Enterprise Resource Planning (ERP): Opportunities, Benefits and Implementation Challenges in Bangladesh

Jaynob Sarker [1]

[1] Assistant Professor, Department of Business Administration, Leading University, Sylhet, Bangladesh.
Email: jaynobsarker@lus.ac.bd

Abstract

Enterprise Resource Planning (ERP) is a software system used by organizations to manage and integrate the core functions like manufacturing, finance, human resources, supply chain, and customer management of their business processes in a unified system which has been proved to be a vital instrument for improving operational efficiency, reducing manual work, enhancing data accuracy and thus facilitates timely and accurate decision-making which help an organization to adapt and craft an appropriate proactive response to evolving challenges and problems of today's changing market trends, rising customer expectations, and growing global competition. With this backdrop, the aim of this study is to know the status of available opportunities that create facilitating conditions for effective ERP implementation in Bangladesh and the resulting benefits of ERP implementation as well as the challenges of ERP implementation in Bangladeshi enterprises. This paper used secondary data sources that include browsing internet databases like Google scholar, emerald, web of science, and research gate to find research papers, articles, and study materials on ERP. The study reveals that supportive policies of government, increasing technological infrastructure, growing IT expertise, financial support from different financial institutions create major opportunities for ERP implementation in Bangladesh. Moreover, improved efficiency, centralized information systems, facilitating better decision-making, automatic process identified as the major benefits of adopting ERP and cost constraint, resource constraint, inadequate IT infrastructure, organizational resistance, customization challenges, vendor dependency are the prime challenges of implementing ERP system in Bangladeshi organizations. Finally, the paper proposes some suggestions to overcome the challenges.

CITATION

COPYRIGHT

Keywords: Enterprise Resource Planning (ERP), Opportunities, Benefits, Challenges, Bangladesh.

1. Introduction

For successfully thriving and harnessing the competitive edge of an organization in the face of today's evolving challenges of dynamic market trends, high customer expectation and intensely growing global competition organization must display the ability to become more agile, efficient and adaptive. In doing so, modern organizations are increasingly adopting ERP systems solutions since it has the ability to foster efficiency collaboration and agility by providing easy and fast access to operational data necessary for timely and informed decisions and company management (Abdulraheem, Abdulla & Mohammed, 2020, Ivanović & Marić, 2021), (Matende &

Ogao, 2013; Winovsky et al., 2023). Moreover, ERP adoption significantly increases profits, reduces expenses, accelerate product development, and improve customer satisfaction (Umble et al., 2002)

The term Enterprise Resource Planning (ERP) describes "the kind of software that businesses utilize to oversee company operations including purchasing, project management, accounting and supply chain management, risk and compliance management" (Faccia & Petratos, 2021). Enterprise performance management, a software that aids in planning, budgeting, forecasting, and reporting on an organization's financial performance, is also included in a full ERP suite (ORACLE, 2021). From both a commercial and an engineering standpoint, an enterprise resource planning (ERP) project is a substantial corporate program. Information can be managed inside an organization using the strong and useful business process management tools included in ERP software. Even though every business and organization in operation today is unique, they all have to deal with the same problem, they need a trustworthy and effective method of storing and accessing information if they want to remain competitive in the modern business climate. ERP solutions are useful in this situation (Chowdhury et al., 2021). ERP is bundled software that helps companies effectively and efficiently manages, coordinate, and employ their resources. By implementing modern technologies, organizations constantly want to remain competitive and enhance their ability to effectively manage their operations and work activities across multiple departments (Shahzadi & Naveed, 2016). ERP systems integrate all business process into a single, comprehensive information system that is accessible to all company personnel. ERP systems are business computer automation tools that let companies talk about information and procedures throughout the entire organization, create and retrieve real-time data, and digitize business processes. Integrating all departments onto a single computer system that meets all of the needs of the company is the primary goal of ERP systems.

