**Review Article**

The Migration of Accounting Systems to the Digital Platform: History, Benefits, and Challenges

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***Abstract:***

***The theory of accounting is invented in the ancient Egyptian period, but the real phenomena are regularly, even in rapidly, changing its form of use without remaining the change of the origin of the accounting theory. As we know that the use of accounting, we found every phases of our life. Owing to the usages of advanced information technologies, accounting become Electronic accounting for maintaining the account of overseeing development of mammoth industries, organizations and much other profit and non-profit organizations, accounting becomes more complex to execute the operation of accounting activities. Between migrations of the manual accounting to the digital platform of the accounting there originated different terms: Accounting Information Systems (A/SJ, Computerized Accounting then E-accounting. E­ accounting or Digital accounting is a blending concept of accounting, Information, Computer-based accounting, Information Technologies, accounting software, and electronic media platform etc. The use of the computer in accounting is not contained long history as the accounting theory do.The advanced uses of Information technology in accounting, ascertain the more accurate information to the user of the accounting for a possible short time. The present study attempted to highlight the transformation of the use of accounting platform from the ancient period to the electronic world by showing its versatile importance with the challenges for the real world.***

***Keywords: Accounting, Accounting Information Systems, E-accounting, Information Technology.***

## Introduction:

Accounting is the art of recording, classifying and summarizing in a significant manner and in terms of money transactions and events which are in part at least of a financial character and interpreting the results thereof. "(AICPA, 1966). According to the American Accounting Association [AAA]-1941, "Accounting refers to the process of identifying, measuring and communicating economic information to permit informed judgments and decisions by users of the information"(AAA, 1841). Information is always instructive about something, being a component of the output or result of the process (Losee & Robert, 1997). Information is stimuli that has meaning in some context for its receiver. When information is entered into and stored in a computer, it is generally referred to as data. After processing (such as formatting and printing), output data can again be perceived as information. Information (as a representation of knowledge) is stored knowledge. Traditionally the storage medium has been books, but increasingly electronic media are becoming important (Madden, 2000). The technology involving the development, maintenance, and use of computer systems, software, and networks for the processing and distribution of data (Definition of INFORMATION TECHNOLOGY, 2018). The

information systems that society has become so

dependent on are typically distributed network systems that consist of components of varying quality that have been integrated to provide services for the end-user (Westmark & Vickie R, 2004). AIS could be designated as systems applied to record the economic transactions of a firm. These systems combine the methodologies, controls and accounting techniques with the

technology of the information technology (IT) industry to track transactions provide internal reporting data, external reporting data, financial statements, and trend analysis capabilities to influence on organizational performance (Urqufa Grande, 2011) (Hanifi, 2015). Accounting is an information system, the way and processes of transacting businesses of enterprises have changed with the usage of information technologies in enterprises and this influenced accounting closely (Guney, 2014). E-accounting can be defined as the type of accounting process that starts from pure information which applies accounting in the electronic environment with all its theory and principles without changing the rules of accounting and which shows difference only in terms of its application (DASTAN, 2007). It is the application of data processes and operation via the internet that entails other aspects such as registration, storage, business activity, production management, procurement and distribution, goods transfer, as well as after-sales service (Khorramin, 2015).

# Objective of the study:

The aim of the article is to show the evolution of the gradual migration of accounting to the digital platformand another objective is to show the advantages of the migration of accounting to the digital platform for the organization with its challenges.

# Methodology of the study:

This paper is based on secondary data. Available literature including relevant books, articles, and website on electronic accounting were studied. Some portions of this paper are the authors' own observations and logical arguments. The study is involved in the transformation of accounting and computerized accounting to the e-accounting: Generic history and its versatile importance and challenges to the real world. Consequently, the research was intended to achieve the objectives set out by the researcher. All the required information and references are attached in the reference section of the article.

