

# Upgrading Infrastructure and Communication Technologies for Organizational Success - A Comprehensive Review

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**Abstract** – The use of Information and communication technology (ICT) plays a pivotal role in facilitating the operation of the modern economy. One potential outcome of investing in and improving our country's ICT is an augmentation in productivity. However, the impact of this phenomenon may be influenced by the level of ICT advancement and productivity already established inside the nation, alongside the amount of investment or expenditure dedicated to ICT. Moreover, after a designated timeframe, the utilization of ICT may potentially influence the advancement of productivity. Hence, it is important to differentiate the temporal scope and magnitude of impact of ICT in countries characterized by high and low levels of productivity, in order to effectively devise ICT development strategies. This article explores the significance of investing in contemporary data storage, infrastructure, and communication technologies for firms seeking to expand their worldwide presence. The importance of organizations allocating funds towards technological advancements, transitioning to cloud-based infrastructure, and implementing unified communication systems is emphasized. The article further emphasizes the significance of contemporary business technologies, like point of sale (POS), enterprise resource planning (ERP), and customer relationship management (CRM). This paper also addresses the challenges and opportunities involved in the formulation of an information technology globalization strategy.

**Keywords** – Information and Communication Technologies, Network Operations Center, Enterprise Resource Planning, Point of Sale, Customer Relationship Management.

## I. INTRODUCTION

Technological advancements have significantly transformed several firms, leading to a full restructuring of their operations. These advancements have resulted in enhanced efficiency and fluidity of business processes inside these organizations. The use of information and communication technology (ICT) has become an essential tool in enabling and sustaining organizational activities. The occurrence of this phenomena has led enterprises to invest resources towards ICT as a strategic asset that may directly influence the entire performance of the firm. In the present day, the domain of ICT has seen a transformation from its traditional function of providing administrative support to assuming a powerful role in attaining a competitive edge. The transition may be ascribed to the fact that ICT not only assists in the efficient execution of existing organizational processes, but also enables the adoption of innovative business approaches.

Numerous academic inquiries have been undertaken to evaluate the impact of ICT on organizational effectiveness. The majority of these studies have shown that ICT plays a crucial role in enhancing the quality, quantity, and dissemination of information. Consequently, this empowers businesses to optimize the allocation of their resources in order to achieve their objectives to the fullest extent. According to DeStefano, Kneller, and Timmis [1], firms use ICT that promotes innovation in order to effectively market their goods and gain a competitive edge. This assertion is substantiated by a multitude of prior studies (e.g., Rajaguru and Matanda [2]; Shahzad et al. [3]; Real Vásquez-Vargas et al. [4]) that demonstrate the positive impact of compatibility on organizational performance. Additionally, it has been emphasized in several studies that the use of ICT tools enables firms to effectively utilize both formal and informal networks. Moreover, these technologies facilitate the adoption of novel marketing strategies and, in some scenarios, modifications in sales approaches to gain access to markets.

Efficient information technology (IT) methods may achieve a nuanced equilibrium between the aspects of agility and stability, as well as between security and accessibility. According to Yanushevsky [5], an optimal Strategic Plan should aim to strike a harmonious equilibrium by pursuing scalable systems and operational efficiency that exhibit both high responsiveness and resilience. Additionally, it should acknowledge the pivotal role of information inside an organization. The system should be readily available to the appropriate individuals while also being safeguarded against any threats that might undermine the company's capacity to instill trust and maintain the integrity of its financial operations. In the process of formulating our IT Strategy, it is imperative to demonstrate a strong dedication towards enhancing the organization's capacity to effectively address emerging risks and exploit potential IT prospects. This entails proactively devising innovative approaches to mitigate these risks, while also anticipating the requirements of financial institutions, consumers, and employees. The achievement of these objectives necessitates the establishment of collaborative efforts and a collective sense of responsibility for the delivery of IT services across the whole business.

This article examines the significance of enhancing data storage, infrastructure, and communication technologies for firms seeking to grow their worldwide presence and enhance their competitive edge. This highlights the need for enterprises to allocate resources towards the modernization of their physical infrastructure, transitioning to cloud-based systems, and adopting integrated communication platforms. The article also emphasizes the need of establishing a Network Operations Center (NOC) and implementing modern corporate applications such as CRM, ERP, and POS systems. Moreover, the article examines the many obstacles and factors that must be taken into account while executing an information technology globalization strategy.

The rest of the article has been organized as follows: Section II discusses the aims and objectives of the research. Section III presents a review of previous literature works on the subject in this article. Section IV discusses the methodology employed in conducting this research. Section V discusses the results of this paper, focusing on the state of different firms depending on traditional technologies, Secondly, the section discusses the alignment of these changes with organizational goals; sustainable technology best practices and standards; and how the recommended changes address the global economic challenges within the context of global marks. Section VI draws a conclusion to the research and recommends directions for future research.

