A Study on the Impact of Artificial Intelligence on Auditing

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Abstract

Business growth comes with complexity in operations, leveraging on the use of technology-based decision tools are becoming prominent in today's business world. Consequently, the audit profession is tuning into this change with the integration of artificial intelligence systems to stay abreast of the transformation.

Artificial intelligence (AI) refers to what information about the language structure being transmitted to the machine. It should result in a more intuitive and faster solution, based on a learning algorithm that repeats patterns in new data. AI will help them to optimize their time, enabling them to use their human judgment to analyse a broader and deeper set of data and documents.

AI and machine learning will improve the ability and increase the speed with which hackers can find weaknesses within networks. They will be able to automate the mounting of probes for attacks and their ability to test and develop new malware will also be enhanced.

The internal audit function is one of the cores of the effectiveness of jobs in various economic projects, the most important means by which rely on modern scientific management in the provision of data and information accurately and orderly and needed to make decisions and assist them in examining systems where the evaluation and safety, in the form that allows to be the goals and targets for all areas under revision. The current research paper collects data from Audit firms about the implementation of AI in Internal Auditing to achieve its aim to know the impact of AI on Internal Auditing.

***Keywords**: Internal Audit, AI in Internal Auditing, Impact of AI in Internal Auditing.*

Introduction

Internal-auditing is an independent, objective assurance and consulting activity designed to add value and improve an organization's operations. It may help an organization accomplish its objectives by bringing a systematic, disciplined approach to evaluate and improve the effectiveness of risk

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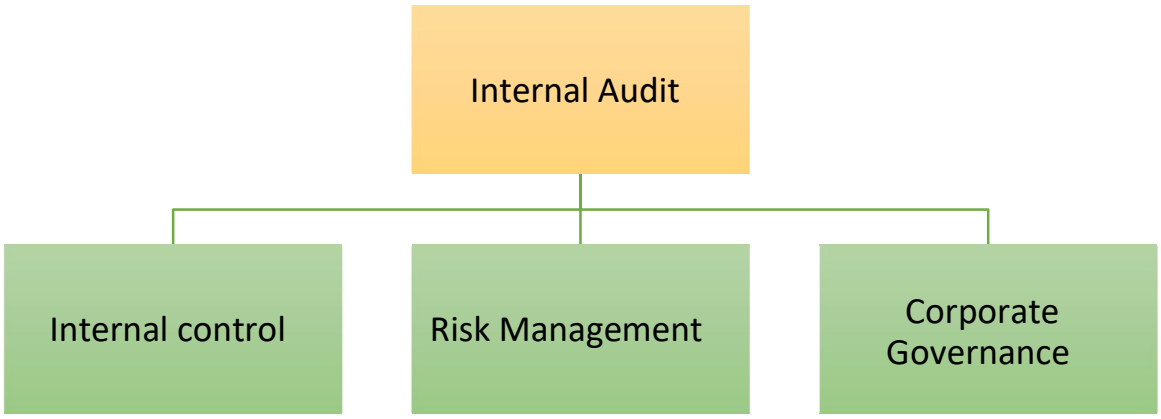
management, control and governance processes. Internal auditing might achieve this goal by providing insight and recommendations based on analyses and assessmentsof data and business processes. The scope of internal auditing within an organization may be broad and may involve topics such as an organization's governance, risk management and management controls over: efficiency/effectiveness of operations (including safeguarding of assets),the reliability of financial and management reporting, and compliance with laws and regulations. Internal auditing may also involve conducting proactive fraud audits to identify potentially fraudulent acts; participating in fraud investigations under the direction of fraud investigation professionals, and conducting post investigation fraud audits to identify control breakdowns and establish financial loss.

Internal auditors are not responsible for the execution of company activities; they advise management and the board of directors (or similar oversight body) regarding how to better execute their responsibilities.

