The Implementation stages of ERP application and It Advantages

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Abstract

Enterprises Resource Planning (ERP) system has become the standard for organizations to achieve collectiveness and better integration within a business set units/department. The ERP system creates the platform for integration of all business processes that guaranty immediate tracking of the business growth. For Large organization with multiple office locations, benefited more on ERP platforms as it integrates all their offices business processes on a real-time basis that give managers and top Executive an overall performance of the company or a snapshot of the company activities. It also provides the decision-makers quicker analysed information from their desktop to reach a conclusive decision for the smooth running of the organization [1]. It helps Management to control better and reposition the organization trend of doing things as its scoop information from various departments. This article will enable scholars to understand how ERP is implemented and its benefit for any organization setting.

Keyword: Enterprises Resources Planning System, Information System, Business performance.

Introduction

In the early 1990s, ERP concept derived from MRP (Material Requirements Planning and MRP II (Manufacturing Resources Planning II), [2]. Since the revaluation of ERP systems in linking all business processes, its benefits outweigh its disadvantages provided if the ERP platform is effectively implemented, [2]. Such implementing company would benefit in cost savings, business two business (B2B) interaction, and integrates the business processes for better information analysis. It provides business enterprises with effectiveness and promptness in its service delivery [2].

Today global business trend and customer taste and needs have shifted the business perspective into spending more time on research on Information Technology (IT) and how to improve their Information System (IS) needs [3]. These researches have led the organization to have an excellent integrated system platform for its Business Processes (BP). Hence, Enterprises Resources Planning (ERP) system platform becomes the solution, which not only integrates the business processes but enhances the effective delivery of services to the customer and guarantees timely information to relevant authorities within the same organization for prompt decision making.

Several scholars have research on various angles and topics of ERP system, ranging from its usefulness, implementation, adaptation by users, it cost, benefit and disadvantages and so on [3], [5]. However, all the researches narrowed to the importance of why businesses should acquire ERP system to be able to compete in the current global trend of doing business, where there is a cutthroat market [3], [5]. Thereby, service delivery becomes critical, as it serves as a game-changer to position the business to the apex of the market. ERP is the integration of business processes such as accounting processes, supply chain management, investment processes, store management, payroll, and much more., and link all departmental function into one repository. Whereby information is retrieved from the warehouse by various departments at any given timeframe, [4].

There are several types of ERP brands; however, most of the ERP systems are custom design to meet the customer's needs. However, all of the ERP systems goals is to integrate all processes in the organization and improve service delivery.

Methodology

In this research, both primary and secondary data were collected and analysed to a report. A structured questionnaire was developed and administered to collect responses from the sample population within Credit Recovery Agency and respondents from the financial institution in Sierra Leone. Also, interviews were held with Senior managers from Sierra Leone Commercial Bank, Fibank, Ecobank, United Bank for Africa, Apex Bank and A. An Enterprises. All of these managers head their respective Information and Technology department. In regards to the secondary data collected were articles review relating to ERP set-up in an organization and CRA manual on ERP application on system set-up for enterprises. The Credit Recovery Agency (CRA) grants two days interview to the research team to observe the performance of their applications within their local network. CRA developed customise ERP software for local councils and other small to medium enterprises across Sierra Leone. Interviews and focus group discussions were held with senior management official and engineers of the company to understand better the implementation stages and the advantages of having an ERP system in the workplace. At CRA the line managers were interviewed ranging from the Finance Manager, Operation Manager, IT Manager, Human Resources Manager, Recovery Specialist, Software Engineers, Marketing Manager and many more to understand how their processes were integrated into a single software.

However, it is imperative to note that there are lots of references employed to organize observation based on human perception and reasoning, which is referred to as the research paradigm (Kuhn, 1970). In view of the data collected and analyses to determine the conclusion of this research topic, hence, this research can be categorized as a constructivist.

