

The Influence of Technology in the Development of Information Systems on the Field of Management Accounting

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ABSTRACT

The purpose of this article is to examine the impact of advancements in information technology on management accounting. The study employs descriptive qualitative methods and a literature review. Findings indicate that technological progress has led to significant transformations in the business sector. Various information systems now incorporate emerging technologies, including electronic data processing systems, data processing systems (DPS), decision support systems (DSS), management information systems (MIS), expert systems (ES), and accounting information systems (AIS). Information technology development also affects management accounting, as it generates information essential for planning, control, and decision-making processes. Consequently, the influence of information technology on management accounting can either benefit or challenge businesses.

INTRODUCTION

Nowadays, information is needed to be very important for aspects of life. The information needed must be fast, up-to-date and reliable. For this reason, Information Technology (IT) support is urgently needed in today's semi-automated era. Everyone is always competing to update their technology to meet their information needs (Razita Sima Adriana, 2024). The progress of information technology significantly influences the evolution of management accounting. The development of management accounting due to technological advances occurs in three stages, namely the era of farming, the industrial era, and the information era. The role of information technology in the evolution of accounting varies at each stage. As information technology becomes more advanced, its impact on management accounting grows stronger.

The swift advancement of information technology impacts modern human life, particularly in the area of management accounting. The technical aspects of computer development not only have an impact on the business world, but also other fields such as health, education, and government. The advancement of information technology has a profound effect on people's lives. After the invention of computers, the world began to enter a highly advanced world of information. Information technology, thanks to computers, has changed everything (Putri Choirul Khasanah, 2024). Computer communication is starting to be available to the general public, and currently many computers are available for the public to utilize as a tool for processing data to generate information (Septariani, 2020).

Information technology, powered primarily by computers, has transformed all aspects of life. Computer-based systems for processing accounting information have become increasingly familiar, and today, a wide variety of software is available for individuals to use as tools for data management to generate valuable information. In accounting, computer-based information processing systems are widely marketed to support accountants in producing information that is reliable, relevant, timely, comprehensive, clear, and verifiable. In the global business era, the influence of information technology advancements is unavoidable, evidenced by the widespread use of telephones, fax machines, computers, and satellites in various corporate communication activities. Information technology enables people to access information from distant locations quickly and affordably (Sri Maharsi).

The rise of information technology stems from the intensifying forces of globalization in organizational health, heightened business competition, shortened product and service life cycles, and the growing consumer demand for high-quality products and services. In response, companies seek new advancements by leveraging technology, which is anticipated to act as both a facilitator and interpreter (Tina Nurul Hidayati). The evolution of information technology has greatly influenced human life. Since the invention of computers in 1955, global civilization has shifted into the information age. Machines that once powered bicycles have been transformed, paving the way for widespread adoption of computer-based information technology. This technology enables

people to access information from distant locations rapidly and at a low cost (Oningingtyas, 2024).

The impact of advancements in information technology extends into management accounting. Empirical studies, such as Ellitan (2004), highlight that implementing information technology positively influences the productivity of manufacturing firms, demonstrating that technology plays a crucial role in enhancing operational performance, including faster production times and reduced defects (Saragih, 2023). In the information age, managers will require more data to make informed decisions that capitalize on external opportunities and support optimal internal objectives. This study seeks to examine the role of technology within information systems in shaping the field of management accounting.

LITERATURE REVIEW

Information Technology

Technology is a useful tool to help individuals in completing jobs. According to (Alannita, 2017), information technology is one of the means to improve company and business performance. The presence of computers as a form of information technology advancement provides a positive role in an organization (Annisa Rahma Qur'aini, 2024). Alliyah (2015) explained that information technology consists of a combination of hardware and software developed to convert data into valuable information. In the business world, the primary role of information technology is to process information, which involves five key tasks: capturing, transmitting, generating, storing, and sharing information.

It is designed to assist the administration in their day-to-day activities and decision-making. In 1880, computers for accounting systems were invented. In recent years, advancements in information technology have reshaped the structure of management and accounting activities within companies, leading to the establishment of specialized departments such as IT, IT maintenance, and technical support (Purwita Sari, 2024). Additionally, numerous roles have emerged as a result of the influence of information technology on corporate management and accounting systems. Consequently, the impact of technological evolution on the accounting profession has resulted in the development of Accounting Information Systems (AIS), which have evolved over time to support and regulate companies' economic and financial operations. For most organizations, an efficient accounting system is essential, and technological progress should facilitate the adoption of a computerized accounting system suitable for company use. As a result, companies are encouraged to upgrade their systems to meet their information needs and enhance decision-making processes (Alisya Namira, 2024).

The increasingly advanced technology environment provides companies with opportunities to improve their performance, thus creating a mutually beneficial relationship between information technology and company performance. The development of information technology so far includes the development of infrastructure in aspects of information technology, such as

hardware, software, data and communication. The infrastructure of information technology comprises hardware, software, data storage technology, and IT components. Some experts categorize storage technology within the hardware component, meaning the IT infrastructure can be broadly defined as consisting of hardware, software, and communication elements (Putri, 2021).