## II. AIMS AND OBJECTIVES

The aims and objectives of this article include:

- To underscore the need of enhancing data storage activities and infrastructure in order to facilitate worldwide growth and enhance operational efficiency.
- To emphasize the advantages of integrating unified communications and contemporary communication technologies in order to improve cooperation and promote competitiveness.
- To examine the importance of implementing contemporary ERP and Point of Sale (POS) systems in enhancing corporate operations and decision-making, with a specific focus on the international market.

## III. LITERATURE REVIEW

Roztocki, Soja, and Weistroffer [6] assessed the technical component within the context of a multi-dimensional framework that examines the impact of ICT in socioeconomic growth. Within the realm of technology, we include ICT with supplementary technologies that facilitate individuals and entities in extracting optimal advantages from ICT. The definition of technology has undergone transformations throughout history, and the topics that are being debated in relation to technology were previously conceptualized using categories such as machine, useful arts, applied science, manufacturing, innovation, and industry. Furthermore, technology, when defined narrowly, may be seen as a collection of machinery and processes.

However, we embrace a more expansive interpretation of technology, aligning with the perspectives of John Dewey, an American philosopher, who argued that technology should not be confined to a restricted number of external and mostly mechanical manifestations. In our comprehension of supportive technologies, we adhere to the perspective put out by Alblas and Wortmann [7], whereby technology is widely characterized as including both physical and intangible elements that have the potential to facilitate the economic, industrial, or cultural advancement of a nation. The term ICT is often used as an expansion of or interchangeably with information technology (IT). In a broad sense, Information and Communication Technologies (ICT) include the integration of hardware, software, and communication networks to facilitate the acquisition, storage, manipulation, and transmission of electronic information. ICT and its associated technologies operate in a mutually beneficial manner to maintain corporate operations and foster socioeconomic progress.

Technological advancements have significantly transformed several firms, resulting in enhanced efficiency and fluidity of their business operations. In contemporary business practices, the use of ICT has emerged as a crucial instrument for facilitating and maintaining operations. The aforementioned phenomenon has prompted organizations to allocate resources towards ICT as a strategic asset capable of directly impacting the performance of the firm. In contemporary times, the field of ICT has transitioned from its conventional role of providing administrative assistance to becoming a powerful tool for gaining a competitive advantage. This shift is attributed to the fact that ICT not only facilitates the smooth functioning of current business processes inside companies, but also empowers the formulation and execution of novel business strategies.

Nevertheless, there is a deficiency in contemporary hardware that facilitates the worldwide growth and improved infrastructure inside firms. This article examines the significance of hardware updates and architectural reviews in facilitating worldwide development and enhancing organizational infrastructure. The statement underscores the need of enhancing data storage infrastructure and transitioning to cloud-based solutions for corporate applications. The evaluation also emphasizes the need of establishing a Network Operations Center (NOC) and integrating unified communications as strategies to improve team productivity and foster cooperation. Moreover, the text examines the prevailing inclination towards cloud computing and underscores the significance of contemporary POS and ERP systems in the realm of corporate operations. The assessment further discusses the difficulties associated with ensuring data security and privacy, as well as the intricacies involved in the implementation and upkeep of an IT Globalization strategy. In general, the literature study offers valuable insights into the multitude of elements that businesses have to take into account in order to enhance their operational efficiency and competitive advantage within the global market.

#### IV. RESEARCH METHODOLOGY

This research used secondary data. The collection of secondary material will be conducted via the examination of previously published works, firm reports, and case studies. This secondary study aims to provide insights into the present prevailing methodologies and demonstrate the key factors necessary for the effective implementation of changes.

The primary keywords under investigation include traditional technologies, data storage, infrastructure, hardware, architectural review, support operations, CRM, POS, Network Operation Center (NOC), network latency, data center facility, unified communications, communication technologies, cloud computing, ERP system, POS system, enterprise data management, centralized database, data security, data privacy, migration to the cloud, project management methodologies, and d. The data obtained will be subjected to both quantitative and qualitative techniques of analysis. In order to get significant insights from qualitative data, such as interviews and surveys, the approach of theme analysis will be used. The statistical analysis will be used to examine patterns and correlations within the quantitative survey data.

The synthesis and evaluation of data analysis findings will facilitate the formulation of conclusions and recommendations for firms seeking to modernize their data storage and infrastructure. The study's findings will be comprehensively documented in a complete report, including essential sections such as an abstract, introduction, literature review, results and discussion, and conclusion and future scope. The obtained data from secondary sources will be subjected to rigorous and transparent analysis procedures. The primary objective of this research technique is to provide a comprehensive understanding of the benefits and problems associated with the process of upgrading data storage and infrastructure inside enterprises. This research, which utilizes secondary data, has the potential to assist organizations in improving their operations and global competitiveness via the provision of valuable insights and recommendations.

