

THE ROLE OF INFORMATION TECHNOLOGY IN THE DEVELOPMENT OF COMPUTERIZED AUDIT

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ABSTRACT

Accounting and Information Technology (IT) and Information Systems have become intertwined in the world of education. The rapid development of Information Technology has also resulted in significant accounting changes. The utilization of Information Technology as a supporter of the achievement of organizational goals and objectives must be balanced with the effectiveness and efficiency of its management. The rapid development of Information Technology has also resulted in significant accounting changes. At each step of accounting's evolution, information technology plays a distinct function. The more sophisticated Information Technology is, the greater impact it has on the accounting profession. This research will be carried out to see the role of information technology in developments in computerized auditing. This research was carried out using a qualitative literature study method. This study found that advances in information technology can provide new opportunities for the accounting profession. The new opportunities include computer-based information system consultants, CISA, and web trust audits.

Keywords : Audit; Accounting Information System; Information Technology

INTRODUCTION

Computer-based information technology greatly influences modern society, especially corporate organizations. Today companies are faced with a changing and highly competitive environment. For this reason, the role of information technology is critical for companies to assist in improving business processes and decision-making (Wamba-Taguimdje et al., 2020). Business processes and decision-making will improve if the company properly and correctly applies information technology. For this reason, it is necessary to have an excellent internal control process for information technology applications within the company and simultaneously carry out a continuous, regular and independent audit process on existing information systems (Stević et al., 2018).

Accounting Information System (AIS), which is done manually, can now be done with the help of a computer, namely a computer-based Accounting Information System. The process in manual and computer-based accounting is not much different, the difference in computer-based information systems is only in data entry or transactions, this in the general ledger will change and can directly change the Financial Report as well (Fitriyani, 2019). More modern IT has a greater impact on the accounting

industry. Data processing has transitioned from a manual to an automated method. The incorporation of computer-based AIS into financial statement production will have an impact on auditing procedures. Due to its emphasis on financial statements, auditing will be affected by any changes made to the accounting process (Wamba-Taguimdje et al., 2020).

IT advancements also affect the development of the audit process. Advances in audit software facilitate computer-based audit approaches. Accountants are professionals whose activities are related to IT. This change in control and processing methods gave rise to new auditing methods. Auditors use special software designed for them to use in computerized auditing applications. This software is needed to filter data from computer files (Kend & Nguyen, 2020).

Auditors must learn new skills to work effectively in a computerized business environment. These new skills involve three areas: understanding computer concepts and system design; identifying new or additional risks and knowing what controls effectively reduce those risks; and learning how to use computers to audit computers.

LITERATURE REVIEW

1. Information Technology

Information technology is commonly called IT or infotech. Information technology was born around 1947, marked by the discovery of computers as the main component that became popular in the late 70s. Information Technology which means *Teknologi* (Indonesian) and Technology (English) literally, comes from the Greek “Techne”, which means art. Technology is manufacturing objects that can be observed with the senses to serve human needs or ideas. Meanwhile, *Informasi* (Indonesian) and Information (English) come from “To-Inform”, which means to tell (Parra et al., 2022).

The Oxford Dictionary describes information technology as the study or application of electronic devices, mostly computers, to store, analyze, and distribute information, including words, numbers, and images. Then, Martin restricts information technology to computer technology (hardware and software) used to process and store data, as well as communication technology used to transmit information (Stopar & Bartol, 2019). In addition, Lucas defined information technology as any forms of technology that are applied to the processing and transmission of electronic information. Information technology includes microcomputers, mainframe computers, barcode

readers, transaction processing software, spreadsheet software, and communication and network devices. Williams and Sawyer conclude by explaining that information technology is a technology that integrates processing (computers) with high-speed communication lines that transmit data, voice, and video (Lucas et al., 2021).