Businesses of all sizes and functions commonly use ERP frameworks because the potential benefits are too great to ignore. Companies must set up proper business procedures and effectively exchange data internally with their suppliers, partners, and clients if they want to be leaders in the modern business world (Chowdhury et al., 2021). ERP systems are software applications that are interconnected and give organizations the capacity to manage and automate a range of business processes and operations, including supply chain management, procurement, human resources, manufacturing, and finance. ERP systems are intended to improve decision-making and operational efficiency by streamlining and optimizing company processes, facilitating data sharing and communication between departments, and offering real-time visibility into organizational activities. In order for an organization to profit from these advanced software applications, an ERP system must be implemented successfully. But according to research, ERP installation initiatives frequently have a lower success rate than anticipated, with problems and obstacles popping up at various points along the process.

2. Objectives
The main objective of the study is to focus on the issues of ERP implementation in Bangladeshi organizations through an extensive literature review. However, following are the specific objectives of this study:
- To understand the concept ERP and to explore the opportunities that creates facilitating conditions for ERP implementation in Bangladeshi enterprises.
- To identify the benefits that can be enjoyed by Bangladeshi business enterprises by effective implementation of ERP.
- To address the challenges that hinder ERP implementation in Bangladeshi business enterprises.
- To propose some suggestions to overcome the challenges in the ERP implementation process in Bangladesh.

3. Methodology
This paper being a theoretical review used secondary data sources for finding relevant literature. For that purpose, a desktop survey technique that includes, browsing internet databases like emerald, web of science, Google scholar, and Research Gate has been conducted to find the pertinent research papers, articles, and study materials on ERP, opportunities of ERP implementation, benefits of ERP implementation and the challenges involved in the way of ERP implementation in Bangladeshi organizations.

4. Review of the literature
An ERP system is used to organize and combine data inside a company and amongst companies in the business domain. Given the complexity and cost of ERP, a user with application skills was necessary for its adoption (Kuntum, 2019). Systems for enterprise resource planning (ERP) combine information technology with business processes to create a synchronized collection of procedures, applications, and measurements that cross organizational boundaries (Wier et al., 2007). By building and maintaining a central database of company information, many organizations that use ERP systems attempt to decrease redundancy and inconsistency in data (Poston & Grabski, 2001). The ERP system was not fully utilized to the extent that it could have been. It was frequently applied to financial issues (Odoyo &Ojera, 2020). Numerous other advantages and the significance of ERP systems have also been highlighted by various writers. Businesses that have effectively implemented an ERP system have seen a 30% reduction in inventory expenditures. In contrast, these organizations managed to achieve a fifteen percent reduction in their raw material expenses. Additionally, by utilizing ERP systems, businesses have effectively reduced their production costs, production times and customer delivery times (Lutfi et al., 2022). Since ERP adoption entails business process improvement, the application of best practices, intra-enterprise integration, and inter-enterprise coupling, it is indicative of a creative business strategy. ERP solutions are intended to support the ERP idea by substituting synchronized suites of enterprise-wide applications for the disjointed patchworks of legacy systems seen in commercial organizations.

Productivity gains and quality enhancements in crucial domains like information management, customer service, and product dependability are possible advantages of an ERP system. Therefore, through increases in efficiency and effectiveness, ERP systems are anticipated to improve market value and business performance (Hunton et al., 2003). Because of the substantial changes in the processes employed to record, integrate, and transmit such information, enterprise systems are also profoundly altering the financial accounting landscape. According to (Sutton, 2006) the process of recording transactions can be attributed to particular people, such as assembly line workers, cashiers, and warehousemen who scan bar codes to capture data and initiate the update processes that comprise the basic financial accounting records. AlBar et al. (2014) talked about the advantages, difficulties, development, application, and significance of utilizing ERP within the company. Rahad (2014) put forth a novel approach to ERP system access in relation to international networks. The productivity and profitability of BSRM Steels Limited were assessed by Kabir (2020) in relation to the deployment of Enterprise Resources Planning (ERP). According to the report, BSRM's profitability and productivity both increased dramatically after ERP was implemented. Application of ERP systems improves financial returns and management control systems assist the company in achieving future performance goals than informal forms, according to (Kallunki et al., 2011). ERP systems, according to Sumner (2005), offer a centralized platform that makes it possible to manage essential business operations like manufacturing, customer relationship management (CRM), finance, human resources, procurement, and inventory management. Real-time visibility and cooperation across departments are made possible by this integration, which enhances productivity and decision-making (Wagner, 2009).