#### V. RESULTS AND DISCUSSION

##### *State of Organizations relying on Traditional Technologies and Recommendations*

##### *Activities for Storing Data*

The field of data storage has a long-standing association with computers, and the management of research data introduces some distinct issues, particularly in terms of durability and confidentiality. Typically, specialized personnel are responsible for managing technical details. However, acquiring a fundamental comprehension of the internal mechanisms, benefits, and constraints associated with different possibilities may facilitate the development of customized data management strategies tailored to the requirements of individual research projects, communities, or topic areas.

The first factors to be taken into account in relation to storage are the specific medium and technology used. Presently, the most often used alternatives are:

- Magnetic (hard disk drives, magnetic tapes): Magnetization patterns on a unique surface are used to store the data.
- Optical (compact disks, Blu-ray): Disturbances on a spherical surface store information that may be read with a laser diode.
- Semiconductor: Integrated circuits based on semiconductor technology are used to store data.

Historically, this particular technology was primarily employed for volatile storage, which implies that data is susceptible to loss in the absence of electric power, unlike magnetic or optical storage. However, solid-state drives (SSD), commonly found in consumer computers nowadays, provide a non-volatile alternative that surpasses magnetic storage in terms of access speeds. When evaluating these alternatives, it is important to take into consideration many factors, including convenience, pricing, and dependability. In research done by Blumzon and Pănescu [8], it was shown that tape drives tend to exhibit more cost-effectiveness compared to hard disks. The findings of the study indicated that the expense associated with storing one gigabyte of data on tape drives amounted to \$0.02, whilst the corresponding cost for hard disk drives (HDD) was \$0.033. Nevertheless, it is important to acknowledge that tape drives possess several limitations, including comparatively slower rates of data retrieval and the need for specialist equipment.

The evaluation of scientific data necessitates the careful consideration of dependability, since the possible loss of information might lead to substantial setbacks or even experimental failure. In the first phases of solid-state drives (SSDs), they demonstrated higher rates of failure in comparison to their hard disk drive (HDD) counterparts. Nevertheless, a study done in 2016 reveals that the rates of failure for solid-state drives (SSDs) have reached a level comparable to, or even lower

than, that of hard disk drives (HDDs). According to the study by Bux and Iliadis [9], less than 2% of SSDs experience failure during their first year of operation. The determination of reliability may also be influenced by factors such as brand and models. According to Jacob, Tennenbaum, and Krahn [10], the average yearly failure rate was calculated to be 1.94%. However, it is worth noting that a specific model had a much higher failure rate, exceeding 14%.

The existing support activities are potentially expensive and need a significant amount of equipment. If an organization chooses to persist with its current operations without implementing any upgrades, it will not be advantageous for the company. This is not only due to the financial implications but also because it will impede the organization's plans to upgrade other applications, such as CRM or POS applications. The hardware of a data center, including network components, serves as the foundational infrastructure for IT systems. These components are essential for the proper functioning of all front-end technologies. In several instances, a company may overlook a vital aspect of infrastructure management, often referred to as the Network Operation Center (NOC). Because of the importance of their role in responding to alerts and following the incident management method, this crew must always be present. If a firm has a dedicated Network Operations Center, it signifies their commitment to actively address events and promptly notify management or customers on emergency situations and planned repair activities. The inclusion of NOC team members in the management of Level 1 duties provides an opportunity for the core technical teams to allocate their attention towards other significant projects and activities aimed at enhancing service quality.

An organization may use point-to-point connections between its various sites in order to give network connectivity. However, this approach is not only expensive but also restricts the adoption of advanced network technologies such as SDWAN (Software-Defined Wide Area Network). Point-to-point connections may introduce network latency, which can have an impact on response times for various applications. This delay also has important implications for customer service and overall business operations, particularly for companies with a worldwide presence.

#### *Recommended Changes to Activities of Storage of Data*

If the organization has a pre-existing information center facility in close proximity to its corporate headquarters, where a substantial amount of infrastructure has already been established, it is unnecessary to seek for an alternative data center location. If the firm intends to update, it would be advisable for the corporation to retire older infrastructure and move from old single operating instances to the new cloud platform, especially if there are plans for implementing additional apps such as CRM. The company is advised to allocate resources towards the enhancement of the current facility to align with contemporary standards. It is not recommended to relocate to a new information center facility unless there are valid justifications for doing so. The organization should furthermore strategize the migration of its corporate systems, such as CRM and HCM software, to cloud-based platforms. The implementation of this solution will not only enhance the company's capacity to effectively oversee commercial and application operations in the global market, but it will also bolster dependability due to the outdated nature of the current infrastructure.