The explanation of the two technologies that underlie information technology are as follows:

a) Computer Technology

Computer technology includes computer-related hardware such as printers, fingerprint readers, and CD-ROMs. A computer is a versatile mechanism that can be controlled by a software to transform data into information (Pandolfi et al., 2018). A program is a series of instructions that control a computer so it can perform the actions desired by its maker. Data is a raw material for computers that can be in the form of numbers or images, while information is a form of data that has been processed so that it can be useful material for decision-making (Arden et al., 2021).

b) Communication Technology

Telecommunications technology or communication technology pertains to long-distance communication technology. This category of technology includes the telephone, radio, and television. According to the preceding definition, Information Technologies combines computer and telecommunications technology. The technology environment permits the company's performance to improve. IT and performance are mutually dependent (Islam et al., 2021). The IT innovations that have occurred thus far include the development of hardware, software, data, and communication networks. According to Laudon & Laudon, the components of IT infrastructure are hardware, software, data storage technology (storage), and communication technology. Some authors divide storage technology into hardware components, so that IT components include hardware, software, and communication (Setyowati et al., 2021).

2. Accounting, AIS, and Auditing

Weygandt states that accounting is the process of detecting, recording, and disseminating the economic events of an organization (company or non-business) to interested users of the information. Accounting is a body of knowledge that studies the

engineering of the provision of services in the form of quantitative financial information of organizational units in a specific country environment and the method of delivering (reporting) that information to interested parties so that it can be used as a basis for making economic decisions. Accounting information system is a collection of two or more interdependent components or subsystems that work together to accomplish the same objective (shared purpose) (Achadiyah & Mentari, 2022).

Auditing is a systematic process carried out by someone competent and independent regarding the acquisition and assessment of evidence objectively. This activity is carried out by collecting and evaluating evidence of quantifiable and quantifiable information related to a particular economic entity concerning statements about financial actions and events. This audit attempts to identify the level of conformance between the statement and the defined criteria and disseminate the findings to those who are interested (Chen et al., 2020). According to Mulyadi, auditing is a systematic method for obtaining objective evidence about assertions about economic activities and events, determining the level of conformance between these statements and the defined standards, and communicating the results to interested parties. The audit carried out on companies that have not used a computer system as the primary tool for data processing is called conventional auditing. On the other hand, for companies whose main element of data processing has been using a computer, it is called a PDE audit or an EDP audit (Mayndarto, 2022). According to Weber, there are six reasons why an information technology audit needs to be carried out, including:

a) Losses due to data loss

Today, data has become one of the most critical assets for a company. Imagine if you are the head of a company where most of the sales you achieve are made on credit, where buyers will pay their bills later. To record sales, you use the help of information technology. For example, all the billing data will be lost due to a virus or a fire in your computer room. This data loss may result in your company being unable to bill customers. Or, if it can still be done, it will take a very long time because you have to manually verify your sales documents (Hasan et al., 2020).

b) Mistakes in decision making

Many businesses use the Decision Support System (DSS) to make critical decisions. In medicine, for example, the doctor's decision to perform surgery can be determined by using the software. You can imagine the risks that might be caused if the doctor entered the patient data incorrectly into the information technology system used. The stakes are no longer material but someone's life (Arnott & Gao, 2019).

c) Risk of data leakage

Data for most business sectors is an invaluable resource. For example, information about customers can be a company's competitive strength. Imagine you are a telecommunications company director with 5 million subscribers. Without you knowing it, your company's customers have often switched to competing companies (Hodgkinson et al., 2021). After going through the audit process, it was finally discovered that your company's customer data had fallen into the hands of a competing company. Based on this data, competing companies then offer the same services you provide to the same customers but at a slightly lower cost. This data leak will not only result in the loss of several customers but can further disrupt your company's survival (Frishammar et al., 2019).

d) Computer Abuse

Another reason for the need for an information technology audit is the high level of computer abuse. The parties who can commit computer crimes are very diverse. We know the existence of hackers and crackers. Hackers are people who intentionally enter an information technology system illegally (Furnell & Dowling, 2019). Usually, they carry out hacking activities for the pride of themselves or their group, without intending to damage or take advantage of their actions. On the other hand, Crackers carry out their activities to take as much profit as possible from these actions, for example, changing or damaging or even destroying computer systems (Kerr & Lee, 2021).

