

CHALLENGES OF ACCOUNTING PROFESSION ON INFORMATION TECHNOLOGY IN THE INDUSTRIAL REVOLUTION 5.0 ERA

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ABSTRACT

Today technology is a basic necessity. An accountant who must be able to adapt to technological developments. In the era of society 5.0, digital disruption is increasingly real. This study aims to find out the challenges faced by the accounting profession with the advancement of information technology in the 5.0 industrial revolution era. This research is qualitative descriptive research guided by the existing problem formulation to examine the situation comprehensively. This study are based on data collected through literature studies and internet searches. This study aims to find out how far the role of accountants will survive in the era of the industrial revolution 5.0 with advances in information technology. The results of this study found that the accounting profession faces many challenges in the era of the industrial revolution 5.0, such as the need to adapt to rapid changes, understand the needs of customers and employers, and build capacity or compensation.

Keywords: *Industrial Revolution 5.0, Accounting Profession, Information Technology, Decision Making*

1. INTRODUCTION

The epidemic rapidly spreads worldwide, people are thinking outside the box and looking for solutions to survive. The most visible changes since the outbreak have been linked to the economic sphere and cannot be avoided. Many jobs have been affected, including layoffs, business failures, and even acquisitions of owned assets. An accountant is one of the existing professions and has developed from year to year, experiencing increases and decreases to sustain its existence. The accountant's role is increasingly developing for business interests that create the stability and sustainability of a business [4]. Professing and working as an accountant requires a solid understanding of accounting principles and procedures. Most accountants learn how to use accounting software known as accounting systems to do their job. The client also employs accountants with solid computer skills to enter their data into the company's accounting system, known as bookkeeping. In addition, an accountant must also have reasonably good math skills because most of their work involves numbers [18]. Overall, becoming a qualified accountant requires a solid background in math, business, computers, and the basics of bookkeeping [1,19].

In the current era of the modern industrial revolution 5.0, the development of the digital economy has increased risks while opening up new opportunities. These changes will have a significant impact on accountants. At this time, the increase and development of technological innovation, especially in information technology, has kept pace with the times [2]. The use of online media to create new target markets is one example of current innovation developments. More sophisticated robots and machines with multiple roles can rule the world. Information technology, which plays an essential role as a tool that helps companies and organizations' accounting processes, has been around for a long time because with the use of this information technology, accounting processes and results can be more accurate and even run more efficiently, save time, and save costs [3].

According to data from The Economist (The Future Of Employment) there is a 94% chance that robots will replace the accounting profession. That large percentage is due to developments in robotics and data analytics that will take over the primary jobs of accountants. This study to clarify how the accounting profession can survive and deal with all

changes and improvements in information technology in the 5.0 era. In this case, the results of this study contribute to further knowledge about understanding the roles and challenges of accountants with advances in information technology in the 5.0 industrial revolution era for all readers, especially the role of accountants in this 5.0 industrial revolution era [5]. According to data from the Ministry of Communication and Informatics, it is stated that currently, Indonesia is recruiting 82 million people as internet users, ranking Indonesia 8th in the world regarding the most significant population using the internet. Also, through this, the Indonesian government created an "INSAN" program to educate the Indonesian people to avoid and minimize the negative impacts of using their internet. Therefore, this research is expected to provide an in-depth understanding of the challenges that will be faced by the accounting profession as one the Indonesian people themselves in the era of the industrial revolution 5.0.

2. LITERATURE REVIEW

2.1 Industrial Revolution 5.0

The era of industrial revolution 5.0 arrived two years ago in response to the resolution of industrial revolution 4.0. New technologies have developed rapidly [7]. The industrial revolution 5.0 is one example of this technological development. In this era, it is possible to use modern bases (AI, robots, IoT). The era of the industrial revolution 5.0 was announced on January 21, 2019. Harayama (2017), the era of the industrial revolution 5.0 consisted of people or groups who had various information built from the previous era, namely era 4.0. The community aims to build a common welfare—building society towards a more prosperous life with all the new positive changes in this 5.0 era. The era of the industrial revolution 5.0 is a potential between individuals and technology to increase the level of quality of life for each through a society that is considered brilliant (super bright society). The Industrial Revolution 5.0 is a new system focusing on the interaction of machines as a technology with humans.

