

# Integration of AI Tools within the Auditing Procedures

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## **1. Brief company description**

EY, previously known as Ernst & Young, is a global professional services company specializing in assurance, tax, transactions, and advisory. Established in 1989 through the merger of Ernst & Winney with Arthur Young & Co., EY has significantly grown and become one of the 'Big Four' largest accounting firms worldwide. It operates in more than 150 countries and employs around 400 000 people globally. The company is committed to 'building a better working world' by delivering a wide range of high-quality services that help clients navigate complex business challenges and align with their strategies. EY helps clients to improve performance, manage risks, and drive innovations.

In recent years, in line with global developments towards digital transformation, EY has not been standing still. The firm has been investing heavily in integrating artificial intelligence (AI) technologies across assurance and other departments. The company's commitment to innovation is exemplified by its EY AI Lab, which focuses on research and development of AI applications tailored to specific processes.

It is believed that AI-driven tools will help to increase effectiveness and overall operational efficiency. EY aims to foster its culture towards continuous improvement. Boosting AI within the organization indicates the ability to adapt to the outside environment, especially in such a fast-paced environment in terms of the development of advanced technologies. Through its innovative approaches, EY strives to redefine the future of auditing, while ensuring that it remains relevant and effective in an increasingly digital world.

## **2. Research problem definition**

The original structure of the well-known way of operating is constantly changing due to the rapid development of advanced technologies. One of them is Artificial Intelligence (AI), which is changing the way modern society thinks. Such tools demonstrate growing self-learning ability, logical understanding, and autonomous decision-making. However, at the same time, there are many emerging challenges in integrating AI into processes such as progressive finance, the banking sector, justice, and employment. Algorithmic bias in the tools, as well as a lack of transparency and accuracy, still raise ongoing concerns. Despite its potential to replace some labor and save time, cybersecurity risks and data snooping remain issues for regular discussions within companies regarding confidential data protection and the loss of knowledge. Even though some precautions should be taken to avoid potential negative effects, AI should be adopted within day-to-day operations, as it offers valuable and powerful possibilities (T.J.Olorunlana, 2025).

The AI integration presents both opportunities and challenges for the company, including the auditing processes. While AI tools can enhance efficiency, accuracy, and decision-making in auditing processes, there exists a critical gap in understanding how to optimally integrate these technologies within existing frameworks. EY Eindhoven itself faces a practical challenge in actual AI tool adoption. Although substantial resources have been allocated to the AI integration within the company, many audit employees do not consistently or confidentially apply available AI tools in their daily tasks. Despite the company already employing many AI agents and tools, many employees are unaware of them or do not use them for various reasons. The AI tools are very broad and do not have specific applications within the specific processes. Additionally, even though the AI tools

are internal, they have limited direct access to internal files or some websites and pages, including the internally created EYQ (EY.ai). Employees who do not use AI tools in their day-to-day operations lack process-specific guidance and an understanding of AI. Other potential causes need to be identified.

### **3. The SMART project aims**

Within an approximate 3-month period, the project aims to design the audit-specific guidance manual on the use of existing AI tools within the EY organization by identifying the main auditing processes and time drivers, while ensuring compliance with the GDPR. Existing artificial intelligence tools will be explored, the gaps will be identified, and potential ways to increase the understanding and AI usage will be implemented. Additionally, the impact of AI on operational efficiency, audit quality, and compliance with regulatory standards will be taken into account. The result of the project is to add value to the ongoing process within the company of extensive AI integration.

### **4. Main research question**

Which measures should be implemented by EY to encourage its employees to use AI technologies within the auditing procedures?

### **5. Research sub-questions**

- Which audit activities are most time-consuming?
- Are there any existing AI tools and how are they used?
- Which auditing procedures can be automated with the help of AI?
- What are the GDPR-aligned controls and measures that are present within the processes? (What are the company's policies?)
- Which guidance is required for AI integration and its safe adaptation by employees?

### **6. Research approach and methodology**

The mixed-methods approach will be used, with a strong focus on qualitative research. It will allow for a comprehensive analysis of the extent to which the AI is utilized within the auditing team and to understand the causes behind the problem, thereby exploring the multifaceted implications of integrating the AI.