e) Losses due to calculation process errors

Often, information technology is used to perform complex calculations. One of the reasons for using information technology is its ability to process data quickly and accurately (for example, calculating bank interest). Using information

technology to support the interest calculation process is not without the risk of error (Gbongli et al., 2019). This risk will be even more significant, for example, when the bank has just changed the system from the system they previously used. Without an adequate system development mechanism, miscalculation or fraud may occur. Errors caused by this new system will be difficult to detect without an audit of the system (Faccia & Mosteanu, 2019).

f) The high investment value of computer hardware and software

The investment spent on an information technology project is often huge. In Indonesia, the budget allocation for investment in information technology is relatively no larger than abroad. In Indonesia, the budget allocation ranges from 5-10 percent, while it can reach 30 percent of the company's total budget abroad. However, the amount is tremendous when viewed from the absolute value of the amount of rupiah issued. Information technology is no longer a side complement for companies. However, information technology supports the company's primary operations (Olivia et al., Nasrudin, 2020). The support of sophisticated information technology will enable companies to plan and control their operations quickly, precisely, and accurately. Because information technology is the company's primary concern, the information system must be monitored in its implementation. Supervision of the implementation of the company's information system can be done by auditing the information system. The company can quickly obtain information on its overall operations whenever needed by conducting an information system audit and has a high-security guarantee (Javaid & Khan, 2021).

METHOD

Method is a method of work that can be used to obtain something. While the research method can be interpreted as a work procedure in the research process, both in searching for data or disclosing existing phenomena (Zulkarnaen, W., et al., 2020). This research will be conducted using a qualitative literature study method. The data obtained in this study came from the results of previous studies or studies that still have relevance to this research. Research data that researchers have successfully collected will be processed immediately so that the research results can be found later.

RESULT AND DISCUSSION

1. Information Technology and Accounting Development

Today, information technology plays a significant part in human endeavors. Information technology has become the key facilitator for company activities, considerably contributing to organizational structure, operation, and management developments. Greater autonomy and authority within the organization is the predominant type of job and employee in the Information Technology Age. Significant accounting changes have emerged from the rapid growth of information technology. The growth of accounting based on technology advancements occurs in three phases: the agricultural period, the industrial age, and the information age. This is mentioned in *The Third Wave* by Alvin Toffler. Luca Pacioli established the double-entry bookkeeping method in 1494, marking the beginning of significant accounting events. Nonetheless, accounting practice dates back to an earlier time period. In his book *The Third Wave*, Alvin Toffler states that in 8000 BC, which was declared the period of farming, people were familiar with technology, information, and accounting. At that time, accounting technology was still very simple. Because the environment is still very static and can be predicted easily, the single-entry bookkeeping system is considered sufficient. With this system, people only need information about how much their assets and debts are at a specific time. People have not considered how much their wealth changes and what causes them.

Alvin Toffler declared the years 1650 to 1955 as the industrial era. This era began with the industrial revolution with the invention of industrial machines. Human labor in factories began to be replaced by machines. Currently, accounting technology with single-entry bookkeeping is no longer adequate in providing accounting information. People began to need information about how much income they earned during a specific period and how much changed their wealth. In this era, Luca Pacioli introduced the double-entry bookkeeping system even though he was not the inventor of this system. Because the human need for information is increasingly complex, the double-entry bookkeeping system has developed. Starting from bookkeeping techniques to complex accounting methods such as accounting for inflation, pension funds, leasing, and others. At this time, the accounting information system, in an effort to provide

information to external and internal parties, is still manually only with the help of calculating machines or calculators.

The information age began with the invention of the computer in 1955. In this era, information technology already uses computers, and information processing becomes faster, processing and storing information becomes cheaper and does not take up much space and time. AIS is one area of accounting heavily influenced by IT advancements. The accounting cycle in a computer-based AIS is identical to that of a manual-based AIS, meaning that neither additions nor deletions are made to the tasks required to produce a financial report. A computer-based AIS has no effect on the nature of the activity. In the era of information technology, the historical cost-based accounting approach is unsuitable for providing organizations with the necessary data.

