

The Janus Face of Technology in Accounting: Dual Dynamics of Upskilling and Deskillling in the IT Enabled Profession

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Abstract

This study addresses both sides of technology adoption, demonstrating how it can either lead to deskillling or enhance the skills of accountant. The objective of this paper is whether technology in accounting is going to liberate the accountant or take the accountant's job away. The study examines whether technology in accounting liberates the accountants by enhancing their skills and role and whether the use of technology takes the roles of the accountant, providing an understanding of the upskilling and deskillling dynamics in accounting because of technology. Using a conceptual analysis methodology to examine this transformation through the metaphor of Janus, a two-faced Roman god, the study found that technology brings some enhancement to the accountant's job but is causing separation of conception from execution, and junior accountants

are deprived of the opportunity to manually perform tasks and develop implicit knowledge. For higher education institutions, there must be a redesign of the accounting curricula, and accounting programs must incorporate courses including data analytics and other advanced technological tools.

Keywords: *Upskilling, Deskilling, Polarisation, Hybrid Expertise, Digital Transformation*

Introduction

The introduction of technology in accounting has shifted accounting tasks from paper-based to digital-based, which is changing the very meaning of accounting (Savić & Pavlović, 2023; Khotanlou et al., 2025). This transformation is reshaping the work of the accountants and the skills they need. This study examines both sides of technology's impact on accounting: while it can help accountants upskill and advance, it can also lead to deskilling and reduced job security (Danneels & Viaene, 2022; Singh et al., 2024; Yomboi et al., 2024). To understand this reality, the metaphor of Janus—the Roman god with two faces—was used. One face looks toward the future, where accountants must constantly learn new skills. The other face looks back at what's being lost: traditional skills and sometimes even the accountant's role (Abbasi, 2025; Lee et al., 2025). This study addresses both sides of the issue at the same time, demonstrating how technology adoption can either lead to a reduction in skills or enhance the skills of the accountant (Moll & Yigitbasioglu, 2019; Appelbaum et al., 2017; Pargmann et al., 2023). Most discussions about technology in accounting tend to focus on a single question: does it make the accountant's job better or less secure? This study does not take a definitive stance. Instead, it looks at both at the same time, showing how technology can either shrink an accountant's skills or deepen them (Moll & Yigitbasioglu, 2019; Appelbaum et al., 2017; Pargmann et al., 2023; Gyau et al., 2025). The objective of this paper is to determine whether the application of technology to accounting has liberated or replaced the accountant. Specifically, this study examines whether accounting technology liberates accountants by enhancing their skills and roles, or whether it ultimately replaces their functions. In this study we provide a way of understanding the upskilling and deskilling dynamics in accounting because of technology (Lee et al., 2025; Kroon et al., 2021).

Technologies have enabled accounting tasks to be executed with more speed and accuracy than humans can. Such activities that accountants do may be the target of these new technologies (Kumari, 2025). Accounting will require professionals to be able to develop the ability to interpret complex data and also provide insights, lead risk management, and direct

decisions in business. This tension in literature is because the technology that makes the skills of the accountant obsolete is the same technology that improves it by demanding specific digital competencies (Crowston, 2025; Irfan et al., 2024).

From the upskilling perspective, the accountant will need to develop competencies in modern technologies like data analytics and systems management, which will boost the accounting value chain and augment the prestige in an organisation (Mbizi et al., 2022; Morandini et al., 2023; Gruenewald & Mueller, 2025).

For the upskilling dimension, the accountant will need competencies in digital skills to be able to function properly in a digital environment and also improve the value and prestige in the organisation (Mbizi et al., 2022; Morandini et al., 2023; Gruenewald & Mueller, 2025).

The upskilling or new skill development perspective

The second face of Janus is the deskilling perspective, which argues that using technology can potentially harm the professional by taking away their judgment and expertise (Gunz & Thorne, 2020), arguing that junior accountants may not develop deep insights in understanding why transactions are treated the way they are when software applies rules to transactions. Therefore, accountants will become just supervisors of a system they don't fully understand (Chukwuani, 2025; Kokina et al., 2021), losing independence (Alao et al., 2024).