Material Requirements Planning (MRP) systems, which were mainly concerned with inventory control and production scheduling, gave rise to the idea of enterprise resource planning (ERP) in the 1960s (Shanks et al., 2010). With the addition of features like financial management, human resources, and sales automation, MRP systems developed into more complete ERP systems over time (Davenport, 1998). With the introduction of fully integrated ERP suites in the 1990s, businesses were able to manage their business processes more comprehensively and achieved a major milestone (Wagner, 2009). Since then, in order to improve their capabilities and adjust to shifting business needs, ERP systems have continued to develop, integrating cutting-edge technologies like cloud computing, artificial intelligence, and machine learning (Laudon and Laudon, 2016). ERP installation initiatives frequently necessitate significant time, resource, and skill inputs, and they may run into resistance from staff members used to the current workflows and systems, according to Nah et al. (2001). Organizations can gain a lot from the use of ERP systems, such as increased competitiveness, better decision-making, and increased operational efficiency (Davenport, 1998). ERP systems save labor costs and increase productivity by standardizing and automating company operations, which also minimise errors and manual labor (Al-Mashari et al., 2003). Additionally, ERP systems give businesses a foundation for innovation and expansion, allowing them to take advantage of new opportunities and adjust to shifting market dynamics (Wagner, 2009). ERP systems are crucial to contemporary businesses since they offer a single platform for managing vital business operations.

5. Putting an ERP system into practice

According to Esteves and Pastor (2000), implementing an ERP system is a difficult task that calls for meticulous planning, coordination, and cooperation amongst many departments and stakeholders. Implementing an ERP system involves several stages that ensure the solution is successfully integrated into the organization's business processes. Here are the key stages of ERP implementation: The first stage is pre-implementation planning. In this stage, there are three major tasks, such as- define business needs, assemble an implementation team and create a budget and timeline. Define business needs and goals means before selecting an ERP system, the organization needs to identify its key business needs and objectives. This involves evaluating current processes, identifying inefficiencies, and setting clear goals for what the ERP system should achieve. The intension to assemble an implementation team is to establish a dedicated team that includes IT staff, key business leaders, department representatives, and possibly external consultants. This team will oversee the entire implementation process. Then create a realistic budget and timeline for the project, considering the costs of software, hardware, customization, training, and ongoing support. The second stage is selection of ERP Software. It includes evaluate vendors, prepare RFP and choose the right ERP system. Based on business requirements, evaluate different ERP vendors and solutions. Look for features that match the company's processes, scalability, and cost. Consider whether the business needs an on-premise or cloud-based ERP solution. Then prepare a Request For Proposal (RFP) document detailing the business's requirements and invite ERP vendors to present their solutions and select the ERP system that best fits the organization's needs. This should include considerations for localization, scalability, industry fit, and vendor support. The third stage is system design and customization. This stage consists of business process mapping, gap analysis and customization. Business process mapping is analyzing and mapping out the existing business processes to determine how they will be handled in the ERP system. This helps in identifying the necessary configurations and customizations. Gap analysis is identifying gaps between the organization's processes and the ERP system's standard functions. Determine whether the system can be customized or if business processes need to be adjusted. Then configure or customize the ERP system based on the specific needs of the organization. This may include modifying workflows, integrating third-party tools, and adjusting user roles. The fourth stage is data migration, comprises of data cleansing, data mapping and test data migration. Data cleansing is ensuring that the data is accurate, complete, and free of duplicates before migrating data into the new ERP system Data mapping means map data from the old system to the new ERP system, ensuring compatibility and consistency. Test

