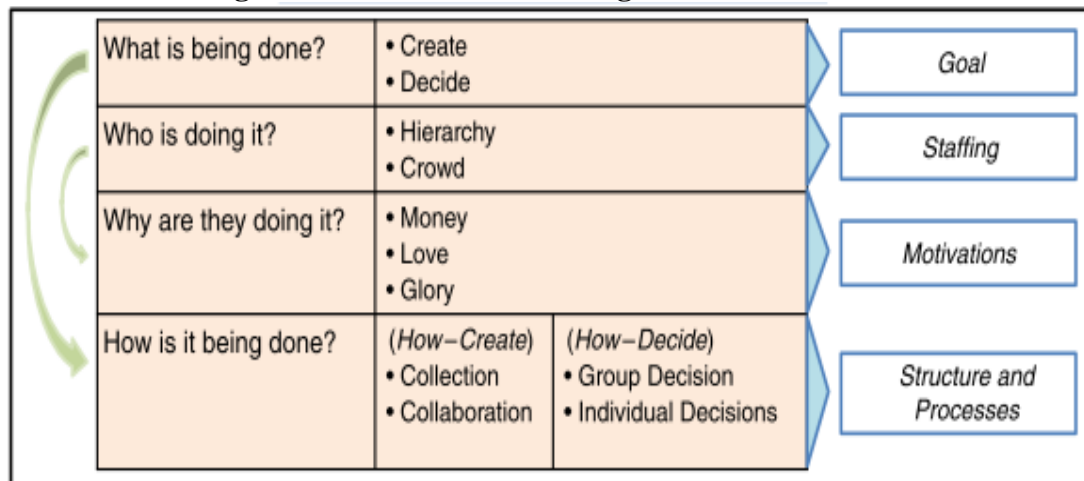


Malone, T. W., Laubacher, R., & Dellarocas, C. (2010). The collective intelligence genome. MIT Sloan Management Review, 51(3), p23

To classify these building blocks, four questions are identified that are used in the collective intelligence system:

- a. The question (what) is related to the goal or mission of the organization or team; this is done through two procedures: (Generating new ideas) (making a decision). The existence of these two measures depends on the primary objective of the task.
- b. The question (who) is related to the persons involved in the procedures to achieve the mission, as the task can be accomplished by people in the form of (hierarchy) or (group or team).
- c. The question (why), which shows the reasons that motivate individuals to do the task, namely: (love and creativity at work) (glory and fame) (money)
- d. The question (how) that expresses how the members of the team perform, whether they are collectively or independently of each other, this vision leads to the emergence of four types of genes, namely:
  - How-create: The two genes associated with the task of creation are (assembly) and (cooperation).
  - How - decide: The two genes associated with a decision task are (group decision) and (individual decisions).

Figure 2: The collective Intelligence MIT Genoma.



Secundo, G., Dumay, J., Schiuma, G., & Passiante, G. (2016). Managing intellectual capital through a collective intelligence approach. *Journal of Intellectual Capital*. p: 305

### 2 -1 -3 - Principles of the collective intelligence system

Collective intelligence requires a set of principles to be an effective system that contributes to improving and developing the performance and knowledge of the team members who deal with it to perform the tasks assigned to them, including (Gregg, 2010: 134)

a. A specific description of the task: It is necessary that the goal of the task to be performed by the team that uses the collective intelligence system is clear and specifically described so that the team members can perform the task and reach the best results.

b. Data is the key: The collective intelligence system is a data system in which the knowledge available to workers is collected, and data is classified, analyzed, and reused when needed.

c. Users are adding value: It is necessary that the collective intelligence system be designed in a way that helps the members of the team assigned to the task to access data and information, modify it according to the task and update it.

d. Facilitating data collection: The collective intelligence system is designed in a way that allows the collection of data automatically and naturally every time the system is used, making it easy to retrieve it when needed.

e. Facilitating access to data: the collective intelligence system is designed in a way that makes data access easy and available to team members and to perform more than one task at the same time.

f. Facilitating access to all devices: The collective intelligence system is designed in a way that makes access to data easy and available to team members, whether from the computers available in the economic unit or the personal devices that they use to perform work outside the unit.

g. Real-time and continuous updating: the collective intelligence system is designed in a way that provides data and information for team members on an ongoing basis to be used in the tasks they are assigned to, and this data and

information develops and is updated automatically as the knowledge of the team members develops.