Given the above, this research work has been presented by using a qualitative approach with an emphasis on content and interview report analysis to derive qualitative work. The qualitative research is anchored on the distinct understanding of the methodological traditions of enquiry that evaluate social or human issues. The qualitative research work postulates an empirical view by understanding social issues to describe and understand human behaviour (Babbie (2010).

The population refers to the group of the element that the researcher is interested in generalizing his or her work (Babbie, 2010). According to Vogt, 2007, describe the research population as the population of individuals or data which is interested in making statistical inferences. In this study, the population comprises Senior Managers from Banks, Enterprises with multiple software application, IT director at CRA and Departmental directors.

Literature Review

The concept of ERP came about how business processes can be integrated into enhancing better service delivery, coupled with the globalisation of business trading, become an increasingly important factor for researchers to find a better integration solution. Given the fact that MRP to MRP II before the discovery of ERP in the 90s paved the way for more academic research on its usefulness and how it should be implemented, [5], [6], [7]. Even though big firms such as Dell that spent millions of dollars on ERP failed to implement ERP system [6], it is imperative to note that for a business enterprise to set up an ERP system successfully, must ensure to review and align its business processes in a way integration of all its various business processes can be integrated perfectly, [7].

Since the 1990s, when there is a breakthrough in the ERP platform, several scholars have research on ERP implementation and usefulness. ERP concept and trend, it benefits and disadvantages, its functions, training needs, deployment and much more., can attest to the fact that ERP is not a luxury application but a necessity for all business operations to have an ERP application in facing the global challenge. Some articles have shed light on the fact that ERP help businesses generate prompt information for their clients and meet their customers' needs. ERP can allow business enterprises to integrate all their offices in respective of where they locate [5].

According to [6] and [7], it is evidence that the ERP is a system platform that helps business processes integrated to one data center, the ERP by itself cannot produce productivities. However, human using them can utilize the platform to analyses and redesign ways in the medium to create the productivity needed. Maintaining a good ERP system platform, the company's business processes must be evaluated and

customized in a tracksuit the specific company operation. Hence, one company ERP system may have differed from another, but it all depends on the sector the ERP has been designed for, [6][7]. Figure 1 below gives a clear view of how ERP integrates other departmental functions.
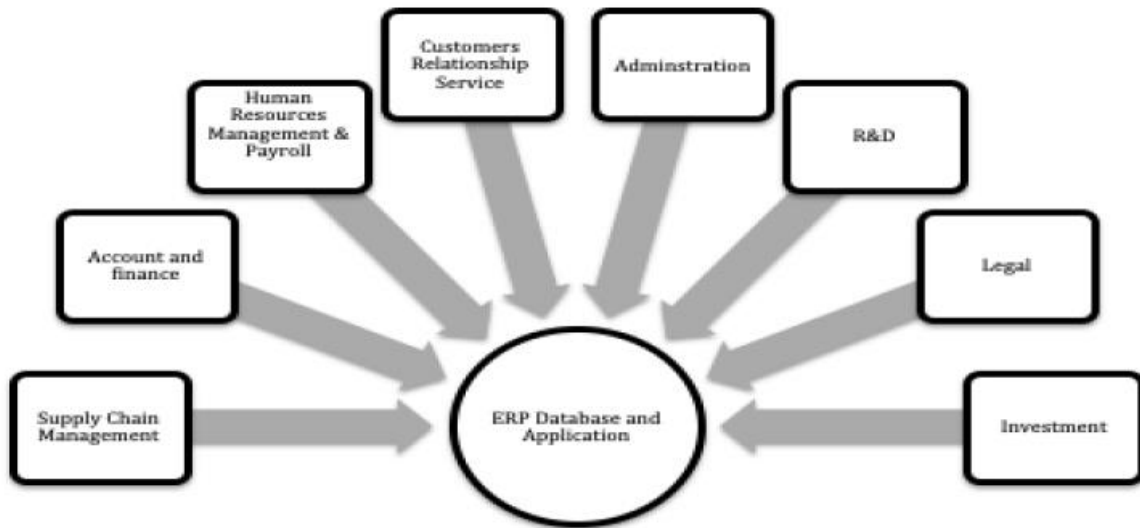