data migration is performing a test migration with a subset of data to ensure everything is transferred correctly and the system processes the data as expected (Sumner, 2005). The fifth stage is testing. It covers unit testing, integration testing and user acceptance testing. Unit testing is test individual components and modules of the ERP system to ensure they work as expected. Integration testing means test the integration between different ERP modules (e.g., finance, HR, supply chain) to ensure seamless data flow and functionality across departments. User Acceptance Testing (UAT) involves end-users in testing to ensure the ERP system meets their needs. This helps identify any issues that need to be resolved before going live. The sixth stage is training which includes end-user training, role-based training and ongoing support. End-user training means Conduct comprehensive training sessions for all employees who will use the ERP system. This includes providing detailed documentation and hands-on practice to help users become comfortable with the new system. Role-based training means tailor training sessions to different user roles (e.g., managers, finance staff, warehouse staff) to ensure each group understands the relevant functions they will be using. Ongoing Support includes provide continuous learning opportunities for users, including follow-up training sessions and access to help resources. The seventh stage is go-live and deployment. It covers go-live planning, cutover strategy and system monitoring. Go-live planning means choose a date for the go-live and create a detailed deployment plan. This includes assigning responsibilities, ensuring support staffs are on hand, and preparing for any potential issues. Cutover strategy is determining how the organization will transition from the old system to the new ERP system. This could be a big bang (full deployment at once) or a phased approach (deploying modules or locations gradually). The intension of system monitoring is closely monitoring the system for any issues during the go-live phase. Ensure that support is available to quickly resolve any problems that arise. The eighth stage is post-implementation support and optimization which includes continuous support, system optimization, upgrade and maintenance. Continuous support means provide post-go-live support to resolve any issues users encounter and to ensure that the ERP system is functioning correctly. This could involve a dedicated help desk or support team. The objective of system optimization is after the ERP system has been in use for some time, review its performance and make necessary adjustments. This could include fine-tuning configurations, enhancing system features, or adjusting business processes to improve efficiency. The task upgrades and maintenance means plan for future updates and maintenance to keep the ERP system up to date with new features, security patches, and performance enhancements. The last stage is evaluation and review that covers post-implementation review, gather feedback and continuous improvement. Post-implementation review includes conduct a review to evaluate the success of the ERP implementation, measure whether the system is meeting the original goals, such as improving efficiency, reducing costs, or increasing data accuracy. Then collect feedback from users to understand their experience with the system and identify areas for further improvement. Continuous improvement means use the feedback and evaluation results to continuously improve the ERP system and adapt it as the business evolves. By following these stages, businesses can minimize risks and ensure a successful ERP implementation that delivers long-term value.Strong leadership, clear communication, and ongoing participation from all stakeholders are necessary for a successful ERP deployment (Esteves and Pastor, 2000). Businesses are more likely to succeed and get the full rewards of their ERP investment if they devote time and resources to careful planning and preparation (Nah et al., 2001).

6. Suppliers of ERP software

A small number of well-known manufacturers control the majority of the ERP software market. These vendors provide whole suites of ERP systems that are suited to various industries and organizational sizes (Sharma and Yetton, 2003). Among the top ERP suppliers are Infor, Microsoft Dynamics, SAP, and Oracle. To satisfy the various needs of their clientele, each provides a variety of goods and services (Sharma and Yetton, 2003). SAP S/4HANA and Oracle Fusion Cloud are the two most significant ERP systems on the market, according to a comparison of the top 10 ERP systems (Selecthub, 2024). The primary focus of ERP system suppliers is on efficiently

implementing an economy of scale strategy to get cost advantages through expanding their operations and offering more services to their clientele.

Figure 1. The Top 10 ERP System Vendors, **Source:** The Selecthub (2024)

7. Supportive environment that creates opportunities for implementing ERP in Bangladesh

The success of ERP implementation in Bangladesh largely depends on the supportive environment that businesses, the government, and other stakeholders create to foster digital transformation. Below are the key components of a supportive environment that creates opportunities for ERP implementation in the country:

The first key component of supportive environment that creates opportunities is Government Support and Policies. Here the sub components are vision of digital Bangladesh, tax incentive for IT investment and regulatory compliance. Digital Bangladesh vision means that the Government of Bangladesh has been promoting the Digital Bangladesh initiative, which encourages the adoption of digital solutions, including ERP, in both public and private sectors. This initiative is creating an environment conducive to the digital transformation of industries. A tax incentive for IT investments includes the government offers tax incentives and subsidies to companies investing in technology and automation, including ERP systems. This makes it financially viable for businesses to adopt ERP solutions. Regulatory compliance means Government regulations for transparency, data security, and compliance in sectors like finance, healthcare, and manufacturing drive the need for ERP systems. By using ERP, businesses can more easily adhere to these regulations. The second key component is increasing technological infrastructure consists of improved internet connectivity, data centers and cloud infrastructure, mobile and remote access. Over the past decade, Bangladesh has significantly improved its internet infrastructure, with affordable high-speed broadband and mobile internet. This provides the foundation for cloud-based ERP solutions, which rely on reliable internet connections for smooth operations. Then the development of local data centers and cloud infrastructure makes it easier for businesses to adopt ERP systems without the need for heavy on-premises hardware. Local cloud service providers are also emerging, offering affordable hosting for ERP solutions. Mobile connectivity improvements allow ERP systems to offer mobile access to real-time data, making it easier for companies to implement ERP in remote areas and manufacturing plants. The third key component of supportive environment that creates opportunities is growing IT expertise and workforce. It includes some sub components- availability of skilled IT professionals, local ERP vendors, training and capacity building. Bangladesh's growing IT sector and its increasing focus on technical education have produced a pool of IT professionals who can manage, customize, and maintain ERP systems. This growing talent pool provides local expertise to assist in ERP implementation and support. Several local IT firms in Bangladesh have developed ERP solutions tailored to the needs of Bangladeshi businesses. These firms understand the local market, regulatory environment, and business culture, which make ERP implementation smoother. Universities and technical institutions are offering courses on ERP and business process management, helping businesses find trained professionals to manage ERP systems. Training programs offered by ERP vendors also enhance the skills of employees within organizations. The fourth key component is business environment and market demand that covers increased

demand for automation, global market integration and SME growth. As businesses in Bangladesh face rising competition, especially in sectors like textiles, manufacturing, retail, and logistics, the demand for automation and integrated management systems like ERP is growing. Many Bangladeshi companies, especially in the export-driven garment and textile sectors, are adopting ERP to meet international market standards and streamline global supply chains. ERP helps them stay competitive in the global market by ensuring compliance with international regulations. The small and medium-sized enterprises (SMEs) sector is expanding rapidly, and many are looking to ERP systems to scale operations efficiently. This sector forms a substantial portion of Bangladesh's economy and represents a major opportunity for ERP providers. The fifth key component of supportive environment that creates opportunities is financial support and investment. ERP implementation can be costly, but many businesses are gaining access to financing options such as loans and grants from financial institutions and development banks. The availability of these funds makes it easier for businesses to invest in ERP systems. Bangladesh's growing startup ecosystem, particularly in the tech and IT space, is also driving ERP adoption. ERP startups are receiving funding from venture capitalists, enabling innovation in the field and providing cost-effective solutions tailored for local businesses. The sixth key component is cultural shift towards digitalization. More businesses in Bangladesh are recognizing the importance of data-driven decision-making, operational efficiency, and process automation. This cultural shift is making organizations more receptive to ERP systems and digital solutions. As businesses embrace digital tools, employees are becoming more tech-savvy, which is crucial for the successful adoption and use of ERP systems. This shift is supported by increasing training and awareness around the benefits of ERP. The seventh key component is support from different industry associations which creates opportunities for business. Associations such as the Bangladesh Garment Manufacturers and Exporters Association (BGMEA) and the Federation of Bangladesh Chambers of Commerce and Industry (FBCCI) are actively promoting digital tools like ERP to enhance industry competitiveness. These organizations offer seminars, workshops, and consultations on ERP adoption. The seventh key component is increased awareness of cyber security among people. As ERP systems handle sensitive business data, the rising awareness of cyber security and data protection laws in Bangladesh encourages businesses to invest in secure, robust ERP solutions. This trend is driving the demand for ERP systems with integrated security features. The ninth key component of supportive environment that creates opportunities is ERP vendor ecosystem. Global ERP giants like SAP, Oracle, and Microsoft Dynamics have made their presence felt in Bangladesh, offering customized ERP solutions for large enterprises and industry-specific needs. These global ERP providers often collaborate with local partners and resellers, ensuring that businesses in Bangladesh receive localized support, training, and customization services. The environment for ERP implementation in Bangladesh is growing more supportive as the country continues its journey toward digitalization. With government backing, improved infrastructure, an expanding IT workforce, and increasing business demand for automation, Bangladesh is becoming an ideal environment for ERP adoption. However, addressing challenges such as cost and change management will further accelerate this transformation.