In the era of information technology, the accounting model must be able to measure the rate of change in resources, the rate of change in processes, the rate of change in intangible fixed assets, the focus on customer value, the rate of change in processes in real time, and the ability to network. Changes to the accounting process will have an impact on the auditing process, as auditing is a discipline of practice that focuses on financial statements. In the 1960s, auditors still ignored computers, checking only around computers.

Auditors find that there is generally sufficient evidence for auditing effectively without direct involvement in the assessment of controls in the computer system. Many organizations have multiple controls that go beyond computer applications that provide auditors with reasonable assurance that the system is functioning correctly. Consistent with the integration and complexity of computer systems, the quantity and frequency of non-computer evidence are decreasing. There is an increasing demand for auditors to filter data from computer programs. Since acquiring computer data using current auditing procedures is impossible, new ways are required. Large public accounting companies provide software for their auditors to suit this need; using this software, auditors may get computer data independently (without assistance from data processing staff). The American Institute Of Certified Public Accountants published an auditing standard in 1974 that requires CPAs to evaluate computers during their examinations. Statements in Auditing Standards/Norms No. 3 were replaced by SAS 48, "The Effects

Of Computer Processing On The Examination Of Financial Statements”. The critical parts of SAS 48 are as follows:

a) When preparing for the audit, the auditor needs to think about how the business unit (entity) processes accounting information, as this impacts the structure of the accounting system and the character of the internal accounting control procedures. In addition to influencing the nature, timing, and scope of audit procedures, the amount to which computer processing is utilized in key accounting applications and the complexity of the processing can also impact the extent to which computer processing is employed. In examining the impact of a business unit's computer processing on the inspection of financial statements, the auditor should therefore consider the following factors:

- 1) Extensive use of computers in every important accounting application;
- 2) Extensive use of computers in every important accounting application;
- 3) The organizational structure of computer processing activities;
- 4) Data availability. The auditor may require evidence that is only available for a limited time or in a computer-readable format, such as documents on which information is entered into a computer for processing or specific computer files. Information may be entered into some computer systems without the need for any paper papers at all. When information becomes available for auditing or reviewing, the auditor may need to ask for a "container" to store it in accordance with the corporate entity's data retention policy. Moreover, certain computer-generated information for internal management objectives may assist in conducting substantive tests (particularly analytical review procedures).
- 5) Increasing the efficiency of auditing procedures through the use of computer-assisted auditing techniques. By employing computer-assisted auditing methods, the auditor may be able to apply specific procedures to the entire set of estimates or transactions. Depending on the complexity of the accounting system, an auditor may need to use a computer in order to access certain data or perform certain tests of control procedures.

b) Specialized expertise may be needed to evaluate the effect of computer processing on the audit, grasp the flow of transactions, comprehend the structure of internal accounting control systems, and plan and carry out audit procedures. If special talents

are necessary, the auditor must enlist the aid of specialists with such skills, whether they are members of the auditor's team or outside experts. If such a specialist is to be used, the auditor must have adequate computer literacy to convey the work's goals to them, ascertain whether the established procedures will achieve the auditor's objectives, and assess how well the results of the procedures applied fit into the nature, timing, and scope of other planned audit procedures. In the same manner as other assistants, the auditor is responsible for the use of such specialists.

Characteristics that distinguish computer processing from manual processing include the following:

1) Traces of transactions

Some computer systems are constructed such that comprehensive transaction traces that are useful for auditing are only accessible for a limited time or in machine-readable format.

2) Uniform processing of transactions.

Similar transactions are evenly assigned to the exact processing instructions via computer processing. Consequently, computer processing avoids the typographical errors that frequently occur during manual processing. If transactions are handled under the same conditions, however, programming mistakes (or similar systemic faults in computer hardware and software) will cause all comparable transactions to be improperly processed.

3) Segregation of functions.