#### **2- 1 -4 - The influence of collective intelligence on team performance**

One of the main reasons why organizations use teams and not just individuals is access to a variety of information, perspectives, and skills that serve the goals of the economic unit as a whole or the main goal for which the team was created. Research has indicated that the collective intelligence of a team is a much stronger indicator of The performance of the team from the ability of individual members (Woolley et al., 2010: 688) and that the collective intelligence of the team is based on the ability of its members to cooperate and coordinate effectively among all members, and it is more important to the performance of the group than the individual ability alone, as the presence of a number of intelligent individuals is Useful, but it is certainly not sufficient to create smart teams, and the team participating in the performance of a task through the collective intelligence system should have a set of characteristics that contribute to achieving the best use of this system, which are:(Malone and Bernstein, 2015: 14)

A. Independence: It means the freedom to express opinions independently without being subordinate to one or the rest of the team members.

B. Difference (diversity): it means the diversity in the experience and knowledge of the team members. The more there is a difference and diversity in the knowledge and experience of the members, the more knowledge of the team will be.

C. Decentralization: It means not adhering to a job position. Rather, team members are divided among all parts of the task so that they collect information and operate it at the same time, and cover the largest possible part of the task assigned to them in the least possible time and at the lowest possible cost.

D. Aggregation: It means assembling solutions and agreeing on an appropriate solution to the task or problem to be solved or a final decision from the multiple ideas presented by team members.

#### **2-2: The general framework of the joint audit**

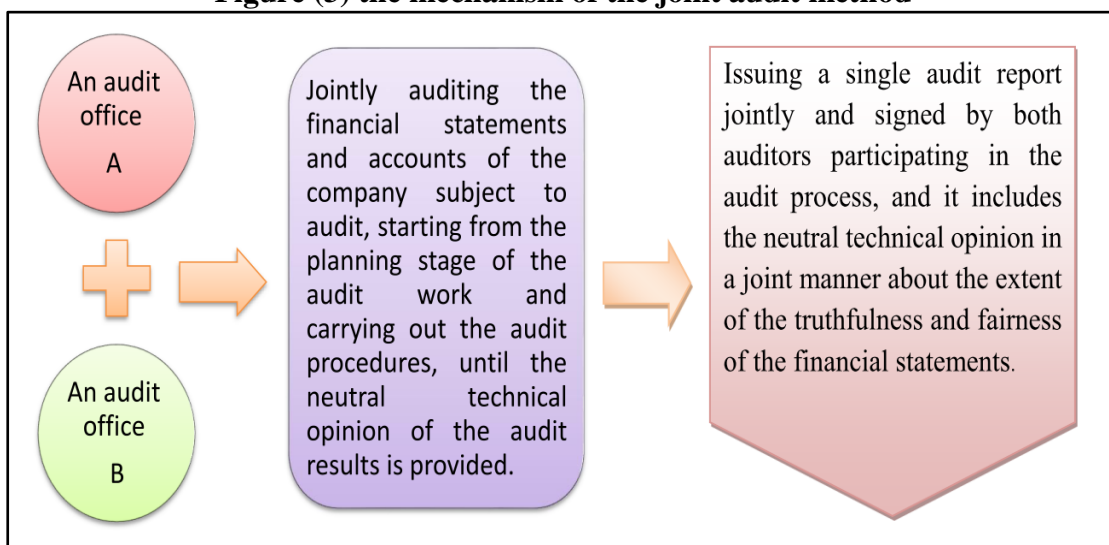
##### **2-2-1 Joint Audit Concept:**

The concept of joint auditing is not a new concept. Although the audit process has been implemented according to the joint audit method, which has been known since decades ago, the collapses that the major companies and major auditing offices have suffered, the global financial crisis, and the accusations that followed it for the profession Auditing was one of the main reasons for the increase in interest professionally and academically in the joint audit method as a mechanism to restore confidence in the auditing profession (Al-Wakeel, 2020: 13)

It was defined as "an organized process of collecting and objectively evaluating the evidence related to the assertions and allegations of management about economic events and activities, with the aim of determining the degree of compatibility between these assertions and the standards set and communicating the results of this process to the concerned parties in an appropriate manner, and this is done through the distribution and assignment of tasks, and the review of work by two." Of the auditors and the issuance of a unified report, and the responsibility is jointly for the accuracy of this report (Ghaly, 2018: 21). The joint audit is also defined as an audit process through which work efforts are

distributed to two independent audit offices that participate in the exerted efforts, and they jointly plan a process. Auditing with the distribution of fieldwork tasks between them, and they issue a single audit report bearing one point of view and signed by both of them, and the responsibility for each of them is shared for the audit process that was completed and for the information contained in the report (Ibrahim, 2019: 23). The following figure shows the mechanism of joint audit work:

