

## Artificial Intelligence in Accounting and Its Impact on Accounting Profession

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**Abstract:** *The field of accounting is a very integral part of any organization, whether big or small. In today's technology, it's important for every industry to be updated on the latest innovations. Over the years, there is a lot of talk about the concept of AI (Artificial Intelligence) and its impact on society and profession. Now it has reached a stage where it can drastically change the way things work. From monotonous lower level routine work to decision making, artificial intelligence can speed up the process and deliver more accurate results. The term Artificial Intelligence is not new, but the adoption of technology in bookkeeping and accounting is still in its primary stages. Accounting hasn't seen much innovation than any other Industry since the creation of Double Entry System (that was over 500 hundred year ago). However the positive news is that, the accountants are incorporating technology by applying Artificial Intelligence and Machine learning technology thus it is giving an opportunity to the accountants to re –imagine and enhance the quality of business and investment decision making effectively and efficiently.*

**Key words:** *Future of Accountancy, Innovation, Artificial Intelligence, Machine learning.*

### **I. Introduction**

“The accountants of the future will exist, but they will come to know how to interact with machines” The old time Image of an Accountant sitting with a tired expression on his face, with lot of files surrounding him, exists no more. Accounts today have become modish. As a demand for accounting service continues to grow, accountants are facing a phase of drastic Change. Emerging Technologies, Techniques and other accounting trends are entering the scene at a fast pace. Automation is one of the latest and fastest growing trends in the field of Accounting.

Over the years there is a talk about the Artificial Intelligence and its impact on Society and profession and now it has reached a stage where it can drastically transform the way things work. Artificial Intelligence has steep into every single industry and Accounting/ Bookkeeping is no Exception. When the WWW was available, only a few big companies could manage to go online and developed their own individual intranets. Of course that has been changed and today there is a firm, or a person, left not connected to the WWW. The same will happen with AI, and it may become as common as the internet is now (*Derek Bang, CPA, CGMA, the chief strategy and innovation office*). This Study, therefore discuss about how AI is reshaping the accounting and finance Industry and its impact on accounting profession.

**II. Objective Of The Study:**

1. To determine the role of Artificial Intelligence in the future of accountancy and its impact on accounting profession.
2. To determine whether AI will help Accountants to focus on High value strategic and advisory job.
3. To explore the successful cases of Artificial Intelligence in Accounting.

**III. Research Methodology**

The data sources used in this project are secondary data due to the complex nature of the subject topic. The sources of secondary data used in this project report are:

- Published printed sources – books, journals, magazine/newspaper articles
- Published electronic sources – general websites, e-journals, weblogs, mobile applications

**IV. Literature Review:****1. Report Title - “AI and the future of Accountancy”**

**Published by** - IT faculty at ICAEW (Institute of Chartered Accountants in England and Wales) (2017). Their work on artificial intelligence focuses on understanding the practical usage of AI across accounting/bookkeeping and business activities today and in near future. In addition, it will encourage wider discussion about the opportunities and challenges for the accounting profession.

**2. Report title – “Confidence in the future: How tomorrow’s technologies can help the finance function of today”**

**Published by** – PwC (PricewaterhouseCoopers)

The Report provides a practical perspective on latest technology’s in the context of finance and accounting executives' whether it has higher productivity in the field of finance or improved in the field of working capital management or higher quality commitment with stakeholders; vigorous strategic planning and budgeting. It throws a light on what’s here and what the finance function should do today to get ready for the future. The publication further discusses the process of integration of AI and how to face the obstacles. It also elucidates the AI initiatives taken up nation-wide and globally.

**3. Book title – “The Artificial Intelligence Handbook: Business Applications in Accounting, Banking, Finance, Management and Marketing.”**

**Publisher** - Thomson/South-western

The book provides a number of topics relating to the integration of artificial intelligence in any business or company. It covers all aspects and addresses technical concerns that may arise. The objective of the paper is to help and provide adequate information to business professionals understand AI software and how to practically use AI. Mr. Thomson provides overview of expert systems and neural networks. Applications in a various sector are included such as: banking, accounting, law, Insurance, marketing, and manufacturing.