Chart no: 1.1 : Roles of Internal Audit



Role in Internal Control

Under the COSO Framework, internal control is broadly defined as a process, affectedby an entity's board of directors, management, and other personnel, designed to provide reasonable assurance regarding the achievement of the following core objectives for which all businesses strive:

- Effectiveness and efficiency of operations.
- Reliability of financial and management reporting.
- Compliance with laws and regulations.
- Safeguarding of Assets

Management is responsible for internal control, which comprises five critical components: the control environment; risk assessment; risk focused control activities; information and communication; and monitoring activities. Internal auditors perform audits to evaluate whether the five components of

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management control are present and operating effectively, and if not, provide recommendations for improvement.

Role in Risk Management

Under the COSO enterprise risk management (ERM) Framework, an organization's strategy, operations, reporting, and compliance objectives all have associated strategic business risks — the negative outcomes resulting from internal and external events that inhibit the organization's ability to achieve its objectives. Management assesses risk as part of the ordinary course of business activities such as strategic planning, marketing planning, capital planning, budgeting, hedging, incentive pay out structure, credit/lending practices, mergers and acquisitions, strategic partnerships, legislative changes, conducting business abroad, etc. Sarbanes–Oxley regulations require extensive risk assessment of financial reporting processes.

The internal audit function may help the organization address its risk of fraud via a fraud risk assessment, using principles of fraud deterrence. Internal auditors may help companies establish and maintain Enterprise Risk Management processes.

Application of AI to Internal Audit

ML can help auditors identify patterns and trends from large data sets (that might otherwise be hard or overly time consuming to identify) and provide insight to supportrisk assessment, project scoping, sub-population identification, issue identification, quantification, and more.

Some internal audit teams have already begun to apply ML to various fraud-prone or high-risk areas such as purchasing, manual journal entries, travel and entertainment,and system activity. These tools are proving to be helpful not only to internal auditors but also to their business partners who are able to use them to detect and correct (andeven predict) anomalies before they can escalate into actual incidents.

NLP is being be used to scan through large volumes of documents such as contracts,loan records and other unstructured data sources for critical information. This can thenbe combined with other AI components (such as ML, DL and RPA) to classifydocuments according to type, extract relevant information and perform analysis.

Literature Review

Nagaraj Samala, Bharath Shashanka Katkam, Raja Shekhar Bellamkonda and Raul Villamarin Rodriguez in their paper "**Impact of AI and robotics in the tourism sector:a critical insight**" explained that the marketers operating in the tourism industry wouldhave to integrate technology seamlessly so that the technology would be easy to use,and at the same time, it would be beneficial for all the stakeholders. Also the technology-driven approach could give rise to new, complex, and challenging technicalissues that are not yet known. (2020)

Mr. Sachin Bhbosale, Vinayak Pujari, Zameer Multani in their paper "**Advantages AndDisadvantages Of Artificial Intelligence**" concluded that coming future Artificial Intelligent Technologies can provide more competitive advantage. Advantage of AI isthat it can be deployed easily and they can be re programmed for work for long time without getting bored or getting tired. Disadvantage of AI is that machines can performonly those tasks which they're designed or programmed to try to, anything out of that they have a tendency to crash or give irrelevant outputs which might be a serious backdrop and they can cost tons of cash and time to create, rebuild, and repair. (2020)

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Salim Ghanoum, Folasade Modupe Alaba in their paper "**Integration of Artificial Intelligence in Auditing: The Effect on Auditing Process**" concluded that t the mainlink between AI and effectiveness of audit process is the reduction in errors which formerly cause auditors to repeat the work. AI reduces the time needed for classification and comparison of transactions more so the first entries in the journal. (2020)

Carataș Maria Alina, Spătariu Elena Cerasela, Gheorghiu Gabriela in their paper "**Internal Audit Role in Artificial Intelligence**", internal audit should be using artificialintelligence in terms of cognitive capabilities, (that would normally need human intelligence), which translates in augmenting the human thinking or replacing it, in a natural and intuitive way. IA using the AI can provide assurance for companies helpingthem to distinguish truth from lies, paying special attention on ethics and aiming to improve the internal control, risk management and governance. (2018)

Anni Kovanen in the paper "**Risks of intelligent automation and their impact on internal audit**" concluded that the key risks of intelligent automation identified from the research material are technology risks, cyber risks, risks related to design and implementation, risks related to strategy and people related risks. The biggest challenge for internal audit is lack of competences. Second challenge identified is internal audit's position and role in intelligent automation adoption. (2020)

Research Questions

1. To explore the effect of AI on effectiveness of internal auditing.
2. To study the Importance of using AI in Internal audit and its pros and cons.
3. To study the Pros and Cons internal auditor faces in using AI.