# Literature review:

Today, advanced electronic technology has extensively brought about constant change and

development in various departments of accounting, identification, measurement, record, as well as financial reporting from the industrial and economic point of views (Khorramin, 2015). With the help of Information technology, different activities of business operations, such as preparing financial statements, tax statements, consultancy and auditing which are carried out by accountants (DASTAN, 2007). IT network systems have reduced the time needed by accountants to prepare and present financial information tomanagement (Maziyar Ghasemi, 2011). E-accounting is the perception of enabling management of all activities more efficiently, affordable, flexible than before through facilities of the internet. Therefore, the excellence of accounting education is a factor influencing the achievement of employees of enterprises (Guney, 2014). Pedagogy as a science of education, which can be applied to the practical use of technology of accounting, has a ultimate influence on the applied learning method of exact metrics to financial accounting (Valenciac, 2015). The researchers were motivated to examine the influence of a Computerized Accounting Software Curriculum that enhances an Accounting Programme. Here also tried to express the perceptions towards the implementation of Computerized Accounting curriculum and the benefits that accrue from the implementation of Computerized Accounting curriculum (Machera, 2017). The application of Pedagogy enables the collaboration between technology, pedagogy, and accounting communication, which interacts in the eloquent awareness of people to approach the tool as a function of learning and simulation of the actual procedure they want to teach (Valenciac, 2015). The general view of the IT that stimulus an effective use of the accounting structure, which may form a preliminary fact for an effective decision-making process. Here the study shows the role of information technology (IT) in conformity between the accounting system and business atmosphere (Lina Klovienea 2015). In the field of financial accounting the usages of data through electronic media, a change has been made in recording, transferring, and storing information so that using digital technologies

such as the internet, mobile phones and many

other platforms (Khorramin, 2015). In Mexico, the

concept of electronic accounting has been extended by adding the compulsion to direct the tax authorities the information (Venegas, 2017) and, in Ghana, SMEs put in place accounting software to create their economic information (Ware, 2015) resulting from its application. E­ commerce accounting is, evenmore, an emerging field of accounting development in our country and even in the world. Many problems related to e-commerce and accounting are still in the process of exploration, improvement, and revision (Li, 2017).

## Conceptual Framework:

* 1. **Evolution of the migration of accounting to the digital platform:**

In the 1980s, it was believed that the computer is not required for the accounting systems. Up to 1874, accounting was done largely in the same manner as the early Egyptians had started doing it before. Italy is considered the birthplace of the double entry system of the accounting. It was treated as the "Venetian Method" at the time of gaining popularity of the book "Summa de Arithmetica, Geometria, Proportioni et Proportionalita." It included a section on "Venetian Method" which discussed using three books for recording transactions: a ledger, a journal and a memorandum book by FraLuca Pacioli, as a result, he is widely considered as the father of accounting (Ryan, n.d.).

Day-by-day business becomes more complex hence the transaction also become more complex.The industrial revolution urged the need for further advanced cost accounting systems. The rapid evolution of corporations created large groups who were not part of a firm's management but had a vested interest in the company's resultsnamely, shareowners and bondholders who provided external financing (Wohlner, n.d.).

In American census of 1890, Herman HOLLERITH took first endeavor to process data by using electronic devices. The distinctive characteristic of HOLLERITH's mechanism is that it is a tabulating engine based on C. BABBAGE's punched-card system, which reads the data on these cards. This machine saved 2/3 of the time in business transactions andwas used for many years (DASTAN, 2007).

Little changed in this pen and paper methodology for 800 years that is, until computers finally become relatively 'cheap', and could be bought for R 80000. This was before the days of Microsoft or even personal computers. Still, it was so easier to see data on-screen than it was to fumble about with data cards.Indeed, the era of computer accounting launched with the appearance of the first computers, in specific, with the IBM 702 which became existing for accounting practice in 1953 (Anandarajan A, 2004).