Figure (3) the mechanism of the joint audit method



The shape was prepared by the researchers

### 2-2-2 - Principles of joint audit

The joint audit is based on the basic principles outlined in the following table: (Qurayt et al., 2018: 107)

Table (1) Joint Auditing Principles

	Principle	Explain the principle
1	Roles and responsibilities	The joint auditor cannot claim ignorance of the work performed by the other joint auditor
2	Main audit procedures	A- The joint auditor determines and approves a general audit strategy and develops the audit plan in conjunction with the other joint auditor B - Agreeing in writing with the other joint auditor to allocate the work to be performed
3	Independence and ethical requirements	A- The joint auditor must develop policies and procedures for dealing with and settling differences of opinion with the other joint auditor B- The joint auditor must make every effort to resolve disputes before finalizing the report with the other joint auditor. C- In the event that the differences of opinion between the joint auditor and the other joint auditor cannot be resolved, the management or those in charge of the audit work (audit committees) must be informed as soon as possible.
4	Telecommunications	The joint auditor shall communicate with another subscriber auditor in a timely manner. These communications should include, but are not limited to, the following: <ul style="list-style-type: none"> <li>▪ Identify the risks of material misstatement of the financial statements due to fraud or error that may be related to the work of the other joint</li> </ul>

		<p>auditor</p> <ul style="list-style-type: none"> <li>▪ indications of possible management bias; The joint auditor's findings and conclusions that may lead to modifications of opinion.</li> <li>▪ Any other matters that may be related to the work of the other joint auditor</li> </ul>
5	Audit documents	<p>The joint auditor must also include in the audit documentation, but not limited to, the following:</p> <ul style="list-style-type: none"> <li>• Letter of representation from management.</li> <li>• Approving the distribution of work among the joint auditors</li> <li>• Joint consultations including technical issues</li> <li>• Meetings and discussions with management and in high-risk subjects and their components</li> <li>• Audit planning and materiality.</li> <li>• Additional audit procedures performed, if any</li> </ul>

### 2-2- 3. Types of joint audits

A joint audit may be mandatory by law, or it may be optional resulting from the desire of management or the desire of the auditor himself, and it may differ in terms of the mix of audit offices, and it can be divided into:

**A- Joint audit in terms of obligation:** It is represented by the following (Abdel Halim, 2019: 183):

- **Mandatory joint audit:** It is intended to oblige the economic unit to appoint two auditing offices to audit its financial statements by law or as a prerequisite for the continuation of its activity.
- **Voluntary joint auditing:** It is intended to implement joint auditing voluntarily, meaning that there is no legal obligation to apply it, and leave that in line with the vision of the economic unit management to decide the extent of its need to apply it.

**B- Joint audit in terms of the joint office mix:**

The joint audit is carried out through a combination of several forms as follows (Alwakeel, 2020: 16):

- The first combination (Big4-Big4) is represented in the joint audit by two auditors belonging to the Big4 audit firms.
- The second combination (Big4-Non Big4) is represented in the joint audit by two audit firms, one of which is from the four big audit firms, and the other is otherwise.
- The third combination (Non-Big4- Non-Big4) is represented in the joint audit by two audit firms, both of which are not the big four audit firms.

And that the European Commission indicated in the proposal to implement joint auditing that one of the auditing offices should be from one of the four largest in order to reduce the degree of market focus and open the way for the rest of the audit offices to compete and obtain market share. (European Commission, 2011)



### **2- 3- the integration between the collective intelligence system and the joint audit method**

The principles of the collective intelligence system and the characteristics of the team according to this system are integrated with the principles of joint auditing and provide full support to it by making use of these characteristics, which lead to support for disclosure and documentation when performing the audit according to the joint audit method.

The researchers believe that the collective intelligence system has a role in all stages of the joint audit that may affect the work of the joint auditors and the progress of the audit process, as the collective intelligence system allows the documentation of the audit plan and the possibility of modifying it based on the good ideas resulting from the exchange of ideas and experiences among the members of the audit team, which leads to The auditors perform the joint audit tasks to the fullest extent, and the stage of planning the joint audit work ends when the joint auditors reach a set of professional provisions that form the basis for the other stages of the joint audit process and disclose them through the proposed disclosure model, but when implementing the audit process, the collective intelligence system Its ability is through gathering knowledge and comparing notes with others to achieve the goal of a joint audit process.