Many internal accounting control operations that are done by multiple personnel in manual systems can be centralized in systems that utilize computer processing. Consequently, persons that interact with computers may be able to do contradictory tasks. As a result, it may be necessary to implement alternative control processes in the computer system in order to meet the control objectives often attained in manual systems by isolating functions. The use of "password" control procedures to stop individuals from performing conflicting functions in relation to assets and dealing with records via online terminals is another example of an additional control. Other examples of controls include adequate segregation of conflicting functions in computer processing activities, the establishment of control groups to prevent or detect errors or fraud in processing, and so on.

4) The possibility of errors and fraud

It may be more common in computerized accounting systems than in manual accounting systems for unauthorized personnel, even those executing control procedures, to get access to data, alter data without visible evidence, and acquire access to assets. Errors and fraud are less likely to occur in computer-processed transactions where fewer people are involved. When application programs are being created or updated, it is possible for mistakes or fraudulent activity to go undetected for a considerable amount of time.

5) Possibility of management supervision

Management can use the analytical tools made available by today's computer systems to keep tabs on and manage all aspects of their businesses. These additional controls can enhance the overall dependability of the internal accounting control system on which an auditor can rely. For instance, typical comparisons between actual operating ratios and budgeted ratios, such as reconciliation of projections, are frequently available for management review in a more timely manner if such data are computerized. Furthermore, certain programmable apps provide data on computer operations that can be used to track how exactly financial transactions are being processed.

6) Initiation or execution of transactions later with a computer

Certain transactions may be begun automatically, or a computer system may automatically execute the steps required to complete a transaction. There may not be a paper trail for these kinds of transactions or operations in a computerized accounting system, and management approval may be implied in the approval of these kinds of stimulus from the system.

7) Dependence of other controls on computer processing controls

Computer processing is capable of producing reports and outputs for manual control methods. The success of these manual control techniques may rely on the completeness and precision of the controls' computer processing. For instance, the efficiency of control methods that incorporate manual assessments of computer-generated lists of deviations is contingent upon the control over list creation.

The objective of the auditing practice is to render a judgement on the fairness of the SIA's financial statement presentation. Auditing techniques will be altered by the

accounting industry's advancements in computer-based AIS for producing financial reports. According to SPAP in SA Section 314.4 No. 05-09, internal control over computer processing, which can help achieve overall internal control objectives, includes both manual procedures and procedures designed in computer programs. The control process in an EDP environment consists of:

a) General controls:

- 1) Organizational control
- 2) Administrative control
- 3) Management of system development and maintenance.
- 4) Hardware and software control.
- 5) Documentation control
- 6) Security control.

b) Application control:

- 1) Input control
- 2) Processing control
- 3) Output control

The evolution of the auditing process is also influenced by technological advancements. Arens identifies three ways to EDP auditing: auditing around computers, auditing through computers, and computer-assisted auditing. Performing an audit of a CIS deployment without making use of the tools at hand is known as "auditing around the computer." Since it is presumed that the computer's functioning is correct and its contents are considered a "black box," an audit of the computer is limited to the area outside of the box. Inputs and outcomes are emphasized in this approach. A transaction processing operation is considered correct if and only if the output verification displays the expected result from the processed data.

Internal controls are frequently implemented in programs that are only accessible in electronic format as firms increase their usage of IT. The auditor's approach to an audit may need to change if the only available source documents are electronic versions of what would normally be paper-based documents such as invoices, purchase orders, billing files, and accounting records like sales journals, inventory lists, etc. This method is frequently referred to as computer auditing. When auditing via computer, there are three test categories for strategy testing: the test data approach,

parallel simulation, and embedded audit module technique. Microcomputers are utilized to aid in the implementation of the full auditing program in computer-auditing. The purpose of auditing with a computer is to automate the auditing process. Some audit functions will be transformed by the use of microcomputers. Computerized audits check the client company's internal controls (including compliance tests) and examine the data and files substantively. The use of expert systems in the auditing sector is implied by the preceding statement, which suggests that auditing with a computer is the way forward. Expert systems are specialized pieces of software that can mimic human performance in a narrow domain of expertise.