Methodology of Study

Research Methodology

It deals with the definition of Research Problem, Research Design, Methods of Data Collection, Sampling Design and Interpretation of Data.

Statement of Problem

All the relevant information for the study has been obtained from the representative samples of the salaried section and without referring to any records. As the study is for current and also a short period, those data seen to be reliable.

Research Design

The field of study for this research is restricted to Bangalore alone. The design of the study is planned for a descriptive in nature type as this method accurately defines a situation with its associated variables.

Data Collection:

Primary Data - Primary data refers to the first-hand data gathered by the researcherhimself.

A questionnaire is prepared for collecting the data and interesting the responses **Sample Size:** The structured survey was conducted on 22 respondents as per thepurpose of this research.

Sampling Area: Prolead Financial Solutions Private Limited.

Sampling method: Sample is collected through convenience sampling. (Sample is auditors of Prolead financial solutions whereas the population is whole Auditors in India).

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Convenience Sampling: Convenience sampling is defined as a method adopted by researchers where they collect market research data from a conveniently available pool of respondents. It is the most commonly used sampling technique as it's incredibly prompt, uncomplicated, and economical.

Data Analysis - Two types of analysis are used to analyse the data. They are:

Descriptive Analysis: Data involves summarizing data collected by structured surveyin a meaningful way to discern patterns in the data.

Inferential Analysis: Testing out hypothesis about a population based on a sample.

Hypothesis Testing: It is a systematic procedure for deciding whether the results of a research study support a particular theory which applies to a population.

The procedure for hypothesis testing is based on the ideas which will describe above.Set up competing hypotheses, select a sample random sampling for population. Determine whether the sample data will be null or alternative hypotheses.

Hypothesis

Ho: Null hypothesis (no change, no different, no relation)

H1: Alternative hypothesis (Relation exists)

Chi-Square test is used

- Pearson's chi-squared test is used to determine whether there is a statistically significant difference between the expected frequencies and the observed frequencies in one or more categories of a contingency table.
- It is used for cross tabulations i.e. used to quantitatively analyze the relationship between multiple variables

Limitations of the Study

1. Many people have their own internal auditors due to which the population size is restricted.
2. Exploratory research is done on the topic due to which the research gap is difficult to find.

Data Analysis and Interpretation

- Out of total respondents, 6 people opted for neutral and 6 people disagreed, 5 people agreed, 3 people strongly agreed whereas, only 2 people disagreed. This says that AI did not play a major role in enhancing quality and reliability of auditing.
- Out of total sample size, 5 people agree and 5 people disagree. Whereas, 6 people say it makes no difference. From above responses we can infer that the application of AI do help in detecting errors but not so effectively.
- Out of 22 respondents, 7 people agree that AI processesdata in short time, whereas, 6 people strongly disagree to the same, 3 people strongly agreed and 4 people voted Neutral. Only 2 disagreed. From the above responses we can infer that AI helps in processinglarge data in shorter time.

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- Out of total respondents, 13 people faced the challenges due to less technical knowledge, 4 people faced challenges due to trust issues,4 people faced challenges due to limited precedents whereas, 1 people faced challenge for data accessibility.
- Out of total sample, 11 people faced a challenge of privacy of data and confidentiality, 5 faced the challenge of explain-ability, 4 faced the challenge of competence and capability, whereas, only 2 people faced integrity problem.
- Out of total sample respondents, 11 find AI to process the data faster, 5 accepts that it reduces human error, 4 accept the automated activity of AI, whereas, 2 vote for accuracy.
- Out of total respondents, 10 find the cost of implementationof AI is its disadvantage; whereas, 8 respondents find the main disadvantage is its security and privacy. 2 respondents find that lack of skill is the main disadvantage and 2 respondents find requirement of large data is the main disadvantage.
- Out of 22 respondents, 6 people vote for 80% of automation of audit judgement, 5 people voted for 60%,3 people voted for 40%, 50%, 70% each, whereas, only 1 people voted for 100% automation of Audit judgement.\
- From the hypothesis testing, we can conclude that gender does not make any influence on the challenges faced in the implementation of AI in Internal Audit and on the advantage of using AI in Internal Audit.