The first applications of computer systems in enterprises were in the accounting information system and therefore economic and accounting transactions. It is claimed that in the historical process, although the computers were used in solving some accounting problems in the 1950s, the active use of computers as a business management tool was in the 1960s,Charles W. Bachman designed the Integrated Database System, the "first" DBMS, (Foot, http://www.d atave rs ity.net/brief-history­ database-ma nagement/) and therefore thesetting up of the accounting information system, the most important sub-system of management information system, and the use of computers in its implementation were also in the same years (DASTAN, 2007) (GOKTAN, 1983) (T,

2003 May). By the mid-1960s, as computers developed speed and flexibility, and started becoming popular, many kinds of general use database systems became available. The group, Bachman formed the Database Task Group, designed and standardized a language called Common Business Oriented Language (COBOL). This task group presented this standard in 1971 by the name of "CODASYL" (Foot, http://www.d atave rs ity.net/brief-history­ database-management/). Then, in the mid-1980s, IBM launched the PC. The consequent rapid evolution from paper-based trial balances to spreadsheets on Lotus 123 was revolutionary as the original double entry system. Still, the balancing of books was done manually, but soon the first accounting packages appeared on the market. Turbo Cash launched in 1987 with an automated system for trial balance, balance sheet and income statement. A 15-day process of consolidating ledger was reduced to minutes

where many functions this programme couldn't do, such as calculating tax or invoicing clients (Ryan, n.d.).

Early DOS-based accounting systems were highly stable and hardly updated, but with the advent of Microsoft and its regular updates, continuous adaptation of systems become the norm. In 1990 Turbo Cash began being distributed by Pastelas a local accounting software. Pastel has upgraded continuously and added in functions for customer invoicing, supplier management and inventory. At first the shift from DOS to Windows and it has since become an important migration in the selection of accounting software. After that query language product is developed for using a database.

At that time the current evolution of accounting technology was two fold.These are building in of Business Intelligence (Bl) which is the more intuitive or predictive use of technology, and the mobility of cloud computing. Accounting software has evolved beyond a mere accounting package to a full business management tool. The challenge in the late 90s was that each of the different business systems was not capable of talking to each other, whether sales [CRM], inventory or the front desk [POS]. As a result,there started adding on non-accounting functionality similar to CRM (Customer Relationship Management), ERP [enterprise resource planning], POS (Point of Sale) and making it multi­ user accounting software started infiltrating ordinary business software. As regulations become more complex, other non-accounting disciplines felt the need to evolve from a simple spreadsheet, and bolt-on modules were developed for tax, payroll, and company secretarial purposes. All had to be combined with the core back office functions. Even so, accounting packages were still primarily utilized for after-the-event capturing data. As a result, Bl has become ubiquitous to the degree that even the smallest systems required it. Nowadays business clients are demanding more Bl then SME level and accounting software products are moving from being a means of recording financial information to adding value to business form Bl. These include Data Mining, Dashboards, business monitoring and alerts to features for upselling and giving staff real ways of enhancing sales. With Bl family entranced, the next wave of

chance become the internet and mobile devices, often called cloud computing or software as service (SaaS).Cloud computing has arrived for adaptation to the business environment. Accountant will have difficulty adapting to the cloud, not for technological reasons, but the security of data.

Microsoft SQL, allows business to secure greater functionality at a reduced cost. Traditional industries were highly critical with activities spiking monthly. For portable software, anyone can run these accounting systems on Windows, Linux, Novell, and Apple or any other future operating system because these are web-based. The big leaps in accounting software appear to coincide with the migrations of whole accounting systems. It is high time to see the final revolution to the accounting software as a service of electronic software.