Figure 1. ERP systems integration concept

According to [10], they stated the Gartner Group were the first to introduce the ERP systems that integrates all their departmental processes. The software platform ensures interface between the company's team, and the customers (Swartz & Orgill, 2001). The ERP was initially referred to the ES (Enterprise System) by researchers [11]. Other researchers like Klaus et al. (2000) see ERP System as wholistic packaged solutions of Information System (IS). Another scholar Davenport (1998) defined ERP as an essential strategy to enhance business information for better decision-making. It also, a game-changer for the IS unit to champion business success. Marnewick and Labuschagne (2005) elaborate on the importance of ERP system by abstracted ERP into four sections. The first section of the ERP system handles the integration of all the processes of Finance, Human Resources, Supply Chain Management, Supplier Relationship Management, Customer Relationship Management, Business Intelligence and many more units. The second sections of the ERP platform handle the flow of the process; this deals with the information flow among modules within the ERP platform. The third section addresses the customer mindset, which defines the influence of the ERP system on users, team, and organization. The fourth section is change management that handles the adaptability of ERP system implementation within the organization.

The ERP Trend

During the 60s, ICP (Inventory Control Packages) systems were used, especially for large industries/manufacturing companies to manage their inventories and processes. However, this was not enough to meet the growing need of the manufacturing industries [12]. After that, researchers unearth in the 70s Material Requirements Planning (MRP) system that enables a manufacturing firm to plan their products and parts needed based upon their production timetable. In the 80s manufacturing resources planning (MRP II) was developed to enhance the processes of a manufacturing organization. The advent of ICP to MRP and MRP to MRP II led to the development of ERP (Enterprises Resources Planning) software that integrates all business processes ranging from the account, finance, customer relationship services, inventory, human resources, payroll, and much more, [7].

In this modern-day, there are various types of ERP systems, some, which are off the shelves but can be tailored to the organization needs and others, are customized from scratch based on the organization needs. Most of the organizations used customized ERP, which is designed and developed based on the company business processes and operational model. In general, ERP is a system that integrates and automate all the

business processes in one central database, which makes the workflow effective and efficient at all times.

Executives and managers can easily retrieve information and analyses them quickly to make a prompt decision to enhance the efficacy of the business. For any business to successfully survive in the current globalization trend, should invest more on to information and communication technology (ICT), especially on integrating and automating its business processes such as ERP platform to enhance its business trading and the creation of innovation platform. A case in hand is that one of the local councils (WARDC) in Sierra Leone, has contracted a company (CRA) to customize and integrate all their business processes as a council to effectively manages the overall function of service delivery to the people they govern. This investment has significantly proved to impact and beneficial to the committee as a whole, as they can now generate their demand notices on time as opposed to when they were manually writing them which take almost a year to complete the process of writing and distributing of demand notice. It helps reduces the fraud that used to occur in the days of manual record-keeping or decentralized system.

The current trend of ERP includes cloud storages being included in the development process of an ERP application. The ERP has become a necessity for business success; the cost of ERP platform becomes lower than before its advent, the adaption of EPR has become easier than before. There are more and more ad-on introduce into the ERP system, which makes it dynamic in design [13][14].

Result and Discussions

There are thirty-two (32) respondents that partake in this study. CRA software engineers conducted a server tour to understand how their ERP system work. Directors and Senior managers of major financial institutions were interviewed (See table 1). The local council's officials were also interviewed since they have more complicated tax collections process and several departments. The questionnaire was tailored to the implementation stage of an ERP system and how it can benefit the users. During our discussion with the respondents, they pointed out most of the standard functionalities of an EPR application, how it deployed, and the advantages of having such a system in an organization.