The firm should strategize for the modernization of its data center infrastructure in order to accommodate its corporate applications that are not suitable for migration to cloud-based platforms. Additionally, it is essential for the organization to make provisions for updating its network and server infrastructure in order to ensure the provision of enough network speed and processing capacity. These factors are crucial for the successful operation of modern applications. The firm should moreover consider strategizing the establishment of a NOC that will be effectively controlled round the clock, encompassing all seven days of the week. The presence of this staff is crucial, since they diligently monitor alerts and adhere to the incident management protocol. If a firm has a dedicated Network Operations Center, it indicates their strong commitment to actively address events and promptly notify management or customers on emergency situations and planned repair activities. The use of effective strategies may assist the organization in reducing the duration of operational disruptions, hence mitigating the negative impact of system failures. Furthermore, the corporation demonstrates a commitment to adhering to established protocols for addressing and resolving issues, as seen by their careful adherence to the problem management process. The use of this strategy is expected to decrease the frequency of disruptions, hence contributing to the maintenance of a consistent income stream.

#### *Unified Communications*

There are several definitions for unified communications (UC). A concise and efficient description might be formulated as follows: "Communication involving the utilization of integrated communication devices to enhance business processes and generate substantial profits within reasonable timeframes." Unified communications refer to a dynamic collection of technologies that streamline and integrate human and device communications under a shared context and user interface. The optimization of corporate operations and the enhancement of human communications are achieved via the reduction of latency, the management of flows, and the elimination of device and media dependencies. Unified communications refer to the integration of many kinds of corporate communications. Unified communications are not a single entity, but rather a compilation of several components shown in **Table 1**.

**Table 1.** Components Forming Unified Communications

<b>Component</b>	<b>Explanation</b>
<b>Call control/IP PBXs</b>	IP PBX is a Unified Communication enabler, while other manufacturers regard the switch or IP PBX is the central component of a UC solution and others see UC as essentially an extension of Internet telephony. The PBX/IP PBX is the infrastructure that supports a UC system.
<b>Presence</b>	The foundation of every successful Unified Communication system is “presence.” Presence will be the “dial tone of the future” since it is the foundational enabler for Unified Communication. With presence, you'll always know when someone is online and ready to chat. Presence servers' aggregate presence data from several sources and provide a consolidated view of availability to clients.
<b>Instant messaging</b>	A vital part of any Unified Communication system is instant messaging (IM). Instead of using a free public IM service like AOL or Yahoo, businesses should invest in an enterprise-grade IM solution. When compared to public IM services, enterprise IM solutions provide a higher level of security and privacy. Unfortunately, business IM platforms are not as interoperable as presence servers.
<b>Unified messaging</b>	With unified messaging (UM), your voicemail, fax, and email notifications are all rolled into one. With UM, users may view these communications from any device, at any time. Most UM systems go beyond just store-and-forward by integrating features like desktop call screening for incoming calls, find-me/follow-me functionality, cross-media messaging, call return or live reply.
<b>Personal assistant and speech access</b>	Personal assistants (also known as virtual assistants) enable users to access their email, calendar, contact list, and other services with the use of voice commands. Personal assistants allow users to manage their UM system in addition to their calendar, contacts, outbound calling, and other time- and task-based applications.
<b>Conferencing and collaboration</b>	Conferencing and collaboration include several communication modalities, including web conferencing, video, and audio. Additionally, it encompasses collaborative features like document sharing, shared workspaces, file sharing, and whiteboarding. Web conferencing is now seeing rapid growth as a technology within the collaborative portfolio. This technology enables collaboration via the use of a Web browser and an Internet connection, facilitating real-time conferences where participants may simultaneously view presentations and other materials.
<b>Mobility</b>	More and more audio and video communications in the UC world will originate from, and be linked to, mobile wireless devices. By connecting the voice and instantaneous communication capabilities of mobile users to the backbone of the business's communications infrastructure, employees may continue working from anywhere.
<b>Business process integration</b>	Integration with workflow apps and corporate processes is a crucial component of a UC system. Eliminating “human latency”—a business process that is impeded by having to wait for communication or human input—is one of the main objectives of business process integration. Nowadays, work often stops in the middle of corporate processes until someone can provide the information required to go on to the next phase.

#### *Suggested Modifications to the Activities of Unified Communications*

If the company's Local Area Network (LAN) is operating at a suboptimal speed and the business intends to use unified communication solutions to facilitate collaboration via chat, emails, and video conferencing. In order to achieve this objective, the organization should strategize the enhancement of its local area network (LAN) infrastructure and consider adopting a cloud-based solution such as Google. Google offers many communication tools, including Gmail for message, Google Hangouts for video and audio conferencing, and a chat feature. The integration of an online server for group work aligns with the corporate application strategy, particularly in the context of customer relationship management (CRM). This is due to the seamless integration capabilities of Google functions with other cloud apps. In the event that the firm is presently catering to its clientele across various nations and intends to expand its presence in the global market, it is essential for its team members to engage in collaborative efforts on a dependable and user-friendly global platform in order to accomplish these goals. The Google Suite includes several integrated functions, such as Google Translation, as well as supporting programs like Google Docs for the creation of Google drive and new documents for cloud-based document storage.