The early stages of the emergence of digital technology gave something new to the world of technology [10]. They are creating a breakthrough, namely data-based knowledge, which is then processed into operational intelligence and business intelligence with the result of a system with the application of high technology in making decisions and producing increasingly accurate final results

[17]. The era of the industrial revolution 5.0 has a high level of industrial power in its efforts to achieve a social form that provides benefits and meets the community's needs without compromising their livelihoods [6]. This era also seeks to provide high welfare for industrial workers. Industry 5.0 completes the industrial revolution paradigm, pushing towards human-centered sustainable industries through research and innovation. The research question in this study are how the challenges of the accounting profession with development in information technology in the era of the industrial revolution 5.0 ?

2.2 Information Tecnology

According to the Big Indonesian Dictionary, Information Technology is the application of technology such as computers, laptops, electronic devices, or telecommunications used to process information in digital form. In general, technology for gathering, preparing, storing, processing, publishing, analyzing, and disseminating information is information technology. Information technology is a guide for human life because, in this era, everyone should be able to enjoy or take advantage of technology that has developed very rapidly. The Internet is one example of the implementation of information technology worldwide [8]. With this technology, distance, time, and limitations can be avoided or even eliminated in accessing information. Advances in information technology continue to reap the pros and cons in society. On the one hand, almost all information can be easily obtained via the Internet as one of the implementations of information technology. However, on the other hand, this information technology continues to make everyone compete and compete in providing information on the Internet. So, not all information on the Internet is always accurate [9,15].

2.3 Accounting Profession

Based on the Big Indonesian Dictionary, accountants are a field of work based on the formation of specific abilities (skills, persistence, thoroughness, and others). The accounting profession has learned intellectual activities, including formal and informal training, as a start to obtaining a certification issued by a scientifically competent group or body in community service, applying professional service ethics by developing competence in generating ideas, authority, techniques, and morality [11].

An accountant covers all aspects of work in the accounting specialty, including public accounting, internal accountants working in industrial, financial, or commercial companies, accountants working in government, and accountants as educators [4, 13]. The profession of an accountant is divided into two, namely, the public accounting profession and the non-public accounting profession [7,12]. In this case, a public accountant is a professional with the right to express an opinion on the adequacy of financial reports prepared by the government. Thus, the role of public accountants will be vital in increasing the development of the business world [14]. Meanwhile, the non-public accounting profession is further divided into commercial or corporate accountants, government or state accountants, and educational accountants. Like the general organizational structure of a company, a corporate or commercial accountant occupies a position, from the position of an ordinary employee to the chief accountant or director of finance. Developing a company's accounting system, preparing reports for external parties, and preparing a budget to deal with tax issues are the main tasks of a company accountant [15]. A government or state accountant is employed by a government agency, such as the Supreme Audit Agency (BPK) or the Financial and Development Supervisory Agency (BPKP). Inspecting and overseeing the flow of government finances and designing accounting systems for the government are the primary responsibilities of a government accountant. Meanwhile, an educator accountant is more focused on the world of education as a service to the needs of people who need this expertise [16].

3. RESEARCH METHODS

3.1 Research Framework

Based on the research framework above, the initial stage of this research was the collection of data from previous research on the development of information technology and the accounting profession in the world industrial revolution 5.0 era as a guide which then found gaps with previous research on the role of accountants in the industrial revolution era 5.0, and finally is to provide solutions to answer the challenges of the accounting profession with advances in information technology in the era of the industrial revolution 5.0.

3.2 Research Methode

The research method used in this study uses descriptive qualitative research methods. The

descriptive qualitative method is a research method to explain the events and processes currently happening, which are the subject of research, and then analyze the data to get a solution to the problem. Research that uses a qualitative descriptive type describes something, for example, stating a condition, developing an opinion, or an ongoing process. Qualitative research involves investigating a topic from a subjective or individual point of view. Descriptive research is a method of studying a topic from a certain point of view. In other words, descriptive research is an approach used to study a particular topic by describing its various aspects.