Table 1. List of respondents and industries

Institution	Possition	Industry	Number of Respondents
Sierra Leone Commercial Bank	Director	Banking	4
FiBank	Senior Manager	Banking	3
Ecobank	Senior Manager	Banking	2
Credit Recovery Agency	Directors and Managers	IT and Financial Services	10
UBA	Manager	Banking	1
Central Bank of Sierra Leone	Senior Banking Officer	Banking	1
Apex Bank	Directors and Managers	Banking	3
Union Truct Bank	Manager	Banking	1
Sierra Leone Brewery Limited	Manager	Beverages	1
A A Enterprises	Finance Manager/IT	Furniture	1
Freetown City Council	Senior Officer	Local Government	2
Western Area Rural District Council	Senior Officer	Local Government	1
Bo District Council	Senior Officer	Local Government	1
Bo City Council	Senior Officer	Local Government	1
Total Respondents			32

Sources: Field data report (Sept. 2020)

Figure 2 below shows that 41% of the youths hold critical Information and Technology (IT) positions in Sierra Leone. The data collected shows that most of these respondents are from the financial institution. It also evident that Sierra Leonean youths preferred IT as a career than other careers (CRA report, 2015).
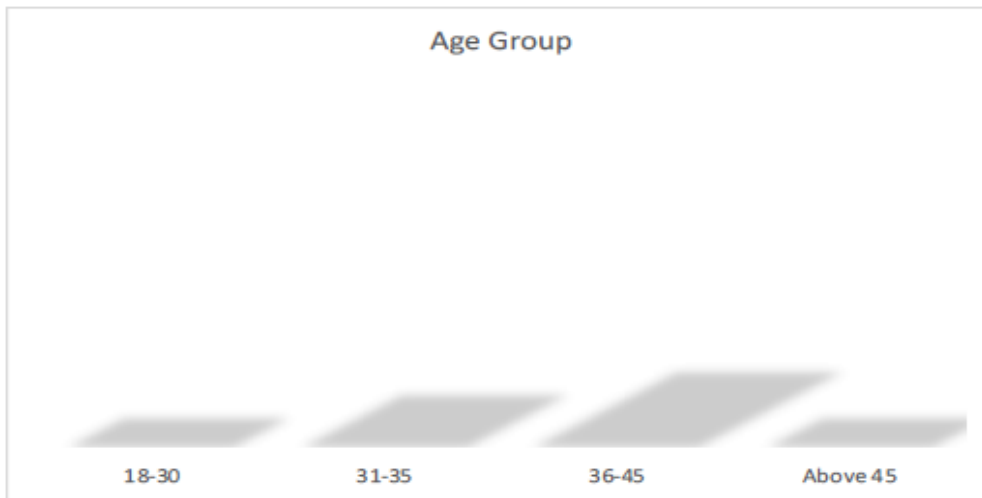

Figure 2. Respondents by age group

Sources: Field data report (Sept. 2020).

Figure 3 below indicates that 78% of men are still in top position in Sierra Leone, and 22% are women. Hence, this is evident that there are gender gaps for top jobs in Sierra Leone (Field data). The number of females holding top IT positions in Sierra Leone has increased by 5% in 2020 when compared to a similar study carried out by CRA in 2014 (CRA report 2015).
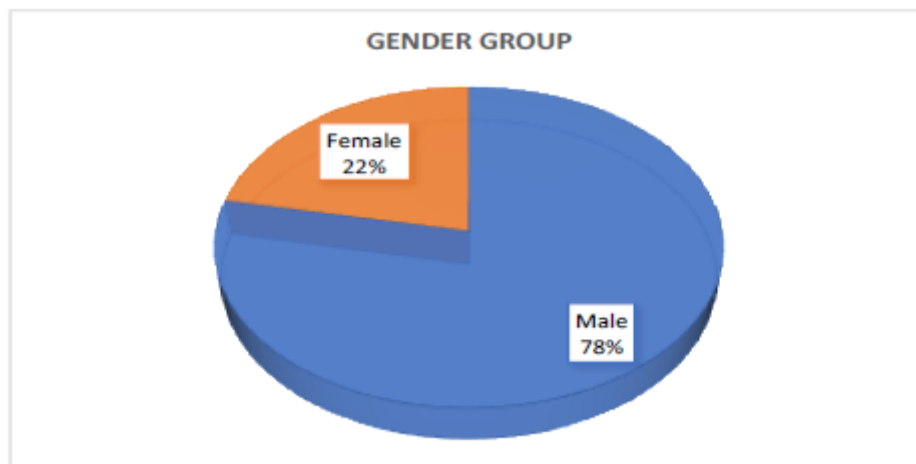