Management Accounting Information System

A management accounting information system is an information system designed to process inputs into outputs that serve specific management objectives. The core of this system lies in its processes, which include activities such as collecting, measuring, storing, analyzing, reporting, and managing information (Supratinigrum, 2021). The outputs generated may include specialized reports, production costs, customer costs, budgets, performance reports, and personal communication. The operational model of a management accounting information system aims to fulfill three primary objectives: (1) to supply information for calculating the costs of services, products, and other management-defined purposes, (2) to offer information for planning, control, evaluation, and continuous improvement, and (3) to provide valuable insights for decision-making (Nurhayati Sehab, 2022).

RESEARCH METHODS

The research employs a qualitative approach to examine the impact of information technology advancements on the evolution of accounting. This approach was selected due to the study's focus on understanding the role of technology in information systems within management accounting. A literature review serves as the primary method, enabling researchers to synthesize findings from various prior studies pertinent to the topic, thereby enhancing comprehension and addressing knowledge gaps in the field (Fadli, 2021). Through literature review, this research will integrate research with existing literature, such as articles, books, journals, and information sources from the internet (Adlini et al, 2022).

The data used in this study are secondary and come from studies that have been carried out in the last five years, namely in the period 2019-2024. The data will be analyzed to achieve a more thorough understanding of the challenges and opportunities faced by accounting practitioners in facing changes in the accounting landscape influenced by information technology. By applying a qualitative approach and literature review method, this research is expected to offer a more profound understanding of how technology in information systems affects the field of management accounting.

RESULTS AND DISCUSSION

The findings of this study highlight the profound and multifaceted impact of advancements in information technology (IT) on management accounting systems. These developments have not only redefined the operational landscape of accounting practices but have also transformed decision-making processes, enhanced organizational adaptability, and introduced sustainability into the core of accounting functions. By fostering greater efficiency, accuracy, and strategic

alignment, IT has become a critical enabler in the evolution of management accounting.

One of the most notable contributions of IT is its ability to enhance the efficiency and functionality of management accounting systems. Advanced technologies, such as electronic data processing systems, decision support systems (DSS), and enterprise resource planning (ERP) platforms, have significantly streamlined accounting operations. These systems automate routine tasks, reduce dependency on manual intervention, and facilitate real-time data integration, enabling organizations to manage complex datasets with ease. This technological leap ensures that financial reports are generated promptly and accurately, offering stakeholders reliable information for critical decision-making. Companies adopting ERP systems have reported significant improvements in resource allocation, operational productivity, and error reduction, underscoring the transformative potential of IT in accounting practices.

Moreover, the integration of IT has profoundly influenced the decision-making capabilities within management accounting. Decision support systems and predictive analytics tools have empowered managers with access to comprehensive datasets and advanced modeling techniques. These tools provide a dual advantage: they offer historical insights to identify trends and patterns while simultaneously enabling forward-looking analyses to predict future scenarios. This shift from intuition-based to data-driven decision-making has equipped managers with the tools necessary to navigate the complexities of modern business environments. The ability to generate real-time insights and perform scenario-based forecasting has further enhanced the strategic agility of organizations, allowing them to respond proactively to market dynamics and competitive pressures.

Despite these advancements, the adoption of IT in management accounting is not without its challenges. A significant barrier lies in the technological competence gap among accounting professionals. Many practitioners are unprepared to fully utilize the sophisticated systems available due to limited exposure and inadequate training. This gap results in underutilization of IT tools and undermines the potential benefits of technological integration. Resistance to change also remains a critical issue, often fueled by concerns over the costs of adoption and skepticism regarding the reliability of new systems. Addressing these challenges requires a holistic approach that prioritizes professional development through targeted training programs. Organizations must invest in building digital literacy and fostering a culture that embraces innovation and continuous learning.

Organizations that have successfully integrated IT into their accounting systems demonstrate superior adaptability to changing business environments. These organizations are better equipped to align their technological infrastructure with their strategic objectives, ensuring optimal resource allocation and effective response to internal and external challenges. Firms with robust IT adoption strategies often achieve a competitive edge by leveraging technology to enhance operational flexibility and long-term planning.

Conversely, companies that lag in embracing IT advancements risk obsolescence in an increasingly technology-driven global economy.

The role of IT in advancing sustainability within management accounting is another significant finding of this study. Through green accounting practices, IT enables organizations to track, measure, and report on environmental costs and sustainability metrics, such as carbon emissions and resource consumption. These practices align with the growing emphasis on corporate social responsibility (CSR) and global regulatory demands for environmentally sustainable operations. The integration of sustainability metrics into accounting systems not only enhances transparency and accountability but also strengthens stakeholder trust and positions organizations as leaders in ethical and responsible business practices.