### **3: a proposed model for disclosure of a joint audit, and the role of collective intelligence system in improving it**

Despite the importance of joint auditing in developing the professional performance of auditing and supporting the competitive advantage of audit firms and offices, and the emphasis of international organizations and professional organizations on the use of scientific methods, including the collective intelligence system, in the stages of the audit process, in order for these offices to improve the quality of auditing, but it is not applied in a way. Practical, and the researcher tries to present a proposed model for disclosure of joint auditing and the role of collective intelligence for the audit team in improving it in this research.

#### **3- 1 The concept of the joint audit disclosure model and the role of collective intelligence in improving it:**

It is meant a statement that shows the extent to which audit firms and offices adhere to global audit quality indicators, as several professional organizations have set out to measure the quality of auditing by issuing indicators aimed at providing a basis for comparison between the various auditing firms on the one hand and the audit process in particular on the other hand, and these indicators can help Also, auditing firms to demonstrate their commitment to audit quality and enhance competition among them.

This indicates the availability of the elements of disclosure as follows:

##### **A- Disclosure material:**

It is data on the extent to which audit firms and offices adhere to global audit quality indicators, especially the quality of joint auditing set by professional bodies, which aim to be quantitative indicators to become easy to measure and are supported by the use of modern scientific methods, especially the collective intelligence system.

**B- The objective of disclosure:**

to provide information on joint auditing for audit companies and offices and the extent of using modern scientific methods in the stages of the audit process for users of the audit report to help in making economic decisions.

**C- Disclosure limits:**

It is represented in not publishing information about joint auditing and collective intelligence system in the market in which audit companies and offices operate and information that negatively affects the competitive position of the company.

**D- The means of disclosure:**

The disclosure form for joint auditing and the role of collective intelligence in improving it is included in the explanations complementing the audit report, which must be available in the current audit file of the economic unit under review.

**E- Disclosure period:**

The disclosure form for joint auditing and the role of collective intelligence in improving it is prepared and published for the period for which the audit report is prepared.

**3- 2 Considerations for preparing and publishing the joint audit disclosure form and the role of collective intelligence in improving it:**

The proposed reporting model for joint auditing and the role of collective intelligence in improving it is based on the following considerations:

- The joint audit disclosure form and the role of collective intelligence in improving it are not considered a substitute for the primary auditor's report and the accompanying clarifications.
- A disclosure form for joint auditing and the role of collective intelligence in improving it is prepared, based on the Iraqi and international auditing standards and the instructions of the Board of Auditing and Auditing Profession in Iraq.
- Global audit quality indicators should be available in the joint audit disclosure form and the role of collective intelligence in improving it.
- The Board of Auditing and Auditing Profession in Iraq audited the joint audit disclosure form and the role of collective intelligence in improving it before it was published with the auditor's report.

**3- 3 the Objectives of the Joint Audit Disclosure Form, and the Role of Collective Intelligence in Improving It:**

The joint audit disclosure model and the role of collective intelligence in improving it can achieve several goals, as follows:

- a. We are enhancing documentation, as the information contained in this form is documented by the account auditors participating in the audit process, in addition to the audit committee in the economic unit.
- b. The Board of Auditing and Auditing Profession, which is the body responsible for regulating and monitoring the profession, helps to follow up the work of the audit offices by comparing the actual and planned performance, extracting deviations, and addressing them.

- c. By defining and establishing the procedures and information contained in this form, they will be the basis for the new auditor to rely on in the case of the auditors rotating rotation.
- d. This model enhances the auditor's business review procedures by the partner auditor.
- e. This form shows the extent of the joint auditors' commitment to auditing standards and auditing quality standards while performing the work of auditing the financial statements and accounts of the economic unit.
- f. It is defining the tasks assigned to each team to reduce the phenomenon of (free ride) that arises when applying joint auditing.
- g. Necessary for consolidating and completing information within the current audit file of the economic unit subject to joint auditing.