In expert systems, human knowledge is represented or modeled in a computer-processable format. The conditions for preparing financial statements are expressed using an IF-THEN structure. If the condition is met, an action is carried out. The professional requirements of public accountants stipulate that one or more auditors must conduct the audit with adequate technical knowledge and auditor training. However, in order to conduct an EDP audit, the auditor in issue must possess auditing, accounting, and computer expertise. Even more so if the auditor conducts audits through and within the computer. Several techniques can be used in the EDP examination, including:

a) Testing with Simulation Data

This technique is the most effective because the examiner can directly check the processing system using simulated transactions as test material. Several application programs are tested for their ability to process data to see whether the program runs correctly or if errors or irregularities are found.

b) Utilization of Integrated Testing Facilities

This technique is an extension of the data testing technique. Simulation transactions are combined with actual transactions by providing a unique code. The inspection can compare the test results with the stipulated conditions, assess the application program's reliability, and find out whether the application program has been equipped with error detection.

c) Parallel Simulation

The examiner makes a processing simulation using the program compiled by the examiner and an application model used routinely. The results of this simulation processing are then compared with the actual processing of the examination object

carried out. The comparison results will determine whether the program/system used is correct or if there are errors/deviations.

d) Inspection Module Installation

The examiner can install an inspection module/program into the application program to monitor it automatically so that data can be collected for inspection purposes. The examiner can conclude whether the application program is running correctly without deviating from periodically printed log records.

e) Use of Special Software for Examination (Audit software)

The examiner can test the reliability of the documentation and files of an examination object. Some audit software commonly used include Generalized Audit software, Audit Command Language (ACL), audassist, and IDEA-Y.

f) Computer Assisted Audit Techniques (TABK) or Computer Assisted Audit Techniques (CAATs).

Two conditions cause the auditor to consider the use of TABK:

- 1) The absence of input documents or the lack of an audit trail in the computer information system.
- 2) The need to increase the effectiveness and efficiency of audit procedures in the examination.

Two types of TABK are more commonly used in audits:

a) Audit software (audit software)

Audit software consists of computer programs used by auditors as part of their audit procedures to process significant audit data and the entity's accounting system. Audit software may consist of expert programs, purpose-written programs, and utility programs. Regardless of the program's source, the auditor must verify the program's validity for audit purposes before using the program. Package programs are computer programs designed to carry out data processing functions, including reading computer files, selecting information, executing calculations, and creating data files. And printing of reports in a format that the auditor has determined. Purpose-written programs are computer programs designed to perform audit tasks under particular circumstances. This program may be prepared by the auditor, entity, or an outside programmer assigned by the auditor. Entities use utility programs to perform standard

processing functions such as sorting, creating, and printing files. These programs are generally designed for audit purposes.

b) Test data for audit purposes.

In carrying out audit procedures, test data techniques are used by entering data into the entity's computer system. Then, the results obtained are compared with those found previously. Examples of the use of test data techniques are:

- 1) Test data are used to test specific controls in computer programs, such as online passwords and data access controls.
- 2) Test transactions are selected from transactions not processed or previously created by the auditor to test the characteristics of specific processing performed by the entity with its computer system. These transactions are generally processed separately from the entity's standard processing.
- 3) Test transactions are used in an integrated test by creating a "dummy unit" (such as a department or employee) to post-test transactions into the dummy unit in the entity's normal processing cycle.

2. Opportunities for Accountants

The progress of IT has created a feeling of pessimism in the accounting profession and prospective accounting professionals, especially those who are not ready to face new challenges due to advances in information technology. However, in the end, there was a harmonious relationship between the accounting profession and information technology. Theoretically, an auditor should not delegate responsibility for formulating conclusions and statements of opinion to other parties. In practice, during the rapid development of computer technology, it is difficult for an auditor, apart from pursuing his primary profession in auditing and accounting, to keep up with the developments in technology and computer science. Advances in information technology provide new opportunities for the accounting profession. New opportunities that may be achieved include the following:

a) Computer Based Information System Consultant

Accountants need additional knowledge to expand their competencies. Computer-based information system consulting services have two main components: a technology component that includes hardware, software, and communication technology and a business advisory service component related to the analysis of the

competitive influence of information systems and developing an effective business strategy. Accountants with basic knowledge of computer-based information systems can provide consulting services in various areas, including setting realistic business expectations, selecting competent computer experts or ISPs, and preventing the waste of complex technology costs.