The main discussion often champions the upskilling chronicle, encouraged by software vendors, professional bodies, and firms looking to modernise. However, an exclusive emphasis on this positive view is dangerously inadequate. It overlooks the very tangible risks of job displacement, the reduction of experience, and the possibility for a two-tier profession (Herbert et al., 2021).

The concept of the Janus face originates from the ancient Roman god who is typically depicted with two faces looking in opposite directions. This represents the idea that every situation has two opposing parts, positive and negative (Eliade, 1991). This Janus face will be analysed in three phases: A more comprehensive analysis and a firm understanding of the effect of technology acceptance on a one-sided ideal situation (Argento et al., 2025; Slezák, 2025) and the other side, which is normally considered the downside of technology in accounting. In conclusion, this conversation set the stage to explore and find out where, when, and for whom this upskilling or deskilling applies and what influences the outcomes (Nomlala & Mvunabandi, 2023). The use of the Janus metaphor

is a representation of the two parts of technology—the power to improve the skills of the accountant and also undermine their performance.

Review of Related Literature

The deskilling perspective: technology and the degradation of work

The deskilling concept can be traced to Harry Braverman's theory of labor and monopoly capital: *The Degradation of Work in the Twentieth Century*. Building on Karl Marx's theory, this framework posits that the primary objective of capitalism is to control labour, increase productivity, and maximise profit (Tomich, 1976; Braverman, 1974). Achieving this control is a separation of inception from execution. Under production, a skilled employee holds both the conception and execution. They control their own work because they understand what they are doing and often make judgment calls. Scientific management argues that skills are broken down into small, executable parts, leaving conceptual planning to management while employees simply execute tasks without a deeper understanding (Spencer, 2000; Braverman, 1974).

Technology plays a non-neutral role in this framework because it is a tool that brings this deskilling strategy. The primary purpose of technology is to take the knowledge and skill of the skilled worker, rendering the worker obsolete, which makes them replaceable (Morandini et al., 2023; Sithole, 2023). Morandini et al., 2023

The deskilling concept usually involves initially fragmenting a whole job into smaller, separate parts. This process is followed by introducing standardised processes for executing each task, which then is followed by the decrease of skill necessary for each task to the barest minimum. Then finally, knowledge and decision-making are centralised, workers being only operators who follow procedures. This approach leads to reduced labour costs, reduced dependence on any one worker, and control over output and speed is ensured (Littler, 1982; Heisig, 2009), decreasing cognitive demands placed on the individual, which will in turn reduce expertise in comprehensive financial management (Rinta-Kahila et al., 2018).

Application of the deskilling thesis to the accounting profession

Applying Braverman's (1974) theory to accounting shows that digital transformation in accounting shows a potential deskilling dynamic, including

Disintegration and simplification: In accounting, the core knowledge of how to address a specific account is not developed, as software does

that. That software has replaced tacit knowledge that was to be developed by labour (Singh, 2025; Greenman et al., 2024; Ide, 2025).

Separation of Conception from Execution: At the start of the modern accounting process, the rules and the logic seem to be embedded in the accounting software being deployed by the organisation. Accountants just become executors or overseers who are not actually in command of the transaction processing (Ashraf, 2025; Langmann & Turi, 2022; Arief, 2024).

Loss of implicit knowledge and judgment: Using technology to process transactions or prepare reports and detect anomalies prevents junior accountants and the organisation from learning to manually determine the errors or anomalies (Chukwuani, 2025; Lehner et al., 2022). The Black Box experience: With decision-making automated, the decision-making process does not become clear, and explanations by the professional accountant become problematic with their roles being reduced to a validator of outputs from technology, which erodes professional authority and diminishes intellectual faculty (Lehner et al., 2022; Chukwuani, 2025; Ashir & Mekonen, 2024).