Figure 3. Respondents by Gender group

Sources: Field data report (Sept. 2020)

The table 2 below highlights that the selected population has enough experience in Information and Technology, which 31% has over ten years. Experience in their respective field. It also shows that there is enough human capital in IT related field in Sierra Leone.

Years of Experience		
0-2 yrs	3	9%
3-5 yrs	7	22%
6-10yrs	12	38%
Above 10 yrs	10	31%
	32	

Table 2. Years of experience by respondents

Sources: Field data report

Discussion of User-Friendly is the ERP

98% of the respondent find the ERP application as user friendly. They stated that most of their team activities are collated in a single software and easier for decision-making. They also claimed that the ERP system helps them to spot products that are more profitable and divert their investment options to those products.

Do Enterprises in Sierra Leone Have ERP Platform?

Based on the table below it is evident that only 11% of the businesses in Sierra Leone uses ERP platforms and this set of groups are mainly from the financial sector (banking), 89% that perceived that ERP system is not widely used in Sierra Leone. These respondents claimed that the initial cost to set up an ERP system is very costly in Sierra Leone; hence, the businesses depend primarily on off-the-shelve applications and the Microsoft office application to manage their business information and performance.

Discussion on the implementation process

According to the Director of IT at CRA, the users are connected to the server via ethernet or wireless using routers. It can also connect via LAN (local area network) using cables connectivity. However, they claim that the LAN connective has been proven too expensive for business and currently working on streamlining they product to be deployed wirelessly to reduce the cost of implementation. The CRA engineers stated that the user directly interacts with the system by inputting information and also retrieving data for both internal and external use. 85% of the respondents claimed that they have use ERP platforms in the organization they have worked and stated that the significant implementation stages of an ERP platform are; initiation-develop business case, project scope and implementation strategy, Planning-establish implementation team, determine goals and objectives, establish metrics Analysis and process design-analyses and improve existing processes, map new methods to be adopted by the system, realization-install a base system, customization and system testing, transition-replace the formal structure with the new system, data conversion Operation-monitor to improve system performance and lastly provide continued training and technical support for all users.
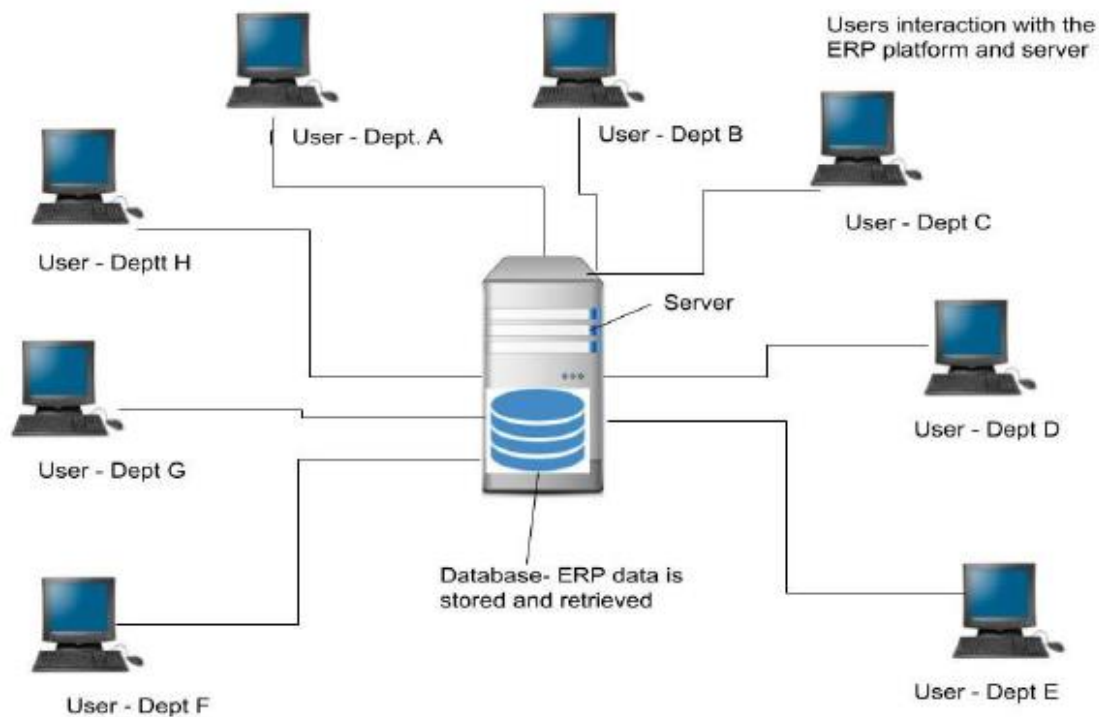
Figure 4. User Interaction with ERP platform