Here in the table, the list of accounting software for business is shown below:(Best Accounting Software Systems For Your Business , 201S)(Z., n.d.)

|  |  |
| --- | --- |
| Accounting Software | Features |
| FreshBooks | Top rated invoice-to-payment functionalities, direct payment gateways, and overdue payment reminders; delay feesand payment  claims. |
| Sage 50 cloud | capabilities to help for keeping the tab and get a handle on taxes, inventory, budgeting, cash flow, expenses, invoicing, and financial data, among others. |
| FreeAgent | Manage all of the financial operations including payrolls, expenses, estimates and invoices, bank transaction, cash flows, taxes, time tracking, and financial performance. |
| Zoho Books | Easy to automates bank feeds, sends payment reminders automatically, and makes it easy to send and track retainer invoices |
| Xero | To manage real-time financial data anywhere, anytime, and on any device for small business owners. |
| Sage lntacct | It is a cloud-based accounting system. |

|  |  |
| --- | --- |
| Quickbooks | Offers a unique feature for automated tax-deductible expenses for retailers to access all items from a single solution, enabling them to track services, locate tasks, accommodate customer requests to change quantities, and create BOMs (bills of materials). |
| Brightpearl | For budgeting, Brightpearl is considered a leading accounting system designed for retail purposes. |
| NetSuite ERP | A customer relationship management (CRM) solution, the platform can be used for sales force and marketing automation, as well as order management and customer support. It makes financial management simple. |
| Happay | To search for specific files like receipts, bills, tickets and other support documents. |
| Financial Force  Accounting | A comprehensive financial management solution offers a fresh approach to how businesses should do their accounting work. |
| Tipalti | Helps simplify global mass automated payments. |
| Microkeeper | Cloud-based integrated timesheet  management and payroll software for any industry. |
| Nummuspay | Ideal solution to lighten the load in handling billing, subscription, and payment management duties. |
| Multiview (Z.,n.d.) | Conformsthe existing operations, Multiview offers a suite of financial solutions and companies gain visibility over corporate data. |
| Deskera ERP (Z.,n.d.) | Cloud-based business management suite that automates sales, billing, fulfillment, distribution (including pick, pack and ship process), sales commission calculations, purchasing, payment processing, product receipts, inventory, warehouse management, asset management, core accounting, bank reconciliation, financial reporting, sales tax compliance and multi-currency support, including capability to print checks from the system. |
| Budget Maestro | Offers to solve the budgeting, forecasting, consolidation and reporting capabilities. |
| ScaleFactor | Suitable for SME and capable to solve complex accounting transac-tion and  translate financial information. |

|  |  |
| --- | --- |
| AccuFund  Accounting Suite | Useful for the nonprofit industry. |
| BudgetPak by Xlerant | Cloud-based Accounting solution forintegrated Financial Reporting. |
| Divvy | Helps to manage expenses of organization. |

The accounting system is one of them and could be promoted by a profounder application of accounting information. Hence, information technologies used and executed in the accounting system of the organization could help to adapt to changes in the business environment. In this aspect, it could be stated that information technology could help to improve the functions of the accounting system in an organization when it is not compatible with the business environment(Lina Klovienea, 2015).

## Benefits of the migration of accounting to the digital platform:

The main objective of an accounting is to provide information for decision making. Provided information need to be useful, fast and suitable for conforming to the business milieu. On the other hand, it could be specified that the accounting system is a useful system in the organization when it fits and conforms to the environment of the exact organization.The developments in information technologies have affected the businesses in terms of three important areas: electronic trade, enterprises resources planning, and data management, and that this has been reflected in accounting applications (DASTAN, 2007). According to these areas of the migration of accounting to the digital platform by combing different tools of businesses.

## Easy Application of accounting:

Mobility is a new example for the business world for cloud computing. Now accounting packages can raise endlessly and will never be outdated. Development takes fewer time and it is believed that non-accountant can use the software of accounting.

## Speedy use of accounting:

IT improvements help organization to ensure competitive advantages by two main aspects - (1)

investment and innovation in IT are saving costs in the service area, (2) also it helps to ensure high quality and speed of services, what is the most important aspects for such kind of organizations as banks (Lina Kloviena, 2015).