The upskilling perspective: Technology as a boost for the accountant.

This perspective presents the view that technology supports human abilities in the organisation and does not necessarily replace humans (Beichter & Kaiser, 2023).

This viewpoint reflects the transition from industrial to post-industrial knowledge economies, where intellectual capital and specialised knowledge—rather than labour—drive value creation (Diessner et al., 2025). Technology is no longer considered a tool for exerting control but one for empowering employees. It brings automation and liberates the human intellect to dwell on that which is nonroutine, such as decision-making, creativity, critical thinking, and emotional intelligence (Tian et al., 2025; Twumasi et al., 2025).

This theoretical understanding is in sharp contrast to Braverman's deskilling theory. This theoretical perspective recognises that there is a relationship between humans and technology that has a combined output higher than the sum of individual parts. Digital technologies and automated tools such as artificial intelligence, robotic process automation, and data analytics are enablers and augmenters. Their benefits include the following:

They serve as cognitive augmenters: These technologies do not replace the accountant or their judgment but rather inform it (Odonkor et al., 2024; Elnakeeb & Elawadly, 2025).

Liberation of efficiency: Technological advancement can lead to automation of several tasks. Owever, this process does not lead to deskilling the accountant but frees up a treasure of time so that the accountant can focus on important activities that add value to the organisation (Kumari, 2025; Eziefule et al., 2024).

Enhancement of scope and improved precision: Cloud accounting systems and integrated systems can provide organisations with real-time data access, which will allow accountants to move from backward-looking reporting to predictive insights (Ayinla et al., 2024; Gyau et al., 2023).

Evolution of the accountant to a strategic partner

Technology has augmented the work of the accountant, leading to an evolution in their role. The accountant has consistently moved from a recorder of historical transactions to an architect of the future. The table below shows how technology has changed the role of the accountant.

Table 1: Evolution of the Accountant

Dimension	Traditional Role (Bean Counter)	Modern and Future Role (Strategic Partner)
Focus	Historical and compliance reporting	Forward-looking insight & strategy
Key Task	Recording transactions, preparing financial statements, compliance	Analysing data, managing risk, shaping strategy, optimising performance
Primary Skill	Proficiency in technical accounting aspects	Technology fluency, data analytics, strategic thinking
Output	Standardised reports for external parties	Tailored insights and recommendations for internal decision-making
Position in Value Chain	Back-office function, viewed as a cost centre	Strategic centre, integral to value creation

Source: *Arthurs's creation*

Table 1 shows that technology is changing the accountant's role and position in the organisation. Accountants now no longer deal with only transaction or compliance tasks but also are participants in decision-making and the strategic process (Moll & Yigitbasioglu, 2019). This change is part of an improvement in performance geared toward creating value through the use of data aligned with the resource-based view, which

emphasizes strategic use of organisational resources (Sangseter et al., 2020). The evolution of accountants' skills towards technological fluency facilitates long-term thinking, which is consistent with human capital theory. A change in the reporting process has also been observed; there is more focus on more internal reports to facilitate decision-making. Accountants are increasingly adopting advisory roles, transforming them into decision-making partners and aligning their work with process theory (Han et al., 2025). All these emphasise the dual role played by technology: automating routine tasks and improving skills, making the accountant a leader of business transformation.

Literature in support of upskilling

The development of technology makes some organizations question the future of professional accounting to the extent that organizations are modifying their competency framework to include digital and data interpretation skills (Kearns, 2014; Siddiqui & Poirier, 2025; Kokina et al., 2021). Technological tools free the accountant to focus on nonstandard tasks because they automate all routine tasks. The accountant now needs to move up and take responsibility in data interpretation and advisory services (Pargmann et al., 2023; Arkhipova et al., 2024). Digital tools have expanded accountants' horizons, transforming them into partners in innovation whose roles demand critical thinking and problem-solving beyond basic technological skills (Kroon et al., 2021). Accountants must be digitally alert to move through the digital paradox and match compliance with insight in digital tools. Technologies should support the accountant, not replace the human ability, and accountants should develop critical reasoning and risk management that are important for the profession. (Arief 2024; Herbert et al. 2021).