### **3- 4 The importance of the proposed model for the disclosure of joint auditing and the role of collective intelligence in improving it:**

The importance of the proposed model for disclosure of joint auditing and the role of collective intelligence in improving it is due to the importance of audit quality, as follows:

#### **First: Supporting effective communication between the two parties to the joint audit:**

- a. The collective intelligence system works to support communication between the two parties to the joint audit, to discuss all the auditing work and tasks that each of them performed through electronic communications, and to document those actions via electronic folders for each economic unit subject to audit, including the ideas presented and exchanged between the two parties to the joint audit, which leads to developing the ideas of the auditors.
- b. The Collective Intelligence System contributes to providing immediate access and access to electronic folders, which leads to the development of auditors' ideas by allowing them to view previous ideas and experiences and thus the speed of response and alternative solutions.
- c. The collective intelligence system works through software designed to integrate the presented ideas and achieve integration with them, thus working to increase the integration of ideas and build a knowledge network of distinct ideas, leading to the possibility of linking application users with the ideas that were produced through the design of a knowledge network of creativity, and allowing During the course of building and merging on the proposed ideas, which leads to an increase in the number of innovative ideas and to maximize the capabilities of the members of the joint audit team.

#### **Second: Supporting the mutual control mechanism between the two parties to the joint audit:**

The Collective intelligence system support mutual oversight between the two parties to the joint audit by documenting the work and tasks of the two parties to the joint audit, and by means of electronic management of the audit documents with immediate access to them remotely, as the joint auditor can review the actions and conclusions of the other auditor, and ensure the adequacy and appropriateness of the audit evidence That obtained by the other auditor, and the consultation and discussion sessions between the two parties to the joint

audit through the collective intelligence system continue until the conclusion of an agreed opinion from both of them, and they are jointly responsible for this opinion.

**Third: Supporting geographical coverage between the two parties of the joint audit:**

a. The collective intelligence system supports communication between the two sides of the joint audit and communication in different geographical locations, and thus the audit offices benefit from the use of these electronic programs in the practice of joint auditing work by exchanging the two sides of the joint audit process of information, ideas and technical expertise across a wide geographical area.

b. The presence of the two parties to the joint audit and reviewing their work and reviewing each of them the work of the other auditor increases the possibility of detecting any wrong fundamental misstatements and leads to better solutions to the problems that need to be reported, while poor geographical coverage when practicing the joint audit process will lead to an exchange Insufficient information and ideas among the auditors, which reflects negatively on the quality of the joint audit process.

c. The collective intelligence system allows auditors to communicate and communicate through these electronic programs at any time and anywhere, thus reducing the transportation and travel costs of auditors and leading to a reduction in joint audit fees.

**Fourth: Supporting auditors in dealing with fraud risks:**

a. The collective intelligence system helps the two parties to the joint audit to increase their efficiency and experience in dealing with potential and increasing fraud risks by using cognitive creativity, with the possibility of modifying the audit plan based on the ideas and experiences exchanged between them, which leads to the rapid preparation of the joint audit report in a timely manner.

b. The collective intelligence system seeks to support the skills of the two parties to the joint audit in dealing with the risks of fraud through its contribution to increasing the fluency, diversity, and originality of their ideas and giving them the freedom to express a neutral technical opinion on the extent of fairness of the financial statements, which leads to the accuracy of the information disclosed in the joint audit report. It enhances the quality of joint auditing.

**3-5 Requirements for the proposed model for the disclosure of joint auditing and the role of collective intelligence in improving it:**

**First:**

The need to spread the culture of using joint auditing in the business community, as this culture must be spread among investors, shareholders, financial analysts, and businessmen on the basis that the degree of confidence in the financial statements and reports of business organizations increases with the presence of joint auditing, so that it becomes necessary and important, although not compulsory. Or mandatory, whether by-laws or regulations governing the business community.

**Second:**

Criteria for selecting the two parties to the joint audit are available, as the criteria for selecting auditing firms participating in the joint audit process must include the following:

- a. One of the participating audit offices should be from the first-class auditing offices, Category A.
- b. That at least one of the two audit firms are participating in the offices specialized in the activity of the economic unit subject to auditing.

**Third:**

Criteria for division of labor between the two parties to the joint audit must include the following:

- a. The fees that each subscriber audit office receives.
- b. The audit company shall specialize in the activity of the economic unit, subject to audit or not.
- c. The reputation and size of the audit office involved in the joint audit.

**Fourth:**

Determining the nominating body, selecting and appointing the two parties to the joint audit, it is necessary that the audit committee within the economic unit subject to audit is the body responsible for nominating the two audit offices participating in the joint audit process, and the final selection and appointment decision is issued by the general assembly of shareholders or any other body. The law obligated them to do so, taking into account the previous standards when determining the fees and responsibilities of each of the two parties to the joint audit.