**4. Book Title – “AI in Accounting and Auditing”**

**Author** - Miklos A. Vasarhelyi

The objective of this book is to provide an international perspective of the types of artificial intelligence research being undertaken in accounting and finance. It contains a number of papers which were presented at the International Meetings on AI in Accounting, Tax and Finance, held in Spain. Most of the intelligent agents and natural language understanding apps are presented here.

**5. Article – “How AI is changing accounting”**

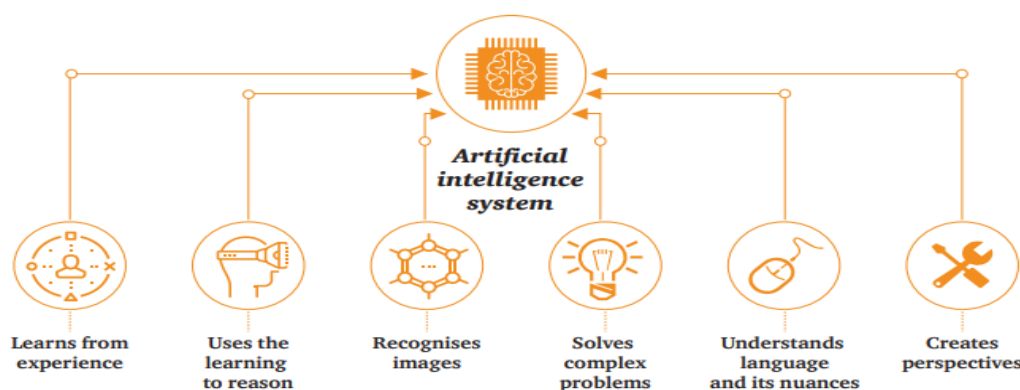
**Published by** - Sarah Ovaska-Few at Journal of Accountancy

In the article, the author throws light on the increasing popularity of artificial intelligence and how it would make work more efficient. The article starts with a brief explanation about the artificial intelligence followed by successful examples of companies like Delloite and Crowe Horwath adopting artificial intelligence. The author also writes about what to expect from this new trend and says that a company can prepare itself by taking specialized projects in workplace, completing self-directed learning, , attending seminars or taking classes.

**V. Artificial Intelligence**

**V.1. Meaning of Artificial Intelligence**

Artificial intelligence (AI) means were computer program or a machine to think and learn. It is a field of study which makes computer ‘Intelligent’. Artificial Intelligence uses computer systems to execute the tasks that typically require human intelligence, like visual and speech recognition. Artificial Intelligence means a machine which imitates Human cognition. The most common way we currently see artificial intelligence being exploited with automation. Artificial Intelligence increases or expands the potential of computing to a whole new level. It helps computer systems to make predictions and changes accordingly just as human intelligence.



**V.2. Adapting Artificial Intelligence**

When the WWW was available, only a few big companies could manage to go online and developed their own individual intranets and of course that has been changed, today there is a

firm, or a person, left not connected to the WWW. The same will happen with AI, and it may become as common as the internet is now (*Derek Bang, CPA, CGMA, the chief strategy and innovation office*). More than 80% of the executives believe that Artificial Intelligence leads to a competition among various companies, and 79% of the executives believe that it will increase their company's productivity, (*MIT – Boston consulting group survey of > 3000 business executives*). All the firms, including small ones, should be thinking about how to embrace advanced technology like artificial intelligence (AI). *Derek Bang, CPA, CGMA, the chief strategy and innovation office*.

Artificial Intelligence today can be very powerful and are improving quickly. They provide results that can be extremely accurate and in some cases replacing human efforts. However they cannot replicate human intelligence. For many Industry, it's not a question of 'if' but rather when to adopt AI. Thus it is important for every business or industry to observe the development of AI technology and planning far in advance is necessary to adopt AI successfully.