Beyond the binary—polarisation and the emergence of hybrid expertise

The upskilling and deskilling perspectives present a distorted view of technology's impact on the accounting profession, as technology does much more than is being discussed (Lee et al., 2025; Lehner et al., 2022). A careful analysis paints a picture not of a uniform outcome but of a polarisation of the profession and invariably the emergence of a new form of hybrid expertise (Tapis et al., 2020). The binary analysis fails to account for various segments of the accounting work. The accounting profession involves the public sector, corporate finance, internal audit, taxation, and also advisory services, each with its own value propositions (Sutton et al.,

2018). In reality, technology is a differentiator that pulls the accounting profession apart. The important issue is not whether the profession is upskilling or deskilling, but under what circumstances and for whom this occurs (Lee et al., 2025).

The most expected effect is that the middle roles in the profession will shrink and bottom and top roles will expand just like an hourglass. The top represents the upskilling part with variation in roles to a business partner, forensic experts, and a focus on complex transactions, ethical judgment, and communication with senior managers (Kenney, 2023; Kurtanovic & Kadusic, 2024).

The lower bottom represents the deskilling perspective of those who work on transactional and routine data processing or manage automated systems and do predefined tasks that are not efficient to automate. Technology is used as an auxiliary component of the automated system (Arkhipova et al., 2024; Argento et al., 2025). Then come the staff who perform routine and somehow complex tasks, who are most at risk. There is a rapid automation of their competencies, forcing them to either reskill or become obsolete and descend into a lower tier (Arkhipova et al., 2024). The hybrid accountant or expertise development reflects technology in accounting, which is an expert between the skilled advisor and the automated staff. The hybrid expert falls between the upskilling perspective and the deskilling perspective (Tapis et al., 2020; Argento et al., 2025). The hybrid expert is the accountant who has knowledge in traditional accounting and also digital technologies. Beyond knowing how to use the tools, they fully understand their underlying mechanisms. The hybrid expert has translator competency, having the ability to bridge the communication gap between IT professionals and leaders of business. They also manage automated processes and design accounting information systems for the future accounting profession (Tapis et al., 2020; Arkhipova et al., 2024).

Methodology

This is a non-numerical study that is based on a structured conceptual analysis methodology. The methodology is an approach that is concerned with clarifying the meaning of complex or contested ideas. This study rather examines philosophical concepts (Parse, 2022; Salawu et al., 2023; Petrina, 2016). A conceptual approach is useful when developing theory in areas of research where we do not have a consistent one. The study aligns with Gilson and Goldberg's approach by synthesising diverse perspectives into a unified theory rather than testing a hypothesis. The goal is to move academic debate forward by reframing the old “upskilling vs.

deskilling” problem into a framework built on the Janus metaphor, hourglass polarization, and hybrid expertise (Gibson & Goldberg, 2015; Kroon & Paauwe, 2022). This review is about peer-reviewed articles, predominantly between 2019 and 2026, on technology in accounting. It highlights two arguments: upskilling (accountant as a strategic and advisory role) and deskilling (decreasing professional autonomy). This review will use Braverman’s (1974) theory of deskilling and Becker’s (1964) theory of human capital in the digital environment.

Discussion of Findings

This study finds both deskilling and upskilling perspectives to be valid; technology reduces routine work and elevates accountants into forward-looking business strategists (Herbert et al., 2021; Martinaitis et al., 2021). This finding also confirms the human capital theory by Becker (1964), who proposes that applying technology moves accountants to higher-value tasks. However, Lehner et al. (2022) found that technology can erode professional structure, therefore supporting Braverman (1974). Furthermore, Argento et al. (2025) opine that technology can lead to increased oversight, which reduces the accountant’s discretion and can lead to them becoming executors of transactions instead of strategic advisors.