Source: CRA ERP user manual

Recommendation

It is imperatively essential that an ERP system is necessary for every business success especial large organization with several departments and operations. The ERP platform also integrates organizations branches. It is recommended that for better decision making there is need to have an adequate information system to generate accurate information for prompt decision-making, thus making the ERP system as the essential tool in an organization [15], [16], stated that "ERP are comprehensive information system that supports the information needs for all the department in a real-time basis", Therefore, ERP system is the gold standard for business performance and meeting set strategic objectives.

Standard Functionalities of ERP application

The standard function of ERP is to integrate and automate all business processes such as the customer relationship management (CRM), Account and Finance, Human Resources Management (HRM), e-commerce, supply chain management (SCM), business intelligence (BI), asset management (AM), procurement processes (PP), monitoring and evaluation (M&E), operations processes, budgeting and forecasting, knowledge management (KM), store management (SM), and many more (Gil et al. 2009). According to Uwizeyemungu and [4], it is evidence that ERP hinges on three main dimensions, which are (1) technical, (2) organizational and (3) informational. These three dimensions produce integration, real-time and adaptability of business processes using ERP platform.

The Implementation Stages of ERP in a Firm

In order to successfully implement an ERP system in a firm, the following stages should be taken into considerations:

- Analysis of the requirement needs for such a platform: this will help the principal developer to evaluate the personnel required to develop the ERP and the areas to integrate and automate
- The gaps exist: this would enable the ERP developer to evaluate the gaps within the business structure and process and ensure to provide a solution during the development stage of the ERP platform.

