Digitalization and Sustainability in Agriculture: The Evolving Role of the Accounting

Profession

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Abstract

The primary focus of the paper is on the effect that the increasing digitalization of the agricultural industry is having on the accounting profession and how this is affecting the profession. A disclosure has been made on the concept of the economy being digital, and the agricultural sector would come to follow in certain ways. The importance of an agricultural firm developing a single information space that encourages interaction between structural components is taken into consideration. This involves the development of a single information space. Accounting plays an essential part in the development of the database and the construction of an analytical platform, both of which are necessary steps in the process of digitalizing the agro-industrial complex. A description is given of the way in which the robotic system operates as a tool inside the digital economy. We are now able to gain an understanding of the four stages of accounting robotization, which are as follows: organizational and informational, robotic data processing, reporting and analytics, and account management. All of the attributes of each stage are listed. The dissemination of an information flow plan is a component of a robotic accounting system. Recent developments in the field of accounting robots have resulted in the compilation of a list of needs that will be necessary for the continued development of these machines. There is an emphasis placed on the role that account managers play in the digitalization of agriculture, and the position of an accountant in the digital economy is described as being in a state of evolution.

Keywords: Accounting Profession, Agriculture, Digitalization, Robotic System, Single Information

Introduction

The trend of digitizing agriculture in Nigeria is revolutionary. In a country like Nigeria, where farming is primarily done at the subsistence or smallholder level, with enormous inefficiencies characterizing the practice, which leads to a fragmented and frequently underdeveloped agricultural economy, it is easy to understand why digital solutions are something that is needed in the agricultural sector. Some seasoned and more recent participants in the sector are looking for solutions that can best be described as digital in order to bring about a greater level of efficiency and openness (Okafor, 2022).

The World Bank's Enabling the Business for Agriculture (EBA), ICT Index Score gave Nigeria a score of 4.5 out of 9, which indicates a slight improvement in the country's efforts to build a more favourable digital environment through laws, regulations, and policies (Wole-Alo, 2020). According to the GSMA Mobile Connectivity Index (MCI), the nation also does well on measures including inexpensive handset costs, a decline in mobile-specific taxes, and the establishment of gender equality in the workplace and market. When we consider that one of the most potent ways to increase economic activity is through increased use of digital technologies, these are encouraging indicators that must continue and get even better (Wole-Alo, 2020). Digital technologies are demonstrated to be a potent method of service delivery, producing disruptive advances in numerous industries, and aiding in the growth of wealth and employment.

According to Olutumise, et al. (2021), in 2011, digitization increased global economic output by \$193 billion and produced 6 million new employments. Digitization contributed to an increase in output of \$16.5 billion and the creation of about 380,000 new employments in the Middle East and North Africa alone in the same year. However, the effects of digitization vary depending on the level of development of an economy. In industrialized economies as opposed to those in emerging ones, it has a bigger effect on economic growth.

The following are the key directions for digitalizing agriculture according to Olutumise, et al. (2021):

- Changing consumer habits and tastes
- Possibilities for expansion in other markets
- Sector-oriented competition, increased competitive pressure,
- New standards for regulatory and compliance needs, and new developing

technologies

- Digitalization of production, including the use of robots and artificial intelligence
- Digitalization of sales of agricultural goods
- Organization of analytical platforms across all agro-industrial complex verticals

Literature Review

The analytical platform requires a comprehensive enterprise information base with the accounting system as its primary source, including financial, tax, and management accounting. Current accounting advancement reduces accountant labor expenses and optimizes data processing and transmission. Agriculture requires safe transmission systems due to its massive data flow. An agricultural firm organized as a unified information space encourages crop production, animal husbandry, mechanization, the administrative sector, and the digitization of production, accounting, administration, and decision-making to interact (Stolbov, 2018). Information is accumulated and savings are digitized via accounting. Young, skilled people prefer high-paying jobs in cutting-edge, fast-growing companies. This makes modern accounting information technology in agriculture difficult to adopt and impossible to use. In changing market conditions, timely managerial decision-making information is crucial. Thus, the accounting information system should generate management reports in addition to accounting and tax reports and declarations (Okafor, 2022). Accounting automation relies on computerization, which allows humans to outsource some accounting chores to machines and replaces manual and mechanized work with specialized software. Due of their complexity and volume, settlement accounting and technical tasks account for up to 75% of total effort. Accounting involves collecting data on an organization's assets and liabilities, reflecting actions with them, and generalizing it for reporting. Accountants' current work, which is related to modern tools and technology, will be considerably different in the future (Jellason, et al., 2020).