The incorporation of these elements would facilitate real-time collaboration among team members, hence enhancing the company's ability to expedite its achievements within the global market. The financial analyst will assess several elements to evaluate an organization's performance, including its financial outcomes, growth plan, and adherence to previously stated quarterly objectives. If a firm demonstrates a dedication to facilitating its workers with a real-time interactive platform for team collaboration, it will enhance their ability to efficiently attain objectives and meet deadlines. The use of the Google suite may effectively assist the organization in achieving its primary goals due to its utilization of a client-based email architecture and its ability to seamlessly interface with third-party email client apps, such as Outlook. The employees of the

organization have the convenience of accessing their email accounts using the built-in functionalities of their mobile phones or iPads. Team members have the ability to engage in real-time collaboration via the use of Google Hangout, either through voice or video conferences.

#### *Justification and Alignment of Above Changes Above with Company Goals International Trends in Technology*

In contemporary times, the internal operations such as customer records administration and SCM have become more intricate, necessitating the use of a diverse range of sophisticated instruments to ensure optimal functionality. The selection of business tools is not only crucial, but it is also essential to assess their level of integration. The intricate data flow process managed by modern business apps offers the firm a means to effectively address organizational challenges and enhance daily operational efficiency. The prevailing global trend in corporate applications is the use of cloud computing, whereby enterprises are opting to migrate a portion or the whole of their infrastructure to cloud-based platforms. When apps are deployed on cloud infrastructure, the user receives services via the use of their local internet connection. Computing resources and network requirements are handled by the service provider, eliminating the need for a significant investment in on-premise IT infrastructure. A cloud-based service exhibits high scalability and little setup effort.

In several instances, a hybrid strategy proves to be very effective due to the sometimes impracticability of fully transitioning all business applications to the cloud. This is often attributed to the presence of legacy procedures or intricate connections with various in-house business operations. In light of this, it is logical to consider enhancing the current data center infrastructure and acquiring the necessary hardware. It not only furnishes the necessary computational capacity for internal applications, but also presents a robust network infrastructure for accessing internet-based applications hosted in the cloud. The use of an Integrated Voice and Data Network, such as Google Suite, facilitates team collaboration via the utilization of many communication channels, including email, chat, audio, and video conferencing. In the contemporary global context, where diverse team members are geographically dispersed, the implementation of a real-time collaboration platform is essential.

In contemporary times, an ERP system plays a crucial role as the foundational infrastructure for conducting business activities inside a company. This software helps the management in the ongoing updating of its essential business processes. The implementation of a contemporary ERP system, including modules such as Human Resource Management System (HRMS) and Material Requirements Planning (MRP), may significantly improve the effectiveness and efficiency of any business establishment, particularly those operating in the global marketplace. There is a growing worldwide phenomenon whereby medium and large-scale firms are increasingly using ERP solutions to access necessary information that aids in their strategic decision-making endeavors.

An ERP system that is thoroughly developed and equipped with several features may assist in establishing a firm that remains abreast of the prevailing market trends. The implementation and consolidation of the Point of Sale (POS) system is a crucial undertaking for the company's expansion and aligns with the prevailing worldwide technological trajectory. In the contemporary global marketplace, several organizations are actively engaged in operations on an international scale. Consequently, it is essential to conduct a comprehensive analysis of their overall performance by examining metrics derived from aggregated data obtained from all areas, rather than assessing individual segments in isolation. If judgments are made only based on restricted performance, it may provide short-term benefits for the given area. However, it is important to note that this might potentially have negative repercussions in other domains and hence impact the overall operational efficiency of the organization.

The contemporary point-of-sale (POS) system bears significant significance for a corporation engaged in domestic markets. The system furnishes essential data that can be used by other analytical tools, such as graphs, charts, and tables. This enables executives to effectively manage day-to-day activities and make crucial strategic choices. According to Blokdyk [11], throughout the late 1980s, several firms began using front office applications, such as contact management software, for the purpose of storing and organizing client contact information. During the 1990s, advancements in technology facilitated the emergence of automated corporate processes, which served as a fundamental basis for the development of contemporary customer relationship management (CRM) software. The CRM system has evolved into a sophisticated tool that is seamlessly connected with various corporate systems. It effectively oversees all company connections and meticulously examines interactions of the customer and data over the whole life cycle of a customer. Numerous firms are now engaged in worldwide operations and want to broaden their presence across other countries. In light of the prevailing technological trend, opting to use a unified, contemporary Customer Relationship Management (CRM) system is a judicious decision.