Inferential Analysis

Hypothesis Testing

Hypothesis – 1

H0: There is no influence of Gender on Challenges faced in the AI implementation inInternal Audit.

H1: There is influence of Gender on Challenges faced in the AI implementation inInternal Audit.

- For this hypothesis testing Chi-Square test is used.

Observed

Table: Hypothesis testing 1 – Observed values

	Column Labels				
Row Labels	**Data Accessibility**	**Limited precedents**	**Technical Knowledge**	**Trust Deficit**	**Grand Total**
Female	1	1	5	2	9
Male		3	8	2	13
Grand Total	1	4	13	4	22

Expected

Table: Hypothesis testing 1 – Expected values

	Column Labels				
Row Labels	**Data Accessibility**	**Limited precedents**	**Technical Knowledge**	**Trust Deficit**	**Grand Total**
Female	0.409090909	1.636363636	5.318181818	1.63636364	9
Male	0.590909091	2.363636364	7.681818182	2.36363636	13

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Grand Total	1	4	13	4	22

P = 0.695881445 ,P > 0.05, ∴ H_0 is Accepted

∴ There is enough evidence to prove that there is no relation between Gender andthe challenge faced by them in implementation of AI in Internal Auditing.

Hypothesis – 2:

H0: There is no influence of Gender on Advantage of using AI in internal Audit.

H1: There is influence of Gender on Advantage of using AI in internal Audit.

- For this hypothesis testing Chi-Square test is used.

Observed

Table: Hypothesis testing 2 – Observed values

	Column Labels				
Row Labels	**Accuracy**	**Automated Activities**	**Faster data processing**	**Reduces Human Error**	**Grand Total**
Female	1	1	4	3	9
Male	1	3	7	2	13
Grand Total	2	4	11	5	22

Expected

Table: Hypothesis testing 2 – Expected values

	Column Labels				
Row Labels	**Accuracy**	**Automated Activities**	**Faster data processing**	**Reduces Human Error**	**Grand Total**
Female	0.818181818	1.636363636	4.5	2.045454545	9
Male	1.181818182	2.363636364	6.5	2.954545455	13
Grand Total	2	4	11	5	22

P = 0.695881445, P > 0.05 ∴ H_0 is Accepted

∴ There is enough evidence to prove that there is no relation between Gender andAdvantage of using AI in internal Audit.

Suggestions

- AI should be a part of auditing without being heavily reliable on AI.
- Knowledge and Technical skills required for the auditor to use AI are to bedeveloped.
- The privacy and confidentiality issued faced can be reduced by using softwareprotection.
- The company can increase its reach by using social media as the medium.

Conclusion

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AI provides many benefits for internal auditing that include improving workflow and efficiency and minimizing risk and harm by identifying them sooner. AI can help auditors and financial professionals by taking care of tedious and time- consuming tasks, thus saving time and increasing productivity and efficiency. An AI algorithm is a self-learning process and it becomes more intelligent in identifyingcertain patterns and becomes quicker in resolving issues, over time, as it processes the correctness of each iteration and makes adjustments prior to the next cycle of operation.

In a quick and ever-changing technological world, AI is an effective tool being adoptedquickly into many companies and organizations to improve the work environment andlives of many people all over the world every day. Every day it shows further improvement and advancement. The decision to relying on AI solutions requires administrative streamlining andstrategic planning on many levels. The firms have worked hard to define thesestrategies to implement and integrate AI technologies in the workplace. Artificial intelligence promises to transform more than just the way enterprises do business. It will touch every corner of society.

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