b) Computer Information System Auditor (CISA)

Due to the complexity of computer-based processing, specialized auditors such as the Computer Information System Auditor (CISA) have become an urgent need. CISA must have special abilities, such as an understanding of hardware, software, databases, and data communication technology, as well as computer-oriented control and auditing techniques.

c) Web trust seal

Judging from the increasingly advanced development of information technology, primarily internet-based, the future of web trust can be said to be bright. Moreover, the internet user community's increasing demands for security and reliability in transactions. Web trust is a program that provides comprehensive assurance to businesses over the internet by building the trust and reliability of a website. This system was first introduced by the American Institute of Certified Public Accountants (AICPA) in collaboration with the Canadian Institute of Chartered Accountants (CICA). Web trust seeks to build public trust in transactions via the internet. The auditor's responsibilities in auditing web trusts are generally the same as those of financial statement audits, and the difference lies in the scope. Although the form is different, the concepts used in web trust audits are the same as financial statement audits.

CONCLUSION

Advances in technology, especially information technology, run very fast. So fast is the change, we haven't had time to use new technology in an instant, more advanced technology has emerged. This shows that the human ability to discover new technology is also increasing. However, simultaneously, the human capacity to adapt to these technological advances is also being challenged to accelerate. The development of information technology for the business world has resulted in digital economic activity,

which has significantly changed auditing from traditional manuals to real-time audits. The more advanced IT is, the more influence it will have on accounting.

IT advancements influence the growth of AIS in data processing, internal control, and enhancing the quantity and quality of financial reporting information. Auditing techniques will be altered by the accounting industry's advancements in computer-based AIS for producing financial reports. The evolution of the auditing process is also influenced by technological advancements. Advances in audit software facilitate computer-based audit approaches. Computer-based Accounting Information System Audit is an examination starting from input to output.

REFERENCES

- Achadiyah, B. N., & Mentari, S. (2022). Accounting measures of historical assets "Situs Watu Gong" Malang. *International Journal of Research in Business and Social Science* (2147-4478), 11(5), 354-365.
- Arden, N. S., Fisher, A. C., Tyner, K., Lawrence, X. Y., Lee, S. L., & Kopcha, M. (2021). Industry 4.0 for pharmaceutical manufacturing: preparing for the smart factories of the future. *International Journal of Pharmaceutics*, 602, 120554.
- Arnott, D., & Gao, S. (2019). Behavioral economics for decision support systems researchers. *Decision Support Systems*, 122, 113063.
- Chen, Y., Lin, B., Lu, L., & Zhou, G. (2020). Can internal audit functions improve firm operational efficiency? Evidence from China. *Managerial Auditing Journal*.
- Faccia, A., & Mosteanu, N. R. (2019). Tax Evasion_Information System And Blockchain. *Journal of Information Systems & Operations Management*, 13(1).
- Fitriyani, F. Y. (2019). Concept of Accounting Information System and Management Control System to Improve Company Performance. *Journal of Accounting and Strategic Finance*, 2(1), 82-92.
- Frishammar, J., Richtnér, A., Brattström, A., Magnusson, M., & Björk, J. (2019). Opportunities and challenges in the new innovation landscape: Implications for innovation auditing and innovation management. *European Management Journal*, 37(2), 151-164.
- Furnell, S., & Dowling, S. (2019). Cyber crime: a portrait of the landscape. *Journal of Criminological Research, Policy and Practice*.
- Gbongli, K., Xu, Y., & Amedjonekou, K. M. (2019). Extended technology acceptance model to predict mobile-based money acceptance and sustainability: A multi-analytical structural equation modeling and neural network approach. *Sustainability*, 11(13), 3639.
- Hasan, M., Popp, J., & Oláh, J. (2020). Current landscape and influence of big data on finance. *Journal of Big Data*, 7(1), 1-17.
- Hodgkinson, I. R., Jackson, T. W., & West, A. A. (2021). Customer experience management: asking the right questions. *Journal of Business Strategy*.
- Islam, N., Rashid, M. M., Pasandideh, F., Ray, B., Moore, S., & Kadel, R. (2021). A review of applications and communication technologies for internet of things (IoT) and unmanned aerial vehicle (uav) based sustainable smart farming. *Sustainability*, 13(4), 1821.