8. Benefits of ERP on Business

An ERP (Enterprise Resource Planning) system can bring numerous advantages to business organizations. Winovsky et al. (2023) state that departmental integration; enhanced financial management efficacy and efficiency, enhanced information precision and correctness, and enhanced oversight and control to reduce errors and data manipulation are all benefits of ERP implementation. The company's business processes were greatly improved with the Accurate ERP system.

ERP systems streamline business processes by automating repetitive tasks like order processing, inventory management, and payroll. This reduces manual work, increases accuracy, and allows employees to focus on more value-added activities. It centralizes all business data in a single system, providing easy access to real-time information across departments. This ensures that

everyone is working with the same data, reducing errors and improving decision-making. With ERP, businesses can generate comprehensive reports on various aspects of operations (sales, finance, inventory, etc.). This helps in tracking performance, identifying trends, and making informed strategic decisions based on accurate data. It integrates different business functions (finance, HR, supply chain, etc.) into one platform. This encourages better collaboration among departments, breaking down silos and fostering more effective communication.

ERP systems help businesses stay compliant with regulatory requirements by tracking changes in financial reporting standards, tax laws, and other regulations. Built-in compliance features help ensure that the organization adheres to industry standards. As a business grows, an ERP system can scale to accommodate increased operations and users without losing efficiency. It can adapt to new business processes, markets, or geographies, making it a flexible solution for expansion. By improving efficiencies and reducing manual processes, ERP systems can lead to cost savings in the long term. It eliminates redundancies, reduces delays, and optimizes resource use, leading to improved profitability. ERP systems provide real-time data on inventory levels, order status, and supply chain activities. This enables better inventory control, demand forecasting, and supplier management, reducing stock-outs or excess inventory. By providing employees with accurate and real-time information about orders, shipments, and customer data, ERP systems enable better customer service. Faster response times and more accurate information lead to increased customer satisfaction. ERP systems also have built-in security features that protect sensitive business data. Centralized data management ensures that the organization can apply uniform security policies and control access to information, reducing the risk of data breaches.

ERP systems consolidate financial information from across the organization, providing a clear view of financial performance. This helps in budgeting, forecasting, cash flow management, and improving overall financial health. Since ERP systems provide real-time data, managers and executives can make decisions based on up-to-date information. This leads to quicker and more effective responses to changing market conditions or operational challenges. On the other hand, many ERP systems offer customizable modules that can be tailored to meet specific business needs. This flexibility ensures that the system can evolve with the business as it grows or changes direction. ERP systems can also integrate international operations, providing support for different languages, currencies, tax systems, and regulatory requirements. This helps in managing global business efficiently. These advantages can significantly improve the operational efficiency and strategic decision-making of business organizations, leading to long-term success and competitiveness.

10. EPR in Bangladesh
10.1 Bangladeshi ERP Implementation Environment
Although the Enterprise Resource Planning system is being implemented at a rapid pace, the majority of this growth can be seen in developed countries with highly competitive business environments, rapid financial development, solid information technology maturity, and strong management commitment. However, although still far behind affluent nations, the spread of ERP deployment in developing countries is increasing. The United States holds 66 percent of the worldwide ERP market, followed by Europe with 22 percent and Asia with barely 9 percent. However, due to economic expansion, Asia is seeing a faster rate of ERP adoption; as a result, leading ERP companies have made expanding Asia and Latin America their top priorities. Nowadays, the majority of small and medium-sized companies are putting the systems in place to realize the operational efficiency of the market. Furthermore, numerous ERP providers have tailored their ERP platforms to capture the rapidly expanding market in this domain. South East Asia is not an exception to this rule. Even though a large number of businesses in Bangladesh have implemented or are currently implementing enterprise systems, there is no trustworthy source to confirm their exact numbers, and the research failed to identify any previous studies that specifically addressed this issue in this context. However, it's likely to imagine the rise in

execution among various businesses applying or using the platform, the benefits expected, and pertinent issues faced by the companies who have implemented or are still in the process of execution based on the website advice of the leading ERP vendors and in the regional partners in this area. Administration interviews, site information, news announcements from ES system sellers, and execution organizations show that many large organizations already use ERP systems from leading ERP suppliers like SAP, AXE, and Oracle, which are maintained by their local partners. Additionally, a number of organizations will make use of ERP strategies created, implemented, and managed by regional software providers.