3.3 Research Object

The research object is one of the main components when conducting research. The first thing that must be considered when conducting research is the research subject. When the research subject includes one or several problems that will be examined to find a solution. So, the subject of research is to explain what the subject is. The research objects used in this study include: (1) The accounting profession, (2) The era of the industrial revolution 5.0, (3) The role of accountants in the era of the industrial revolution 5.0

3.4 Data Source

In this study, the data source was obtained from clear information about how the data can be collected and processed. The data source used in this study is a secondary data source. This secondary data source contains data obtained and obtained indirectly but through media or other intermediaries that were available before the implementation of this research. In this study, the secondary data sources were from online media, books, journals, et cetera

3.5 Data Collection Techniques

Data collection techniques in this work are as follows:

3.5.1 Literature Study

Data collection using the literature study method is a library study method related to searching for library data, reading, recording, and managing the research material. This method searches for data or information through books, journals, articles, and other sources related to the topic under study. A literature study is used to identify the problem under study and the results of the investigation as well as to find various information related to the topic under study.

3.5.2 Online Data Search

The online data search method is searching for information through online media such as the internet or other network media that offer online services. Online data tracking is a data collection technique enhanced by technology. This online data search makes it easy to find data related to the problem being researched. Searching for data online can help search for past data that has been for years.

3.6 Data Analysis Method

The data analysis method used during the research process is a qualitative descriptive analysis method. The qualitative descriptive analysis method is a data analysis method that is carried out to explain an ongoing process or event that is the subject of research; then, the data or information is analyzed to solve problems and find solutions to the problems being studied. This qualitative descriptive data analysis tries to describe and interpret something—for example, circumstances, ongoing processes, or consequences.

3.6.1 Data Reduction

Data reduction is a step in qualitative data analysis techniques by simplifying, classifying, and eliminating unnecessary information so that meaningful information can be extracted from the data and conclusions can be drawn more quickly.

3.6.2 Data Displaying

Displaying or presenting data is the second stage of qualitative data analysis which is the stage of systematically compiling a set of information to facilitate the possibility of conclusions. The form of presentation of qualitative data used in this study is in the form of narrative text. The presentation of this data will be arranged in a relational pattern to facilitate understanding.

3.6.3 Drawing Conclusion and Verification

The last stage of qualitative data analysis is concluding and verifying data. This stage is carried out by examining the data reduction results, which then shows the objectives of the analysis that can be achieved. This phase is about finding meaning from the information gathered by looking for correlations, similarities, or differences resulting from the studied problem.

4. RESULTS AND DISCUSSION

4.1 The Role of Accountants and Advances in Information Technology in The Industrial Revolution Era 5.0. We live in the era of the industrial revolution 5.0, which will change each group's life, work, interactions, and other things. In

this case, the accounting profession in the 5.0 industrial revolution era clearly cannot underestimate the extraordinary impact of technology. Accountants need to hone abilities, and skills, build knowledge and increase high ethical values to withstand pressure and win the competition in this 5.0 era. Most of the economic activities resumed in the era of the industrial revolution 5.0, which changed human life in the world of work. The industrial revolution 5.0 can erase many jobs, including accountants, which the latest technology can replace. Technology in the 5.0 era must be utilized as best as possible as a companion tool for accountants, not to become a problem. This technology creates a challenge that accountants must pass.

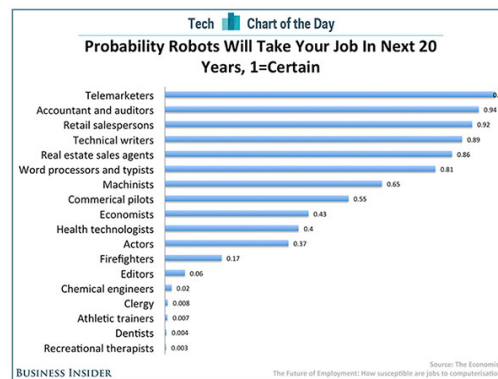


Image Source: *The Economist, The Future Of Employment*

The picture above is data on several professions that robots will likely replace. Based on the picture above, in recent times, various media have provided data about several professions that play a minor role in this era of the industrial revolution 5.0. This can happen with the increasing development of information technology, machines, computerization, and other automation. The data is published by The Guardian, World Economic Forum, McKinsey Global Institute (MGI), Business Insiders, Forbes, and others (2018). Jobs such as therapists, dentists, trainers, bank tellers, production, and manufacturing have a relatively low probability of being replaced by robots. However, on the other hand, jobs such as software engineers, nutritionists, surgeons, accountants, economists, mathematicians, and computer scientists have a significant possibility of being replaced by robots.