#### *Sustaining Technology Best Practices and Standards*

From a design science standpoint, a standard may be defined as a consensual artifact that emerges from a design process and delineates an envisioned state of a particular domain in the actual world. According to Goodman, Guell, Panter, Jones, and Ogilvie [12], standards may be seen as socio-economic structures that represent a harmonious viewpoint among various stakeholders. The object designed to serve as a benchmark is often referred to as a framework, akin to a conceptual or scientific framework. As stated by Engeström and Sannino [13], a conceptual framework may be defined as a theoretical structure consisting of interconnected ideas, whereby each concept has a significant function. In the field of software

engineering, a framework is often regarded as a reusable design that encompasses several components and patterns. Design patterns are conceptual tools that provide straightforward and refined answers to particular challenges. This statement highlights the significance of reference models, which are conceptual representations of domain information. These models are valuable for collecting both prescriptive and descriptive design knowledge related to sociotechnical challenges. Furthermore, it is their purpose to provide assistance to organizations in developing solutions that are tailored to their unique needs. Although scientific reference models and professional standards include similar characteristics, they vary in terms of the nature of their creation process. Professional standards are often formulated by practitioners who draw upon their practical experience.

While it is possible to integrate theoretical knowledge with contemporary research, the emphasis on a structured description and scientific rigor is somewhat diminished. After the development of a standardized framework, early adopters will evaluate the framework based on its value proposition, which is significantly influenced by the expertise of its creators. The effective propagation of a standard may be elucidated via the lens of the network effect hypothesis, which posits that the increasing adoption of a standard by various stakeholders enhances its utility for the wider community. In this manner, an augmentation of distribution signifies a favorable assessment via empirical application. Therefore, it may be argued that a professional standard is a distinct kind of informal reference model that has been substantiated by practical application. Another concept that is strongly associated with professional standards is methodology. Project management standards are often recognized as methods that consist of prescriptive explanations of process models and strategies for project management (e.g., [14]). The word “method” may be used interchangeably with “methodology” (e.g., [15, 16]), as well as to refer to particular processes that are included in a project management methodology (e.g., earned value analysis [17]). The notion of a management technique based on situational method engineering aligns with a more thorough understanding of methodology, such as that found in PM methodology.

Coughlan et al. [18] defines a management technique as a framework that directs decision-making within the organizational context of planning, implementing, and monitoring in order to accomplish certain management objectives. Armour, Kaisler, and Liu [19] demonstrate a correlation between method and framework in their discussion of the design and growth of enterprise architecture. They assert that methods play a crucial role in creating components within the framework. The phrase “best practice” is often used within the realm of professional management standards. ITIL is well recognized as a prominent exemplar that clearly designates itself as a “best practice methodology”. According to Cook et al. [20], best practice may be defined as a methodology or approach that has shown its effectiveness via successful implementation by several businesses. The association between best practice and enhanced organizational performance is often discussed in the field of management literature. Despite facing criticism for its limited proof of causation and generalizability from individual case studies, the notion is widely embraced in both academic and practical contexts to this day (e.g., [21]). The International Organization for Standardization (ISO) expresses a preference for the phrase “good practice” or, more recently, “recommended practice”. However, ISO also characterizes it as “the best way” of doing a task [22]. In the context of methodologies, the concept of best practice may be seen as a characteristic that imbues a technique with a prescriptive nature. The diagram shown in Fig 1 depicts the interconnections among the various components inside a conceptual model.

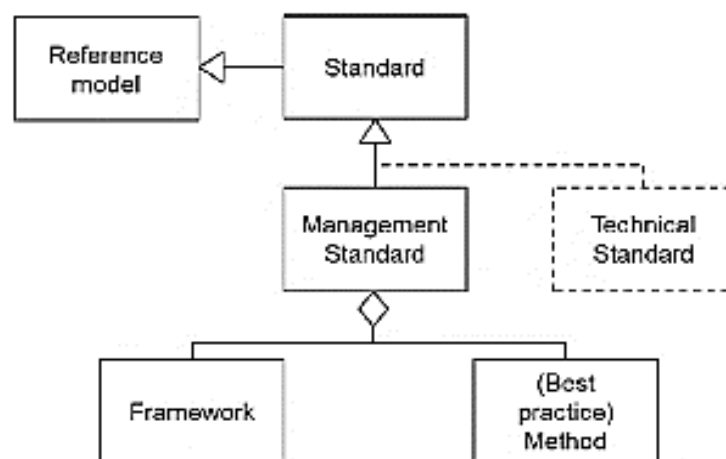


Fig 1. A Theoretical Framework for Management Concepts and Standards.

Organizations worldwide are now under heightened pressure to adopt corporate data management practices. There exists a pressing need to ensure the accessibility, utility, and security of data. The firm must possess the capability to effectively use the data acquired from diverse transactions in order to inform decision-making processes, shape the trajectory of the organization, and enhance operational efficiency. The prevailing technological norm and optimal approach dictate that data should be standardized, securely kept, while being available to users, and transformed into practical formats. Numerous retail

enterprises are now handling a substantial quantity of data on a regular basis, and are seeing rapid growth. According to Bar-Yossef, Jayram, Kumar, and Sivakumar [23], data streams include a wide range of information, including inventory numbers, videos, financial data, photos, and other forms of unorganized information originating from many sources. The prevailing technological trend involves the use of a centralized database that supplies pertinent data to various instruments. This approach not only mitigates the occurrence of redundant copies but also streamlines the process of data administration.