## Accounting Data transfer:

Technological progressions made it possible to transfer the data concurrently into thejournal, ledger and existing account and therefore to prepare financial statements and other reports as soon as they are entered into accounting receipts (DASTAN, 2007).

## Minimize complexity:

In parallel with the developments in accounting standards, uniform chart of accounts and computer software which in the beginning covered only such fewer complex processes as recording and preparing trial balance and balance sheet, now include such modules as financing, budgeting, production, and cost accounting. This made the profession of accounting and therefore the accounting information system turn into a decision support system (DSS) beyond simple book keeping is integrated with the development of technology (DASTAN, 2007).

## Continuous Financial Reporting:

The main objective of an accounting function in an organization is to process financial information about the actions of the organization and prepare financial statements at the end of the accounting period (Ware, 2015). But the migration of accounting platform helps the organization to prepare the continuous financial reporting. Accounting Information Systems (AIS) is one of the subsystems of Management Information Systems (MIS) as a result of blending both concepts help accounting application easier to use in a convenient way.

## Engagement of audit firm:

Audit firm also gets a great advantage for the migration of Information Technology. The auditing clerk can log into the client's system and review the books, financial statements, banking information, and tax documents - without even

visiting the client. This will certainly improve efficiency. When audit clerks do visit clients, they will bring with them total networked access to the client's financial and tax data on a mobile device such as a tablet or iPad. Cloud computing will have a massive impact on the larger audit firms, most of which are still in a mindset of running their offices as independent operations on a national bias. With better utilization of their resources effectively. All the data is available on the network irrespective of where you are based. That could on the horizon heralds a new era in accounting services.

## Reliability:

In terms of reliability, paper-based transactions seem more reliable at first sight (DASTAN, 2007). If the necessary technical conditions are met, electronic data will be more reliable than the paper-based transactions. Withdrawal of the money from the automated teller machines (ATMs) and mobile money transfer of individual scan be given as the example of the reliability of the accounting information systems.

## Up-to-date information:

The application of information technologies in the accounting system has two principal effects, firstly, it is a faster form record-keeping that results in up-to-date information, and finally, it facilitates the transfer of information to externals such as providers, clients, and regulating bodies. It is thought that cloud-based accounting systemsease online record-keeping of the information(Venegas, 2017). Such developments in production technology as automation, just-in­ time (JIT) production, zerostock, computer-aided design (CAD) and production have had a direct effect especially on cost accounting system, a sub-system of accounting information system, in terms of many aspects and mainly in terms of determining costs(DASTAN, 2007).

## Helps to Managerial accounting:

ERP (Enterprise Resource Planning) also helps accounting which has two business models, one that operates through a local service provider and one that functions in the cloud, where the investment cost is significantly less than via the

local service provider (Venegas, 2017). ERP systems increase the use of advanced managerial accounting techniques, such as Activity Based Costing (ABC) and Balanced Scorecard.

ERP system causes a change in managerial accounting practices, in terms of providing global information flow and standardization, and that conventional managerial accounting procedures are eliminated after the migration of accounting platform. According to this aspect could be stated that information technology has changed the roles of accountants in business from information collection, preparation, analysis to the part in the functions of control, interpretation, assessment, and decision-making (Lina Kloviena, 2015).

## Proper supervision:

Business transaction information through the network placed directly under the supervision of trading centers, certification centers, banks, tax authorities, etc., a large number of other companies directly collect data networks, instant communication, so that the accounting information system from closed to open, Directly in the social supervision and government supervision. Only to ensure the security of electronic transactions in order to carry out information, but also to carry out effective supervision of accounting, information security is a prerequisite to ensure that accounting and accounting superv1s1on of accounting information due to the realization of real-time and automated processing (Li, 2017).