The figure illustrates that robots can replace the accounting profession in the next 20 years. The data image also shows that the

probability that a robot will take over the accounting profession is 94%. The rapid development of technology marks the era of digitization, which can change the control over what people usually do, just as technology has an outstanding possibility to change the role of accountants. So, in this case, an accountant must prepare themselves to compete side by side with technology. Mastery of technology is one of the keys to avoiding technological challenges in the 5.0 industrial revolution era, which threatens the existence of the role of the accounting profession.

4.2 Challenges of Accountants in the Era of the Industrial Revolution 5.0

Industrial revolution 5.0 is a continuation of industrial revolution 4.0. The 5.0 industrial revolution will face several problems that have not been fully resolved in the 4.0 industrial revolution, as well as new challenges or problems that did not exist in the previous era.

4.2.1 Adjusting to Rapid Changes

Artificial intelligence is now embedded in almost every accounting field, causing anxiety and tension for accountants because this will impact them, reducing their participation as humans in accounting and corporate monetary matters. Technological advances are expected to threaten several existing professions, including accountants. According to a study by the University of Oxford it is shown that there is a possibility that more than 95% of an accountant will no longer work because technology, such as machines, has taken over their expertise. Artificial intelligence, robotics, and machine learning erode traditional accounting operations by minimizing human failure and having higher computational power. As the era progresses, the accounting profession has evolved from data management and processing to professional judgment analysis. Accountants need to improve their technical knowledge of accounting and finance to help businesses and stakeholders make better decisions. This can be seen in companies' different accounting roles and practices in collecting, preparing, researching, communicating information, conducting analysis, and making decisions. Accountants need to be more adaptable to keep up with technological advances by acquiring skills that technology cannot replace.

4.2.2 Understanding The Needs of Customers and Employers

The 5.0 industrial revolution will significantly change the company's business

processes. According to Chandra & Wijaya (2021), companies will increase sales of physical objects (asset builders), hire people to serve customers (service providers), sell intellectual property (technology creators), and create networks (network orchestrators) as intermediaries in interaction and shared value creation by various customers. The industrial revolution 5.0 is expected to provide opportunities for the development of the latest technologies, such as the development of Financial Technology, which refers to the use of the latest software for the provision of financial services, and Regulation Technology which includes artificial intelligence and machines to address regulatory challenges in the financial industry (CAO Japan, 2018). Understanding rapidly changing business models to meet the needs of clients and employers is another challenge for accountants. Changing business models raises new problems for accountants in providing relevant information and judgments for decision-making. Accounting information is widely used to make pricing, financing, and other important decisions. However, several studies highlight that changes in business models reduce the relevance of information in standard financial reports.

4.2.3 Building Capacity or Compensation

One of the challenges for accountants is matching their competencies to the expectations of their clients and employers. Technologies in new industries, such as FinTech and RegTech, can take over the accounting profession's role in money management tasks. This has led to changes in the roles and skills required of accountants. In this case, it is emphasized that current accounting education still lacks standards and does not yet cover various accounting practices currently developing

4.2.4 Information Technology Acquisition

Although there is a severe shortage of technical skills in the accounting profession, the need for professionals with technological skills in data analysis is growing, making these skills more desirable than ever. One of the reasons why accountants and auditors are not familiar with technology may be because of the role of technology which is not discussed in depth and sufficiently in current accounting books. The scalable use of computing for business reporting and analysis has changed how companies conduct their financial reporting. With the use of information technology in almost every accounting field, the demand for accounting graduates with

advanced information technology skills is increasingly important. This research concludes that accountants need to receive proper training in information technology tools such as automatic identification systems, analytical programming, and data mining.

4.2.5 Tougher Competition

Process automation through robots, artificial intelligence, machines, human-machine collaboration, and new security features will enable companies and accountants to reach a wider audience of global customers without boundaries (Krauskopf et al., 2020). With this, there are more opportunities for accountants to get involved in getting work done from anywhere. Accounting tasks that used to require many people can now be done by a small team or by themselves with the help of machines. While this is an excellent opportunity for some accountants, uneven skills and access to technology gaps can create some stiff competition.