### **V.3. Artificial Intelligence In Accounting**

The implementation of Artificial Intelligence is already having a fundamental impact on the Accounting industry. AI is being developed by many accounting firms and will drastically change the profession in coming year (*Jon Raphael, CPA, and Deloitte's audit chief innovation office*). "If you are a young Accountant, coming into the profession, you should understand what is going on and what is available to help you work along with Artificial Intelligence" (*Oliver Griffen*).

Companies today are implementing new technologies for operating their business, and one of which on the top of their list is accounting. The reason is because Artificial Intelligence is providing good and positive results such as improved accuracy, increased productivity and reduced expenses. With Artificial Intelligence, data handling and processing has completely become automated and it is one of the major benefits of Artificial Intelligence in the field of accounting.

Additionally, Artificial Intelligence can recognize and categorize the data from different sources to the respective accounting head. Apart from recognizing and categorizing, Artificial Intelligence can handle many tasks which are done by accounting professionals like processing of accounts receivables and payables This lead to the improvement of various areas of cost management by companies.

### **V. 4. Accounting Tasks Which Machines Can Do:**

#### **1. Monthly or quarterly close procedure:**

Once the company receives the numbers, AI will automatically consolidate it accordingly and provides accurate results.

**2. Procurement:**

The procuring method for many companies is filled with paperwork and use different formats for filing which may not be compatible with each other. However, machines with Application Program Interface can be integrated, and unstructured data can be processed. This makes the process paperless and easier.

**3. Accounts payable/receivable**

The existing system already has an Artificial Intelligence-powered invoice management process which can make accounts payable/receivable processing more streamlined with the help of digital workflow.

**4. Audit**

During audit, the auditors need not search file cabinets for documentation as they can easily access to the digital files. This, in turn, increases accuracy and efficiency of audits.

**5 Expenses Management:**

Artificial Intelligence helps to check and review expenses which reduce the tedious work of an employee.

**V. 5. What Is Left For The Accountants?**

Having better technology wouldn't mean that human cannot act on it. Even if machines perform all the calculations and basic audit-related tasks, someone would be needed to examine the process and draw a conclusion- that's where the role of accountant comes.

With the increase in the usage of AI, accountants are expected to move their position into consulting and advising to make sure that they are taking full advantage of automation while helping their business grow.

**Artificial Intelligence Does Not Mean Job Less**

Artificial intelligence is definitely helping the accountants from doing menial tasks, and this allows them to widen their roles and position. We can take an example of auditing of expense claims where AI can be used to remember and implement a company's expense policy. This would mean that accountants would no longer have to look through the receipts and categorize the date.

**V.6. Ai For Accounting And Human Intelligence Complement Each Other In The Industry**

An Accenture study in the year 17, found that 68 percent of the clients preferred having access to both human and robo-advisors. So it's not a surprise that the technology has made its way into other roles like bookkeeping and accounting. Automation develops opportunities for companies to focus on the day-to-day operations, streamlining processes so the entire organization can target those "big picture" objectives.

The future of bookkeeping and accountancy includes expanding Artificial Intelligence software services to clients like generating reports from books of accounts, balancing sheets and decreasing the time spent for manually inputting data. It also includes the accountant's ability to integrate those financial functions within the day-to-day operations of the businesses they serve.

AI in accounting is already looking after the initiation of payments and matching purchasing orders, automating data entry, and categorizing that data. One thing AI can't do as well, though, is the interpretation of that data within various contexts. This is where human intelligence is hard to defeat, making the combination a best-of-both-worlds scenario. Accountants may take the data that is generated from the automated collection and analyze financial trends more effectively and accurately

### **V.7. Successful Cases Of Artificial Intelligence Use In Accounting**

#### **Natural Language Processing (NLP) for reviewing Document:**

One of the successful case of AI put to use in accounting is the review of high volumes of contracts. According to Muraskin, Deloitte team might arrange through hundreds of legal documents looking for a change of control provisions during a client's sale of a business unit. This used to keep dozens of employees occupied for half a year. Now, a team of few members can use an artificial intelligence to complete the same work in less than a month.