More specifically, the quantitative approach will be used for the planned survey and analyzed numerically to determine the scope of the defined problem. Whereas the focus on a qualitative approach will help to process the project and achieve the desired outcomes, implying analysis of textual data from in-depth interviews with key stakeholders and desk research, leading to new ideas and insights.

### **7. Scope and limitations of the research**

Due to the global presence of the company and its multinational standardization among all the processes within the day-to-day operations, the scope of the project is primarily locally focused, with a further little possibility of generalization. It is a regionally focused study of audit delivery at EY Eindhoven, with potential for broader internal use. It is also

important to ensure that the outputs are operationally actionable based on the wide range of standardization and internal policies.

The audit methodology and internal frameworks will be investigated, as well as data protection regulations regarding confidentiality. The EY's existing AI ecosystem will be used as the baseline for further analysis, meaning only licensed by EY AI tools. The gap between the current and target situations regarding the increase in AI usage should be identified, which will potentially improve auditing time efficiency. The project will focus, in its full extent, on the auditing department, which is part of the assurance service line, unless otherwise required. A local implementation roadmap will be presented in the form of either a checklist, a manual, or other means of guidance.

Limitations might arise within the research regarding data relevance, as there are strict internal rules on confidentiality that cannot be overlooked or avoided. Internal due diligence is to be complied with. Research itself has clear deadlines, which impose time constraints on proper analysis and assessment. Client data is not available in most situations. In such cases publicly available documents will be used, in fewer cases the rounded customers' information if needed, in order to avoid sharing unaudited confidential data beyond the controlled environment by EY company.

## **8. Relevance and success of the research**

As mentioned, the AI is not only an ongoing global trend but also the future solution to direct automation of processes, which will naturally lead to increased effectiveness and efficiency. Since there is a broad integration of AI tools within the organization, it is more than relevant to investigate the causes behind the problem of why there is a gap between employees in the adoption of AI in their daily operations. It is crucial to provide solutions for enhancing AI usage and explain which measures are required for that.

The project outcomes are to be valuable, measurable, and feasible. The documentation is to be in line with the GDPR and risk awareness. Any received internal acceptances and distribution of the end product are to be considered as a success of the project. Additional reductions in average staff hours per selected task, fewer human errors, and fewer audit evidence retrievals will indicate the actual increase in AI use by employees.

## **9. Contribution of the research project to the realization of the relevant set of chosen study program-specific PLOs**

### *9.1 Performance Management (LO3) – Select applicable methods for analysis aimed at making the right management decisions for an organization*

This learning goal is realised through the main focus on analysing and advising on the integration of AI-based information systems within EY's audit procedures. This goal is directly applicable to this research project, as the development of sound research methodology is a key requirement for achieving valuable project outcomes. In order to analyse the current state of AI tools adoption and identify the underlying barriers, an appropriate set of analytical methods should be selected and justified. This directly reflects the description of the learning goal. The competency of selecting and deploying analytically appropriate methods to reach the right management decisions will be continuously developed throughout the project.

*9.2 Finance, Operations, and Reporting (LO6) - Give advice about the optimal design of information systems and business processes aimed at the effectiveness and efficiency of an organisation*

This goal fully aligns with the project's aim and the initial reasons for conducting this research. Integration of the new AI tools into certain auditing processes fully aligns with the learning outcome description, as the main results of the project are most likely to be a detailed, audit-specific guidance manual on AI usage, aimed at improving time efficiency and visibility. The purpose is indeed to advise on the optimal design of information systems and processes to improve audit efficiency through AI tools, ensuring they are effective and useful, which is a fundamentally operational problem in nature. The developed guidance will serve as advice on one of the business processes.

*9.3 Finance, Operations, and Reporting (LO7) - Compile and analyse external reports, taking into account law and legislation*

This goal is important for the project and can be elaborated during the conducted research as it most likely will involve the analysis of the external reports to get insights from the macro-environment. In addition, the development of any internal products always requires the control of confidentiality and thus the analysis of various legislations in terms of both the GDPR and the AI usage. Compiling and analyzing external reports while considering legal and regulatory requirements is essential to ensure compliance with financial reporting requirements. Lastly, one of the main components of conducting a research report is having a systematic and critical engagement with various external sources, which directly reflects the chosen goal, and thus can be developed during the project. Engagement with external legal and professional sources can be directly transferred to the audit practices under the regulatory pressures.