The deskilling perspective is also supported and grounded in Braverman’s (1974) theory of labor degradation. The findings show that in certain areas of accounting, technology is creating a divide between conceptual planning and execution. Literature agrees with the above finding that automation takes away traditional accounting roles while analysis is maintained by a small group of people, which confirms the polarization role (Martinaitis et al., 2021; Morandini et al., 2025). However, technology can put together the conception of an idea and its execution, which allows the accountant to focus on strategic issues, and technology does not replace professionals but improves their skills (Argento et al., 2025; Arkhipova et al., 2024).

The simplification of tasks, together with the black box experience, is a real risk of technology adoption. This risk affects junior accountants who are deprived of the opportunity to manually perform tasks and develop logic as well as implicit knowledge. This also supports Braverman’s (1974) labor theory. Literature supports this, as studies have found that because of digitalisation, accountants may lose manual skill development and the development of tacit knowledge (Taib et al., 2022; Jackson et al., 2024). This discussion does not necessarily identify the correct perspective but rather argues that both perspectives may be right. While technological

advances lead to deskilling some accountants, other accountants also upskill. One can see that there is a need to move beyond the dualistic way to a polarised hourglass profession, which has a shrinking middle and expanded top and bottom. When this theory is combined with polarisation, it creates an hourglass conceptual model: technology can empower accountants and also displace them at the same time, turning the profession into a polarised shape with a shrinking middle (Herbet et al., 2021). According to a growing number of studies, technology is reshaping the accounting profession in a very specific way. Routine, mid-level tasks are increasingly automated, which means the demand for traditional “middle” accounting roles is shrinking. Simultaneously, both bottom and top roles are growing—like an hourglass. On one end, you have more room for working with data; on the other, accountants are moving into advisory roles that need decision-making skills (Morandin et al., 2023; Lee et al., 2025; Martinaitis et al., 2021). This trend highlights the need to update accounting training programmes with technology and critical thinking courses to ensure accountants are proficient with modern tools (Pan & Mazzei, 2023; Sebele-Mpofu, 2024). Continuous learning should also be a key part of accounting practice to provide professionals with technology knowledge (Tufuor Kwarteng & Servoh, 2022; Ciuhureanu, 2022).

Conclusions and Recommendation

This study investigates the effect of technology on the accounting profession, using the metaphor of Janus, a multifaceted god. The study found that accounting is a complex and evolving concept that cannot be broken down into two extremes because there is an emergence of hybrid experts. Based on Braverman's theory, it means that the accounting profession is falling apart because modern software separates an idea of a task from its execution, making it harder to use knowledge, judgment, and independence for everyday activities. Another view sees technology as a cognitive tool, automating certain tasks so that accountants can focus on higher-value priorities. Accountants will therefore become strategic partners who are adept at interpreting data and giving advice. This analysis has generated a hybrid profession that looks like an hourglass, with the top representing a workforce that is digitally competent, the bottom is the automated workforce, and the shrinking middle is the reskilling professional at risk of obsolescence. This polarisation leads to the emergence of the hybrid expert, who is a professional who combines the two faces of the profession, combining technical accounting knowledge with advanced IT skills. This study advances prior research by

going beyond just the dual role of upskilling and deskilling by offering another view that simultaneously captures both deskilling and upskilling. The study then introduces the hourglass and the hybrid expertise, extending Braverman's theory into a single account of how the accounting profession is reshaped by technology.

There is a need for a longitudinal study that can be conducted by tracking career projections of accountants to measure the extent of polarisation. There can also be a qualitative study to explore the skills that the hybrid accountant possesses in different organisational contexts in small and medium-scale enterprises. Future research could examine the ethical and governance challenges of technology in auditing and financial reporting.

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