4.3 Accountant Solutions in Facing Challenges and Advances in Information Technology in the Era of the Industrial Revolution 5.0

It cannot be denied that many changes need to be addressed to maximize business creation opportunities, especially in the economy and various fields. As stated by the Director of the Undergraduate Program in Accounting Information Systems, the existing reality, especially technology, is a primary human need. Innovation in science and information technology changes people's perspectives and perspectives on the world in which they operate. It has replaced a lifestyle. The 5.0 industrial revolution emphasizes the human element, and this development must be balanced with increased human capital as a determinant of economic success. The concept of the 5.0 industrial revolution is an innovation in the history of humanity in the world, Society 1.0-4.0. This is what accountants need to prepare in the era of the industrial revolution 5.0:

1. Make sure an accountant has proof of validity and legality as an accountant. In addition to qualifications recognized in Indonesia, professional accountants are also required to obtain qualifications from international accounting bodies.
2. Goal-oriented creation, setting goals consistent with a professional accountant's skills, including mastery of information

technology. Because in the digital era and the 5.0 revolution, especially the accounting revolution, not all jobs can be separated from technology.

3. Good time management makes accountants and other professionals more organized in completing their work.
4. Always responsive to all updates that occur. The accounting profession in the 5.0 era needs always to be sensitive to changes that occur to obtain the latest information. In addition, innovations are now emerging in the field of accounting. This is important to work quickly, precisely, and accurately and analyze problems.
5. The advantage of using software to optimize performance is that using software for accounting is more accurate than manual calculations. This allows you to process data faster and save more time. Accountants must be able to transform from revolution 1.0 to 5.0 and become revolutionary experts by increasing their soft skills in various fields, especially accounting.

5. CONCLUSIONS, SUGGESTIONS AND IMPLICATIONS

5.1 Conclusions

Based on the results of research and discussion of the changing role of accountants with advances in information technology in the era of Society 5.0, it can be concluded that An accountant who is monotonous and results in essential level information management can now be managed by digital accounting technology. The role of accountants has been focused on the professional evaluation or interpretation of financial statements. Accountants need information. Information technology is a fundamental requirement in the provision of accounting financial statements. This requires an accountant who can use digital technology. Accounting science needs to focus more on improving data analysis skills, information evaluation skills, and the ability to use digital accounting techniques. This can reduce the teaching of traditional financial statement recording.

Suggestion

The suggestion of this study to faced the challenges are that an accountant must have several skills in dealing with the industrial revolution 5.0 as follows: (1) professional accountants must pay

close attention to detail in order to keep information accurate and organized; (2) To be effective in this role, an accountant must understand the basic functions of business to analyze and interpret financial data accurately; (3) Professionals in this field must be able to use advanced accounting software and other computer-based tools to work effectively.

5.2 Implications

Based on the results of the research above, the theoretical and practical implications can be explained as follows:

5.2.1 Theoretical Implications

- a. Improvement of information technology in the era of the industrial revolution 5.0.
- b. The accountant's role is crucial in the company.
- c. In this study, it was also proven that the variable challenges of accountants, information technology, and the 5.0 industrial revolution era had a more significant direct influence on firm value through the accountant's role variable.

5.2.2. Practical Implications

The results of this study are used as input for accountants, prospective accountants, and the general public to prepare themselves in connection with an increase in information technology in the industrial revolution 5.0 era, which will threaten their profession, career, and performance in the world of work and everyday life.

5.3 Recommendation

From the test results and conclusions above, it is recommended for:

5.3.1 Decision Maker

Decisions in the company are essential for the development of a company. Decision-making requires accuracy in analyzing problems, setting goals, and identifying and evaluating existing problems. In every company, problems will always be challenging for every employee and management. Through the problems of increasing information technology, companies need to take action to make the right decisions to solve existing problems. Companies need to be wise in making decisions so as not to terminate the work of accountants but to take advantage of information technology that is currently developing rapidly so that the performance of accountants can be more accurate and assisted.

5.3.2 Government Side

Through this research, it is hoped that the government can use it as a reference so that it is wiser to be moved to improve particular educational institutions to increase human resources so that the role of accountants or other human resources is not replaced by machines along with the development of information technology in the era of the industrial revolution 5.0.

5.4 Research Limitations

It cannot be denied that there are limitations in this study. This research is far from perfect with several limitations, such as this research is limited to three variables used to test challenges for the role of accountants with an increase in information technology in the era of the industrial revolution 5.0, which consists of the accounting profession, information technology, and the era industrial revolution 5.0 and this research is limited to data collection which is only limited to literature studies and online data searches. So there is no valid expression of how accountants carry out their role in this industrial revolution 5.0 era.

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