- Javaid, M., & Khan, I. H. (2021). Internet of Things (IoT) enabled healthcare helps to take the challenges of COVID-19 Pandemic. *Journal of Oral Biology and Craniofacial Research*, 11(2), 209-214.
- Kend, M., & Nguyen, L. A. (2020). Big data analytics and other emerging technologies: the impact on the Australian audit and assurance profession. *Australian Accounting Review*, 30(4), 269-282.
- Kerr, E., & Lee, C. A. L. (2021). Trolls maintained: Baiting technological infrastructures of informational justice. *Information, Communication & Society*, 24(1), 1-18.
- Lucas, M., Bem-Haja, P., Siddiq, F., Moreira, A., & Redecker, C. (2021). The relation between in-service teachers' digital competence and personal and contextual factors: What matters most?. *Computers & Education*, 160, 104052.
- Mayndarto, E. C. (2022). The Effect Of Audit Quality And Company's Financial Condition On Going Concern Audit Opinion At The Regional Public Accounting Office Of DKI Jakarta. *Jurnal Manajemen dan Bisnis*, 11(1), 30-40.
- Olivia, S., Gibson, J., & Nasrudin, R. A. (2020). Indonesia in the Time of Covid-19. *Bulletin of Indonesian economic studies*, 56(2), 143-174.
- Pandolfi, R. J., Allan, D. B., Arenholz, E., Barroso-Luque, L., Campbell, S. I., Caswell, T. A., ... & Hexemer, A. (2018). Xi-cam: a versatile interface for data visualization and analysis. *Journal of synchrotron radiation*, 25(4), 1261-1270.
- Parra, X., Tort-Martorell, X., Alvarez-Gomez, F., & Ruiz-Viñals, C. (2022). Chronological Evolution of the Information-Driven Decision-Making Process (1950–2020). *Journal of the Knowledge Economy*, 1-32.
- Setyowati, W., Widayanti, R., & Supriyanti, D. (2021). Implementation Of E-Business Information System In Indonesia: Prospects And Challenges. *International Journal of Cyber and IT Service Management*, 1(2), 180-188.
- Stević, Ž., Stjepanović, Ž., Božičković, Z., Das, D. K., & Stanujkić, D. (2018). Assessment of conditions for implementing information technology in a warehouse system: A novel fuzzy piprecia method. *Symmetry*, 10(11), 586.
- Stopar, K., & Bartol, T. (2019). Digital competences, computer skills and information literacy in secondary education: mapping and visualization of trends and concepts. *Scientometrics*, 118(2), 479-498.
- Wamba-Taguimdje, S. L., Wamba, S. F., Kamdjoug, J. R. K., & Wanko, C. E. T. (2020). Influence of artificial intelligence (AI) on firm performance: the business value of AI-based transformation projects. *Business Process Management Journal*, 26(7), 1893-1924.
- Wamba-Taguimdje, S. L., Wamba, S. F., Kamdjoug, J. R. K., & Wanko, C. E. T. (2020). Influence of artificial intelligence (AI) on firm performance: the business value of AI-based transformation projects. *Business Process Management Journal*, 26(7), 1893-1924.
- Zulkarnaen, W., Fitriani, I., & Yuningsih, N. (2020). Development of Supply Chain Management in the Management of Election Logistics Distribution that is More Appropriate in Type, Quantity and Timely Based on Human Resources Competency Development at KPU West Java. *MEA Scientific Journal (Management, Economics, & Accounting)*, 4(2), 222-243. <https://doi.org/10.31955/mea.vol4.iss2.pp222-243>.