At present, accounting's progress should be categorized by its technical and technological components (Traldi, 2021): In accounting, there are five stages: manual, mechanical, automated, robotic, and artificial intelligence-assisted.

In accounting, manual accounting is frequent. Discussing automation should include the shift from manual labor to mechanical tools. Automation converts manual or automated job

functions to automatic execution. Robotization replaces human labor. Artificial intelligence will help create a system that can make autonomous decisions while considering changing initial conditions. Ancient accountants recorded transactions on clay and stone tablets, colorful stones, and other materials. Hieroglyphic, cuneiform, and other ways were utilized to record. "On Trade and the Modern Merchant" by Benedetto Cotrulla (1458) and "On Accounts and Records" by Luca Pacioli (1494), which described a double-entry accounting system, sparked accounting (Bakulina, et al., 2020). At the end of the 19th century, perforators, tabulators, and arithmometers mechanized accounting. Using computing tools for summation, multiplication, division, and credential grouping increased worker productivity. Accounting mechanization enhanced accounting parameters' accuracy and dependability, accounting staff efficiency, and accounting record forms. Based on computer technology, partial or full automation was done. The latter advanced accounting automation. The switch from manual, mechanized work to specialized software allowed some accounting operations to be automated, leading to accounting computerization. Accounting automation affects accountants since they no longer need to do routine mathematical operations, fill out paperwork, or keep journals. They archive primary documents in an automated accounting system and perform analytical and control functions. Giving monotonous chores to the machine makes accountant's work more fun. More accountants are leaving the workforce, changing the demand for skilled workers. Programmers who configure universal applications to match the organization's needs, operators who input basic data, and universal accountants who handle control and operations are in demand (Bakulina, et al., 2020). The chief accountant's position is still needed in automated accounting environments since accounting information systems need monitoring and sometimes correction. The move to automated accounting systems requires a computer and software adapted to the business and accounting service structure. Integrating modern data processing and transmission technologies into accounting is bringing robotics accounting into a new era. Double entry, general ledger, and other Luca Pacioli accounting principles remain in existence (Izuogu, et al., 2023). Accounting conservatism enables accounting automation using intelligent robotics. Digital economy tools include robotic accounting systems. Modern bot applications, such as a bot accountant that calculates insurance premiums, taxes, etc., and a bot consultant that provides information support, as well as technologies that bring robotization closer to accounting, such as electronic signature, electronic document management, blockchains, etc.,

are the most important ways to approximate accounting robots. Robotization requires a qualitatively new accounting system. Primary stages of robotic accounting include organizational and informational.

Robotic data processing, analytical reporting, and account management. A robotic accounting system receives external and internal data to build primary documents during organizational and informational stages. External sources must confirm, partially confirm, or deny external information in the organization's financial data. Firms will submit supplier material information using telecommunications papers. When supplies, seeds, or feed are confirmed, the organization's accounting system will immediately record the information (Bakulina, et al., 2020). If the quantity or quality of the goods, seeds, or feed does not match the documents received, a document on delivery non-compliance will be written and handed to the counterparty, etc. Unit heads or other responsible persons will directly input organization-generated information at its source. Foremen in crop production and farm managers in animal husbandry use materials in production, while storekeepers provide plant growing and animal husbandry divisions from the warehouse. When business processes are complete, the robotic information system will reflect primary data entry, creating primary documents (Olutumise, Adene, Ajibefun, & Amos, 2021). The second level involves robotic data processing from the source without human intervention. The robotic data processing stage requires minimum human intervention in information robotic system functioning. A robotic system's accounting and agricultural production algorithms are regulated by industry norms and laws. Integrated and process robotics installation will occur. Robotic process automation can digitalize agricultural procedures, eliminating human exposure. An accounting system that inputs, processes, and reports primary data links crop agriculture, animal husbandry, automation, and administrative and management information flows (Izuogu, et al., 2023).