- Analysis of the business process: Each business process must be appropriately analyses to ensure that the business concept and operation translates within the ERP platform. It would provide better interrelation between various processes from other departments.
- Discuss with executives and potential users: This is important for the developer to have feedback information from the users themselves as they are going to be the principal executor of the ERP platform. Hence their input in the earlier stage is paramount for the successful implementation of the ERP application.
- Plan the framework of developing a sound and useful ERP software strategically: This is key as it gives the developer an edge to conclude the project in record time and ensure smooth development of the system.
- Selection of the type of ERP to be used and adopted: The is very important as the wrong choice might lead to loss of investment into such project or even not use as intended. It saves much money when the right ERP application platform is selected.
- Training of user to understand how to use and apply themselves in executing the ERP application: There is a great need to train the users of the ERP so that they can be able to adapt and use the ERP application smoothly that in turn bring massive benefit to the organization. It will give confidence to the users as to the use of the application.
- Develop the ERP by integrating and automating the entire business processes: This is the main objective of the project; hence, integration of the business processes require logic, and programming to be able to achieve the intended purpose of the project.
- Deploy the ERP system into a central database server: The stage requires the deployment of the database to the server, hence, there is need to select the right server specification with adequate memory to execute the required command on time. The wrongs server configuration can slow than the execution of the command by the user; hence, become time-wasting for users which may lead to abandoning the entire platform.
- Network the server using LAN or WAN approach which depends on the company needs and areas of operations

- Test the ERP system after deployment before going live; this is to ensure the completeness of the system and give the users a feel of the platform.
- If the test is successful then deploy the ERP live on the server for the user to use it

The Advantage of Having an ERP in a Firm

The benefits of ERP are enormous as it is becoming essential for businesses to have an ERP application to be able to compete with the current market trend and competition. Some of the benefits are: (1) it reduces transaction cost, (2) it provides real-time information, (3) it improves service delivery (4) it gives a company an edge in the market especially with companies without an ERP, (5) it enhances staff efficiency and effectiveness ratio, (6) it helps institution using such application to maximize profit on a real-time basis, (7) it gives the customer advantage to interact with the system during e-transaction and provide the comfort needed to such application. (8) It integrates and automates all business processes making the interaction between departmental possible without movement of staff from on end to the other. (9) It ensures completeness and thoroughness (10) it enhances KM and BI for decision-making [17]. According to [18], elaborated that ERP enhances innovation as research data and information can be generated from one repository making analysis easier for business executives. It is a lot easier to have knowledge management information through the ERP application. It also helps businesses to gather internal and external business intelligence, with the view to overcoming the competitive pressure in the market place. Below are some of the benefits:

1. Acquiring software for each department is costly and time consuming to consolidating the company's annual report. However, the benefit of having an ERP software ensure businesses to use a single software platform that integrates all departments processes. Using ERP systems, the company can cut costs through the insights they gain from their business data and plan better to achieve their goals and objectives

2. One effect of centralizing information for the entire business into one system is that different departments in the enterprise are now connected. As a result, communication

between departments becomes more efficient, and regular sales processes, such as order to cash, etc. are streamlined. For example, if a business integrates their eCommerce with their ERP system, data will automatically be transmitted from the front end to the back end of the company. Hence, it eliminates the need to push data from one operational department to another manually, or one software to another.

3. One of the most considerable benefits of ERP systems is that they give decision-makers a top-down view of the entire business. They have complete visibility about what's going on and can easily see statistics and graphs, all sourced from accurate, real-time data. Dashboards are created to highlight information that is important for decision-making.

4. Top Managers can make an informed decision with the insights from the ERP tools and with a possible suggestion for diversion of investment to a more profitable venture.

5. The ERP platform reduced errors emanated from a human. ERP software assists in eliminating contradictions in data between different departments. Instead, data is transmitted seamlessly from one division to another.

6. With an ERP system, it is easier and quicker for statutory reporting.

Conclusion

It is imperative clearer for businesses to adopt the use of having an ERP that integrates and automate all their business processes to ensure effectiveness and efficiency in service delivery. It is becoming increasingly crucial for the organization to focus more on research and development that lead to innovation in advancing the study of ERP application. Given the above one will safely state that ERP is the solution for businesses to aspire for innovation as the ERP repository can be used as a research center base where information is obtained to research for innovative products and services. It can also be used to analyses customers transaction trends and demand curve, which gives institutions an edge to manoeuvre in a competitive market.

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