**Fifth:**

Commitment to the periodic change of the joint audit offices, as the periodic change leads to the independence of the auditors, and the reduction of the familiarity relations with the management of the economic unit subject to the audit, bearing in mind that the two parties to the joint audit are not changed at the same time, but rather the change is made between them alternately until one is available from The two parties to the audit with previous experience in the activity of the economic unit subject to the audit.

**Sixth:**

Agreeing on the elements that must be disclosed in the final report, as the consolidated joint audit report must include the names of the auditors participating in the audit process, the responsibilities of each of them, the nature and type of tasks that he performed, as well as the responsibility of managing the economic unit subject to auditing, in addition to the economic unit The subject matter of the audit and the time period covered by the audit report. The report also includes the final opinion of the two parties to the joint audit, as well as the signature of the auditors, while adhering to what is stipulated in the laws and auditing standards.

**Seventh:**

Adopting the communication tool between both parties of the joint audit on the collective intelligence system, because this achieves maximum benefit from the advantages of joint auditing and limits its disadvantages, in addition to making use of modern information and communication technology tools for the exchange and integration of ideas.

**3- 6 The general form of the joint audit disclosure form and the role of collective intelligence in improving it:**

The proposed model shows the use of a collective intelligence system to come up with useful ideas and indicators that help auditors to identify and evaluate the stages of the audit process, which in turn leads to improving the quality of the joint audit.

The proposed model for disclosure of joint auditing and the role of collective intelligence in improving it depends on achieving integration between the auditor's report and joint audit information by disclosing the joint audit information and documenting it in the explanations complementing the audit report that must be available in the ongoing audit file of the economic unit subject to auditing.

By combining the collective intelligence system questions (who, what, how, why) with the audit quality indicators in four groups, each group represents a key area, namely:

First: Who does the joint audit:

Table (2): Who carries out the joint audit

The proposed joint audit quality indicators	the scale	An audit office A	An audit office B
The size of the team involved in the task	The number of people		
The percentage of work assigned to each team	is a percentage		
The audit period for each team	estimated in hours		
The accounting and auditing techniques and resources used	the type and number of techniques		
The experience of the audit office in the audit work	is generally measured in years		
The experience of the audit firm in the client's industry	is generally measured in years		
Hiring specialists and people with knowledge-based experiences	The number of times of employment, with a mention of skills and experiences		
Training for team members	estimated in hours		

**Second: What do auditors audit (description of the audit mission):**

**Table (3): What do auditors auditing?**

The proposed joint audit quality indicators	the scale	An audit office A	An audit office B
Financial statements and accounts subject to audit	The number and addresses of the lists and accounts		
Evidence upon which the audit team relied	Number and type of evidence		
The percentage of the auditing work performed by each team	%		
Percentage of evaluation and review of the partner auditor's work	%		
Differences and discrepancies between the two partners, and how to solve them	A percentage of the total business		
Commitment to the predetermined times by each office	a percentage of the work performed, based on the scheme		

**Third: (How) the manner in which the joint audit was conducted:**

**Table (4): How was the joint audit performed?**

The proposed joint audit quality indicators	the scale	An audit office A	An audit office B
We are conducting the audit according to recognized international and local auditing standards.	A percentage of the business		
Conducting audits based on international auditing quality standards	A percentage of the business		
Applying the regulations and instructions approved by the professional organizations when conducting the audit	A percentage of the business		
The firm's commitment to the predetermined audit procedures and plan	A percentage of the business		

fourth: (Why) or the goal that auditors seek to achieve and which represents the results of the audit work:

Table (5): The objective and results of the joint audit work

The proposed joint audit quality indicators	the objective	An audit office A	An audit office B
There is no objection to the financial statements after their issuance, and they are free of errors	The financial statements are of high quality in terms of formulation and content		
Discovering fraud and other errors in preparing financial reports			
Conclusion of audit quality from financial reporting quality measures			
Timely reporting of internal control weaknesses	Improving internal control performance		
Timely reporting of issues affecting continuity	Continuity check		
Examine the independence of the members of the audit committee	Promote independence		

**3-7 joint Audit's disclosure form, the mechanism of activating, and the role of collective intelligence in improving it:**

- Before starting the joint audit process, the joint auditors shall meet to lay down the outlines of the audit process and agree among themselves on the mechanism by which the joint audit process will be conducted. After that, the contracting letter is sent to the economic unit subject to auditing (the private bank) to complete the contracting procedures.
- After that, the stage of agreeing on the procedures to be followed by each auditor (auditing company) begins. At this stage, the form must be filled out with all the information that has been agreed upon (the planning stage).
- Upon completion of the joint audit tasks, the form is filled out with the actual information that was made during the audit process.
- Copies of the form are kept at each joint audit office, in addition to keeping a copy in the audit file of the economic unit.