Numerous firms are embracing the use of contemporary corporate apps that are hosted on cloud-based platforms. Cloud-based apps have the advantageous qualities of scalability and reliability. Contemporary apps provide comprehensive information governance standards that are used to safeguard the security, quality, and integrity of data. The integration of current ERP and Customer Relationship Management systems with additional tools such as Point of Sale (POS) or sales audit enables the centralization and consolidation of diverse corporate data into a unified and easily accessible platform. Ensuring accessibility and usability of various data formats is a crucial component for the firm. Contemporary CRM, ERP, and POS systems include robust data protection measures. In the current era of technological advancements, the significance of ensuring data security by maintaining a centralized location on a distant cloud platform cannot be overstated. This kind of protection encompasses not just measures against leakage and theft, but also encompasses the preservation of data integrity and the prevention of corruption or destruction.

The existence of a rapid and reliable network infrastructure is crucial for both the effective running of on-site applications and the successful functioning of cloud applications on client systems and PCs. The ability of firm leaders to articulate a shared vision and offer a clear way for team members is crucial; nonetheless, it is ultimately the collective efforts of workers that drive the actualization of objectives. The prevailing practice involves the establishment of distinct teams, organized either around a single product or a shared objective, with the aim of attaining a predetermined target. This is accomplished via the use of diverse project management approaches, such as agile or scrum. The implementation of projects and the smooth execution of everyday operations need the use of a single communication platform.

#### *How Recommended Modifications Address Global Economic Challenges and Opportunities in International Markets*

The growing reliance of corporations on global commerce and expansion, along with the heightened level of competition, makes the choice of foreign markets a critical determinant in international strategy. However, there is a poor understanding of the first market entrance choice, despite its significance. The literature study indicates that there is a lack of cohesion in the research conducted on the issue, as it has been dominated by studies focused on market entrance method selection. Furthermore, there is a scarcity of integrated frameworks and complete investigations into the market selection process. Several studies have proposed various criteria for market selection, including level of economic production, product-specific growth and size of the market, factors of production cost and availability (Dosi, Marsili, Orsenigo, and Salvatore [24]; Papadopoulos, Hong-Bin, and Thomas [25]), as well as the market knowledge, country environment, information, psychic distance, competition, and market-based factors.

According to Shi, Ho, and Siu [26], several prominent tendencies can be observed in the literature on market/market entry mode selection. These include the prioritization of the external habitat interest over the internal environment of companies, the prevalence of prescriptive approaches over descriptive ones, a static perspective, and a focus on quantitative aspects of the process while neglecting qualitative aspects. The evaluation of the feasibility of international markets is typically approached through two main methods: the general approach and the context-specific approach. These approaches involve a series of stages, such as final selection, preliminary screening, and in-depth screening. The first evaluation, sometimes known as "screening," involves the identification of prospective markets that are suitable for further in-depth examination. The firm utilizes macro-level factors to exclude nations that do not align with its aims. The recommended screening criteria include size of the market, the rate of growth, alignment between consumer desires and the competitive, and product rivalry. The identification step includes the evaluation of industry attractiveness and the projection of revenues and expenses for the selected nations. The last phase of the selection process involves identifying the national market that aligns most effectively with the company's aims and the resources at its disposal.

In the future, should a business want to establish a fresh alliance with a regional firm, the use of a cloud-based new-age enterprise application architecture would facilitate a seamless merging process. One of the prominent economic difficulties faced on a worldwide scale pertains to the domain of data security and privacy, with particular emphasis on retail enterprises. Lou, and Ren [27] asserts that the challenges of data privacy and security have emerged as significant impediments to the adoption of cloud computing, particularly in the realm of applications that are essential to business like CRM, ERP, and SCM. This is primarily due to the essential role these applications play in storing and supporting critical processes and data. Organizations already possess an array of security-centric solutions that they use to retain, construct, and establish trust with application and cloud suppliers.

As a result, there has been an increase in the frequency of migrations to hosted environments and cloud platforms. One additional problem lies in the fact that organizations operating in the worldwide market often engage in intricate and tailored business processes that cannot always be accommodated within a cloud-based ERP software delivered as a service. The process of migrating to the cloud sometimes involves first operating on-premise applications in hosted settings. In order to effectively tackle the many difficulties at hand, it is essential to concurrently focus on enhancing internal infrastructure to accommodate the needs of future generations, while also maintaining momentum in the implementation of cloud migration



strategies. In several instances, businesses use a hybrid environment that effectively combines the advantages of different approaches, so avoiding any sacrifices in terms of dependability and service quality.