Similarly, EY uses Artificial Intelligence to prepare lease accounting standards. When the Internal Revenue Service issues a fresh lease regulation, big companies have to manually examine thousands of leases to adapt with the new rule. Using Natural Language Processing, the Artificial Intelligence system is more consistent and efficient to adapt the new rule. This system has reached ROI in less than a year. Nigel Duffy, global innovation leader at EY, stated that it not only benchmarked Artificial Intelligence processes, but also the human processes. Now [they] have better measurability with quality and costs."

When evaluating potential procurement synergies during acquisitions and mergers requires looking into hundreds or millions of non-standardized accounts receivable and payable data. It is a nightmare to reconcile all this data, which used to involve manually building pivot tables and spreadsheets but with the help of NLP the work can be completed easily. At Deloitte once took four to five months to complete the work but with the help of NLP it is done within a week or a month.

#### **Machine Learning for Anomaly Detection**

Anomaly detection is a classic application of machine learning which identifies the outliers in data. Like how Credit Card Company finds fraudulent in credit card charges, Ernst and Young uses Machine Learning to find fraudulent invoices for stake holders and clients. One of Ernst and Young's global clients processes thousands of invoices each and every year and uses the anomaly detection to identify the fraudulent. This Machine Learning is especially used for detecting fraudulent data and invoices that involve national and global clients and, in turn, it helps to avoid the serious circumstances that result from violating sanctions, anti-

bribery regulations, or other aspects of the Foreign Corrupt Practices Act. Ernst and Young's Anomaly detection system has a 97% of accurate result and has been benefited to over fifty companies.

### **Natural Language Generation for Producing Reports**

Deloitte uses natural language generation (NLG), in its tax business by creating the text in computers. The company processes over 50,000 tax returns yearly for stakeholders, clients' and employees who have any complicated financial situations. Using NLG, Deloitte creates detailed reports of individual tax returns. Deloitte tax professionals rely on these reports to provide financial advice to clients during consultations.

Innovation leaders at the Big four are vigorously adapting AI. As Steve Toy, innovation leads at EY, warned, "If you don't innovate, the kid in the garage down the street will". The technology may not be here today, but it will get better over time and soon replace.

### **VI. Conclusion**

The study reveals that Artificial intelligence is the next big revolution in the field of technology and if integrated with accounting systems, it would be a major breakthrough. The future of accounting and bookkeeping will no doubt be shaped by AI and ML, automation is no longer a fancy option; it's a must for those accountants who want to remain relevant. Both small and large Businesses will be searching for accountants who have good knowledge on technology and automation to become more specialized in their fields along with their rapid response to the financial functions they perform. If accountants choose to accept artificial integration in spite of being concerned about the change in their business model, they will be the one who will be the more successful with the shift. Adapting to new technology is a 'key' for future of accounting. The major concern regarding AI is replacement of jobs or unemployment due to the takeover of technology but the integration of artificial intelligence will facilitate employees to focus on more strategic work which requires skills and that in turn would lead to enhanced development. If humans work with technology, it could make a major impact on society

### **VII. Suggestions**

AI has the capability to solve many of today's problems and push humans even further to overcome many obstacles. But this change is only possible if individuals and businesses accept it with a goal of creating man-machine hybrids. Accounting has been digitalized but the methods of accounting are the same as what they were in ancient times. It is time to take this big step to enhance the accounting methods and develop the standards. Accountants should expect to move into a more dynamic consulting and advising space to make sure they take advantage of automation and AI, while building a better business model for their firms. This can be achieved in a number of ways, but most accountants can start by carving out more time for analysis and meaningful reporting and recommendations to help their clients succeed in business. As with most technologies, data is what fuels AI.

**VIII. References:**

1. ICAEW's report titled "Artificial Intelligence and the Future of Accountancy"
2. Various reports and articles published on the official PwC website.
3. <https://www.journalofaccountancy.com>
4. <https://www.forbes.com/sites/jeanbaptiste/2018/01/22/why-artificial-intelligence-is-the-future-of-accounting-study/>
5. <https://www.accountingtoday.com/>