After all it can be denoted that the migration of digital or electronic platform of accounting system can be helpful in the effective process of accounting through the following features (Khorramin, 2015): a) Multiple user access, b) Frugality because of service offering to a great number of customers, c) Sharing one or several database and d) Multiple-site access. An accounting system is disclosed as having three variables - process, measures and decision level in the different business environment. Information technology with its systems (enterprise resource planning (ERP), information and communication technologies (ICT), electronic commerce, and business intelligence system) could be the tool for needed expansions and developments in organizations (Lina Klovienea, 2015).

## Challenges:

Compared to the E-accounting systems, it can be said that in terms of being a proof the traditional accounting system is stronger because of such aspects as the signature, seal, and authorization by the notary public, etc. (DASTAN, 2007).

To meet up the main objective of accounting, provided information need to be useful, fast and suitable for the organization which is relevant and provided information need to conform to the business milieu. Conversely, it could be specified that the accounting system is a useful system in the organization when it conforms to the environment of the exact organization (Lina Kloviena, 2015).

Cloud accounting software is being offered as software as aservice (SaaS), instead of software as a product (SaaP). Cloud accounting software is opened through a subscription­ based method and the user does not download or maintain any of the software on their personal computer. The vendor hosts and preserves the software on their servers and the user is capable of accessing the software by connecting to the server through the internet. As a result, the vendors never relinquish control of the software.

Accounting education is understood as the process of teaching and learning of "the accountant" which is self-reflection of the activity of accounting in a society, economy, and business. Education can approach the creations of this knowledge and its influence on social analysis as key features in the technique of economic process for all types of people in advanced educational settings (Valenciac, 2015).

Currently, accounting education is a transmitter and disintegrated education with technological aspects. It can be proposed that pedagogical mediations to improve part of this situation with a better analysis of the teaching process and alternatives based on technology and systemic understanding of

lthe financial process, using visualization, graphing and its analysis (Valenciac, 2015).

The technological elaborations which are in a continuous renewal, change, and development. This makes it more and more difficult to track and recognize sufficiently the developments in information technologies (DASTAN, 2007). There has been an outcry in commerce and industry about students who fail to perform in the accounting department due to the lack of "applied accounting skills" (Machera, 2017).

1. **Recommendations:**

Thus, it is imperative for all the related governmental and private department to pay enough and essential attention to the changes in order to deliver better performance and effectiveness.

It shows the requirement for combining different disciplines as a support (computers, arithmetic, graphics, and audiovisual design, communications, economy, sociology, psychology, etc.) and new educational policies that enable an interaction of accounting education with ICT (Valenciac, 2015).

Applying Virtual Learning Objects (VLO) in accounting is very important for understanding the advanced application accounting.In that period, it has been considered abstract elements of understanding and reflective praxis such as the notion of cognitive communication between the dynamic image and perception of understanding of the accounting procedure.

Almost all belong to a professional accounting institute,and a high percentage have received both professional training and training in electronic accounting. These aspects contribute constructively; given that they constitute prior facilitating factors for the process of migrating to electronic accounting (Venegas, 2017).

It is supposed that higher education students experience problems through out their internship semester as they are expected to

use Computerized Accounting Software(Machera, 2017).So, for the tertiary level of accounting, it is very important to adopt the application of the digital form of the accounting.

The component of information technology should comprise the subsequent competencies: (a) general knowledge of information technology, (b) knowledge of the control of information technology; (c) competences of control information technology, (d) user competencies of information technology; and (e) one or a mixture of the corresponding competencies to managerial roles, evaluation and design of information systems (Valenciac, 2015).

1. **Conclusion:**

However, the current accounting system has been confronted by key changes in the milieu and by the swift expansion of an information technology (Lina Kloviena, 2015). It also created a change in the demands of society and an increase in the expectations of the affiliates of the accounting profession (DASTAN, 2007). At present most, the important matter is that infrastructural development of electronic media - internet, proficiency of human resources to computer­ based electronic media application in the application of accounting and enhancement and engagement or collaboration of information technology with accounting.

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