**Conclusion:**

- Not to use the collective intelligence system in unified documentation of the joint audit work in the audit offices, as each office documents the actions carried out by the members of its team, and not for the work carried out by the two offices together.
- The roles and responsibilities performed by the members of each office are not disclosed, or the audit procedures are explained, and the collective intelligence system is not used to disclose them in the audit report or the notes supplementing it.
- Through the information contained in the Joint Audit Disclosure Form, it is possible to follow the audit procedures for each team separately, as well as to determine the extent of cooperation and exchange of experiences between the auditors.
- Lack of complete information that can be relied upon by the new audit office in the event of a rotating change of the audit offices.

**Recommendations:**

- I am using the proposed model to enhance documentation in joint auditing, whereby the information contained in this model is documented by the auditors involved in the audit process, in addition to the audit committee in the economic unit.
- The proposed model helps the Board of monitoring and Audit Profession to follow up the work of the audit offices by comparing the actual and planned performance and extracting deviations, and addressing them.
- By defining and confirming the procedures and information mentioned in the form, they will be the basis for the new auditor to rely on in the case of the auditors rotating rotation.
- We are activating and using the proposed model to enhance the procedures for the auditor's business review by the partner auditor.
- It is using the proposed model in a way that achieves the commitment of the joint auditors to the auditing standards and auditing quality standards while performing the work of auditing the financial statements and the accounts of the economic unit.
- It is using the proposed model in a manner that leads to consolidation, integration and disclosure of information within the current audit file of the economic unit subject to joint auditing.

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## □ نموذج مقترح للإفصاح عن دور نظام الذكاء الجمعي في تحسين التدقيق المشترك

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### المستخلص:

يهدف هذا البحث الى تقديم نموذج مقترح للإفصاح والتوثيق عند القيام بالتدقيق وفق اسلوب التدقيق المشترك من خلال استخدام اسئلة ومبادئ نظام الذكاء الجمعي، مما يؤدي الى تحسين وتعزيز كفاءة التدقيق المشترك، وبالتالي تعزيز ثقة الاطراف ذات العلاقة بمخرجات العملية التدقيقية، إذ يمكن صياغة مشكلة البحث من خلال التساؤل التالي "هل يساهم النموذج المقترح للكشف عن دور نظام الذكاء الجمعي في تحسين التدقيق المشترك؟"

تم تصميم الانموذج المقترح للإفصاح عن التدقيق المشترك ودور الذكاء الجمعي في تحسينه لتحقيق التكامل بين تقرير المدقق من جهة، ومعلومات التدقيق المشترك من جهة اخرى، وذلك عن طريق الإفصاح عن معلومات التدقيق المشترك في الإيضاحات المتممة لتقرير التدقيق والواجب توافرها في ملف التدقيق الجاري للوحدة الاقتصادية محل التدقيق، من خلال دمج اسئلة نظام الذكاء الجمعي (من، ماذا، كيف، لماذا) مع مؤشرات جودة التدقيق، وتوصل البحث الى مجموعة من الاستنتاجات، أهمها توثيق موحد لأعمال التدقيق المشترك في مكنتي التدقيق من خلال استخدام نظام الذكاء الجمعي، إذ يقوم كل مكتب بتوثيق الاعمال التي قام بها افراد فريقه بمعزل عن المكتب الاخر، اما اهم التوصيات فتمثلت بضرورة تبني الانموذج المقترح لاستخدام الذكاء الجمعي في تحسين جودة اداء التدقيق المشترك، والذي يهدف الى تقديم آلية للإفصاح والتوثيق عن اعمال التدقيق المشترك.

نوع البحث: ورقة بحثية

المصطلحات الرئيسية للبحث: التدقيق المشترك، نظام الذكاء الجمعي، انموذج الإفصاح عن التدقيق المشترك.

بحث مستل من رسالة ماجستير