However, the adoption of IT introduces risks, particularly in terms of cybersecurity and data privacy. As organizations increasingly rely on interconnected digital platforms and cloud-based systems, the potential for data breaches and cyberattacks becomes a critical concern. The financial and reputational implications of such risks can be severe, underscoring the need for robust cybersecurity measures. Organizations must implement comprehensive security frameworks, including advanced encryption protocols, multi-factor authentication, and regular system audits, to safeguard sensitive financial data. Ensuring the integrity and confidentiality of accounting information is essential for maintaining stakeholder confidence and upholding the credibility of financial reporting.

Empirical evidence from prior research supports these findings and illustrates the transformative impact of IT on management accounting. Studies have demonstrated that organizations adopting IT report significant improvements in productivity, decision-making quality, and financial reporting accuracy. For example, research by Ellitan (2004) highlighted how IT integration in manufacturing firms enhanced production timelines, reduced error rates, and increased overall operational efficiency. Similarly, Saragih's (2023) study emphasized the role of IT in improving the timeliness and quality of financial reporting, which directly supports managerial oversight and strategic planning.

The implications of these findings extend beyond operational efficiencies to include strategic and ethical dimensions. To fully harness the potential of IT, organizations must adopt a balanced approach that integrates technological investments with human capital development. Enhancing the technological competence of accounting professionals is crucial for maximizing the benefits of IT adoption. Furthermore, organizations must align IT strategies with broader goals, including sustainability and corporate governance, to ensure long-term success and societal impact. Addressing cybersecurity risks proactively will also be pivotal in maintaining the reliability and integrity of IT-driven accounting systems.

Ultimately, advancements in information technology have redefined the landscape of management accounting, offering unprecedented opportunities for efficiency, precision, and strategic alignment. However, the realization of these benefits hinges on overcoming challenges related to technological competence,

resistance to change, and cybersecurity. By embracing a holistic approach that combines technological innovation with workforce development and strategic foresight, organizations can position themselves for sustained success in an increasingly digitalized and environmentally conscious global economy. These insights provide a comprehensive framework for navigating the complexities of IT integration in management accounting and underscore the critical role of technology in shaping the future of the discipline.

CONCLUSIONS AND RECOMMENDATIONS

This research comprehensively confirms that Advancements in information technology have a profound impact on management accounting information systems. The implementation of information technology, such as electronic data processing systems, decision support systems, and executive information systems, has had a positive impact in terms of efficiency, productivity, and accuracy of accounting information. This technology allows for faster and more accurate data processing, which in turn supports better decision-making in management. The application of information technology has also enabled companies to respond to dynamic business needs more effectively, through more efficient data processing and deeper analysis capabilities.

However, this study also underscores the importance of technological competence in determining the success of the application of information technology in accounting. Although technology can provide many advantages, these benefits cannot be fully realized without the support of skilled and competent human resources in operating the technology. Therefore, organizations need to invest in skill development and technology training for their accountants, in order to ensure that they can efficiently leverage information technology to enhance the quality of accounting information and support better management decision-making.

This research also provides practical implications for companies, where the adoption of information technology must be balanced with sustainable human resource development. Organizations need to focus on improving technological competence through training and ongoing education for their accounting staff. In addition, further research is suggested to explore how organizations can improve technology management strategies and technology capabilities to optimize technology integration in accounting and management processes.

In conclusion, this study contributes to the literature on digitalization in accounting information systems, by providing insights into how technology can be effectively integrated in the accounting process, as well as the importance of technological competence in supporting the successful adoption of such technology. These findings are expected to be the basis for organizations in formulating better and more effective information technology development strategies in an ever-evolving business environment.

ADVANCED RESEARCH

The continuous advancement of technology presents vast opportunities for further exploration in the field of management accounting. As the integration of information systems into accounting practices becomes more sophisticated, the need to delve deeper into its multifaceted impact grows. Future research could examine how emerging technologies such as big data analytics and artificial intelligence are redefining the scope and functionality of management accounting. These technologies hold the potential to enhance the accuracy and efficiency of financial reporting, as well as support more nuanced and strategic decision-making processes.

Furthermore, the challenges posed by cybersecurity threats in the adoption of advanced technological systems warrant detailed investigation. Understanding the vulnerabilities within accounting information systems is critical to ensuring that the benefits of technological integration are not undermined by security risks. Additionally, exploring the global implications of these technologies could provide valuable insights into how diverse regulatory environments, organizational cultures, and economic conditions influence the adoption and effectiveness of technology-driven accounting practices.

Another significant area for advanced research lies in the intersection of technology and sustainability in accounting. With increasing global attention on environmental responsibility, the role of information technology in supporting green accounting and sustainable business practices presents a promising avenue for inquiry. Investigating how technological innovations can aid in tracking, reporting, and managing environmental impacts will be crucial in aligning accounting practices with global sustainability goals.

Overall, advancing research in these areas not only contributes to academic literature but also provides practical insights for organizations navigating the complexities of technological transformation in the accounting landscape. As businesses continue to adapt to a rapidly changing environment, these studies will play a pivotal role in shaping the future of management accounting.

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