#### *Challenges and Opportunities Affecting the Implementation and Maintenance of This IT Worldwide Plan*

One of the key obstacles associated with the execution of the IT Globalization strategy pertains to the company's need to guarantee a seamless and effective transfer, while concurrently upholding the requisite security protocols at every stage of the project. Ensuring the security of essential organizational data is crucial, not only for safeguarding the information but also for ensuring compliance with external requirements. In order to guarantee a safe and prosperous migration, particularly in the context of moving to a hosted environment, it is essential for the company to adequately handle the following enumerated themes. The installation of cloud CRM and ERP software in IaaS system presents many significant obstacles for enterprises. The execution of security patches, the reinforcement and secure configuration of the application, the supply of users and authorizations, the secure integration of ERP apps, and the practice of monitoring applications

One further obstacle encountered throughout the execution of the IT Globalization initiative pertains to the formulation of a comprehensive migration strategy that facilitates the transition from the present state to the desired future state. Numerous firms are now engaged in operations within the global market. The organization is now implementing very intricate and tailored business procedures in isolated units, which often cannot be integrated into a cloud-based ERP SaaS. The first phase of cloud migration often involves the deployment of on-premise systems in hosted habitats. One of the primary obstacles encountered during the execution of the IT globalization strategy, and particularly crucial for the successful operation of the new application, is the training of personnel in the use of novel tools and their efficient management.

## VI. CONCLUSIONS AND FUTURE SCOPE

In summary, it is imperative for firms seeking worldwide expansion and enhanced competitiveness to prioritize the enhancement of data storage, infrastructure, and communication technologies. The procedure necessitates the adoption of contemporary hardware, the transition to cloud-based systems, and the integration of unified communication platforms. The establishment of a Network Operations Center (NOC) and the integration of contemporary corporate applications such as CRM, POS, and ERP systems play a pivotal role in enhancing company operations and facilitating informed decision-making, especially within the global market. Upgrading data storage operations and infrastructure yields several advantages, such as greater information exchange and resource allocation, hence resulting in improved organizational performance. In order to facilitate international development and enhance infrastructure, it is necessary to undertake hardware upgrades and conduct a comprehensive architecture assessment. The use of cloud computing for corporate applications and the establishment of a specialized Network Operations Center (NOC) may effectively mitigate instances of system unavailability and ensure consistent revenue generation. Unified communications (UC) systems have been shown to effectively streamline corporate processes and improve human communications. By facilitating real-time collaboration, UC enables quicker worldwide market expansion.

The use of contemporary ERP and Point of POS systems is crucial in improving the caliber and effectiveness of company processes. An ERP system that has undergone significant development and has a wide range of functionalities enables firms to remain abreast of prevailing market trends. Similarly, a contemporary point-of-sale (POS) system plays a crucial role in providing essential information necessary for making strategic decisions. The implementation of a cohesive customer relationship management (CRM) system that seamlessly interfaces with other corporate applications is of paramount importance for firms engaged in worldwide market operations. Technology standards and best practices are of paramount importance in the maintenance of a harmonious relationship among stakeholders, as well as in safeguarding the security and integrity of data. Cloud-based apps provide robust data protection and enhanced accessibility, with the efficient operation of these applications relying heavily on a high-speed and dependable network infrastructure. The implementation and maintenance of IT globalization initiatives include a range of possibilities and problems. The process of market selection has significant importance within the realm of international strategy, necessitating firms to carefully navigate this decision-making process in order to achieve a seamless transition while upholding established security requirements. The challenges include the implementation of security measures, user provisioning and authorizations, as well as the safe integration of ERP software.

Future research in this domain may direct attention towards examining the ramifications of enhancing data storage, infrastructure, and communication technologies on the performance and competitiveness of organizations. Moreover, conducting a more comprehensive examination of the obstacles and factors to be taken into account while executing IT globalization strategies, particularly with regards to the protection of data and preservation of privacy, would be of great significance. Further investigation might delve into the significance of technological standards and optimal methodologies in maintaining equilibrium among various parties involved, while also safeguarding the confidentiality and reliability of data. In general, sustained investigation in this domain will make a valuable contribution to the development of proficient information technology strategies for firms seeking to grow their global presence and enhance their competitive edge.

#### **CRedit Author Statement**

The authors confirm contribution to the paper as follows:

**Conceptualization:** Adia Liu and Fabio Eva; **Methodology:** Adia Liu; **Writing- Original Draft Preparation:** Fabio Eva;

**Investigation:** Adia Liu and Fabio Eva; **Supervision:** Adia Liu; **Validation:** Adia Liu and Fabio Eva; **Writing- Reviewing and Editing:** Adia Liu and Fabio Eva. All authors reviewed the results and approved the final version of the manuscript.

#### Data Availability

No data was used to support this study.

#### Conflicts of Interests

The author(s) declare(s) that they have no conflicts of interest.

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