ERP systems are currently being used by a wide range of industries, including large multinational company subsidiaries, neighborhood associations, textile companies, government and semi-government organizations, leasing companies, telecommunication companies, tourism companies, and the knit and clothing industries. It has occasionally been observed that many companies have deployed their ERP systems without carefully considering how well they will serve the company, when bespoke applications would be more appropriate than integrated ERP systems. Davenport noted that this was an important factor to take into account for successful implementation. The dream of integration could easily turn into a nightmare if businesses hurry to implement a system without having a clear understanding of the implications for their own operations. This system's logic might conflict with company logic, and its implementation collapse, wasting enormous sums of money and creating a great deal of disruption. Additionally, the machine will weaken important sources of competitive benefits, impeding the provider. Within some large-scale associations, or groupings of businesses, the management is ignorant of the machine and isn't even familiar with the specific function that it will provide for their own business.

Because of this, they chose to buy it without first taking into account the company's policies and requirements. As a result, the execution process frequently proceeds without the necessary planning and is thus far less effective than it could be. They don't seem to be thinking that this technology will help them achieve their strategic goal of giving their business a competitive edge. One of the elements for successful execution that is frequently cited is the best management participation, as seen in Finney and Corbett's table of important success criteria. However, a significant portion of the management community views it as a technological artifact rather than a management tool for gaining a competitive edge, to be handled exclusively by the IT staff within their own organization. Numerous letters and interviews with directors reveal that they failed to accurately take into account a number of important crucial success elements during the decision-making process. Many of them lack any precise idea about what they would do when the project is over, which could be three decades after it started. Investors frequently complained that the company's software expenditure was beyond budget and that the employees using the system on a daily basis were not receiving enough training. Furthermore, according to the stakeholders, the alleged benefits that ERP vendors had promised have not yet materialized in a number of instances. Thus, the gap between the projected benefits and reality is widening due to inadequate understanding of the critical elements of ERP adoption. But it should be remembered that a copycat approach to a western model of execution won't work because of the contextual issues covered in the paragraph that follows, including telecom infrastructure, economic development, business environments, civilization, and IT maturity. In developing nations like Bangladesh, a major obstacle to effective implementation of ERP system is careful analysis of the problems.

10.2 Challenges of ERP Implementation in Bangladeshi Enterprises
Implementing Enterprise Resource Planning (ERP) systems in Bangladeshi organizations presents several challenges. These challenges are: Firstly, ERP systems involve substantial initial investment in software, hardware, and consultancy fees, which can be a significant barrier for many Bangladeshi organizations, especially small and medium enterprises (SMEs). Apart from the setup cost, there are ongoing expenses like maintenance, updates, and training, which

organizations may struggle to afford. Secondly, there is a lack of local professionals with adequate ERP implementation and management expertise. Organizations often need to rely on foreign experts, which adds to the cost and complexity. In these cases, ERP systems are developed with global practices in mind, which may not align well with the specific needs of Bangladeshi businesses. Customization is often required, which can be both time-consuming and expensive. Thirdly, cultural and organizational resistance is another challenge in implementing ERP system. Employees and management may resist the transition to ERP systems due to fear of job displacement, disruption of existing workflows, or reluctance to adopt new technologies. In some cases, management may not fully understand the benefits, leading to half-hearted support or underinvestment. Fourthly, implementing an ERP system can take months or even years, depending on the size and complexity of the organization. This prolonged process may disrupt regular business operations.