Third, output data is gathered into reporting and analytical forms. Data processing generates accounting registers, agricultural and livestock production records, financial reports, and management reports for internal and external use. In the fourth step, the account manager makes management decisions using accounting data. Data collection, processing, and analysis on the organization's operations are controlled during account management. This includes comparing them to baseline and intended parameters, other companies' operations,

and their management to quickly identify concerns, open reserves, and maximize potential (Okon, et al., 2021). This is the most interesting and significant stage for agricultural enterprises since it redefines accounting.

Accounting robotization frees up time for developing, evaluating, and making management decisions while the information system generates internal reports with relevant information and interactive situation analysis results. The groundwork for accounting robotization has been laid. These are just the beginning; more research and execution are needed. Even with accounting automation, accountant-bookkeepers are being replaced by accountant operators who input raw data into the computer system (Mustapha, et al., 2020). Due to this, the accounting profession's future is viewed differently. The first major shakeup of accounting came when computer and automated accounting systems took over mathematical and technical tasks. Accounting will continue, but change is accelerating. Possible future: accountants and There will be no demand for accountant-operators. However, the role of an accountant-analyst, who is a specialist who is able to apply professional judgment, will become more prominent in the future. In order to evaluate whether or not it is necessary or even possible to account for future events in the modern information society, the purpose of this study is to investigate this question. Furthermore, this indicates beyond a reasonable doubt that accounting is continuously progressing in tandem with the accounting profession. agricultural accountants are required to meet certain requirements due to the characteristics of agriculture. These include the following: understanding the complexities of agricultural production and the fundamental organizing principles; developing a pay system that is based on the quantity and quality of work performed; figuring out the cost structure and techniques for estimating the cost of production, etc.

The knowledge, skills, and capabilities of an accountant in the areas of information preparation and the formulation of management decisions that are beneficial to the growth of a corporation are highlighted here. The capacity to develop not only regular but also unique, non-standard management judgments is the result of having knowledge of arranging and keeping accounting. Other abilities that are required include the ability to detect limiting limitations, the ability to correlate different pricing with alternatives, and the ability to generate management judgments. To put it another way, the function of an accountant in the digital economy has shifted to that of an account manager (also known as an accountant,

management). To put it another way, an account manager is a manager who makes use of his experience in accounting to get things done and who makes use of data to present a picture of production. A competent account manager is a member of the management team who is responsible for overseeing the activities of structural units while taking into consideration the interests of those individual units.

Conclusion

In conclusion, it is important to point out that the digitalization of the economy, and agriculture in particular, is based on the incorporation of technical and technological components. These components include the processing of global data through digitization and storage, which is at the core of the digitalization of the economy. More specifically, the digital economy is correlated with the improvement in agricultural output. The rate at which the digital economy is incorporated into agriculture is influenced by a number of factors, including the degree of economic development, the level of education, the readiness of the regulatory framework, and the extent to which applied technologies are currently available. A significant level of specialist expertise is required in order to use modern information accounting systems, which are the aspect of agriculture that has become the most digitalized in recent times. As a result of the poor attractiveness of the industry, which impedes the digitalization of both accounting and agricultural, the examination of the current situation of the labor market and employment in agriculture reveals that there are not enough qualifications found among accountants. As a result of the emerging transition to accounting robotics, which determines promising areas of development that contribute to its modern development, there has been a shift in emphasis away from the traditional understanding of accounting and toward account management. This shift has resulted in the transformation of the accounting profession into that of an account manager. The role of the accountant has been broadened to include the responsibility of making managerial decisions that will result in an increase in the agricultural operation's overall production as a result of modern accounting techniques. As a consequence of this, accounting and the profession of an accountant are undergoing transformations in order to accommodate the requirements of the digital society. This is being done to ensure that they will continue to be vital in the era of the wider digital economy.

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