Fifthly, data management is another challenge in implementing ERP system. Moving from legacy systems to an ERP system requires proper data migration, which is often fraught with inaccuracies or incomplete data. Inconsistent or poor-quality data hampers the effectiveness of the ERP system. At the same time organizations may also have concerns about data security, particularly when sensitive financial and operational data are involved. Businesses in Bangladesh can have trouble putting strong data security measures in place to guard against hacks and illegal access. Unauthorized access or data breaches can have severe consequences. To maintain confidentiality, organizations may practice some security measures like-robust data encryption, access control and monitoring mechanisms. If these issues are not properly monitored, then the success of ERP may be hindered. Sixthly, lack of awareness and understanding of ERP benefits is another challenge. Many organizations, particularly SMEs, may not be fully aware of the potential benefits ERP systems can bring in terms of efficiency, scalability, and data-driven decision-making and the ultimate result is unsuccessful projects. Seventhly, the availability of ERP vendors and support systems in Bangladesh is limited which creates a challenge. Organizations often become highly dependent on a few vendors that leads to increasing costs and limiting flexibility. Adequate post-implementation support is crucial for ensuring long-term success, but this is often lacking from vendors operating Bangladesh. By addressing these challenges through strategic planning, capacity building, and strong leadership commitment, Bangladeshi organizations can overcome many of the barriers to successful ERP implementation.

10.3 Recommendations

To improve the convenience of ERP deployment in Bangladesh, several key recommendations can be considered. These focus on addressing the unique challenges faced by businesses in the country, such as technological infrastructure, cost concerns, and the need for skilled resources. Firstly, IT infrastructure should be enhanced. Reliable and high-speed internet access is critical for cloud-based ERP solutions. The government and private sector should invest in expanding broadband infrastructure, particularly in rural areas, to ensure stable connections for businesses of all sizes. Investment in host cloud ERP systems will reduce latency, improve data security, and lower costs associated with using international data centers. Secondly, government can offer tax breaks or subsidies for businesses adopting ERP systems, especially small and medium-sized enterprises (SMEs) that may struggle with the high initial cost of ERP deployment. Government may offer ERP training programs to develop skilled professionals who can manage ERP implementation and maintenance, reducing reliance on expensive foreign expertise. There are some ERP software which are commonly used in Bangladesh, such as- Pride ERP, SAP Business One, Oracle NetSuite, Microsoft Dynamics 365, Odoo, Epicor ERP, Infor ERP, NetSuite etc. Thirdly, businesses should focus on SME-friendly and cloud based ERP solutions. Develop ERP systems tailored to the specific needs of small and medium enterprises (SMEs), with simpler modules and pricing plans. ERP vendors should focus on cost-effective, scalable solutions to make ERP more accessible to smaller businesses. Promote cloud-based ERP systems that have lower upfront costs compared to traditional on-premise solutions. This would make it easier for SMEs to deploy ERP

without large capital investment. Fourthly, development of local vendor and create partnership with international providers are significantly recommended in Bangladesh. Supporting the growth of local ERP providers can lower costs, improve support services, and customize solutions for the Bangladeshi market. This would also boost the local tech industry and create jobs. At the same time promote partnerships between local IT firms and international ERP vendors to localize ERP solutions according to the specific regulatory and business environment in Bangladesh. Fifthly, ERP systems should be customized to align with local business practices, language, and regulatory requirements (e.g., tax laws, labor regulations). Vendors should invest in creating localized versions of their ERP software for easier adoption by Bangladeshi businesses. The sixth recommendation is to conduct awareness campaigns to educate business owners and decision-makers about the long-term benefits of ERP systems in terms of operational efficiency, cost savings, and competitive advantage and also showcase success stories from Bangladeshi businesses that have successfully implemented ERP systems. This will help overcome resistance by illustrating the practical benefits in a local context. The seventh recommendation is to offer flexible financing models to the businesses. ERP vendors can offer flexible payment plans or installment-based pricing to help businesses manage the costs of implementation over time. If vendors emphasize on strong data protection measures, it will encourage businesses to adopt cloud ERP solutions. Developing local data centers with compliance to international security standards can help businesses feel more secure about adopting cloud-based ERP systems. Vendors also ensure that ERP systems comply with local laws on data privacy and security to build trust among businesses. The last recommendation is vendors should provide continuous post-deployment support, including training, troubleshooting, and system updates. Having local support teams can help businesses feel more confident in resolving any ERP-related challenges. ERP systems should be designed with user-friendly interfaces to reduce the learning curve for employees, especially in businesses that may not have high levels of technical expertise. By implementing these recommendations, Bangladesh can enhance the convenience and appeal of ERP deployment, leading to wider adoption and improved operational efficiencies for businesses across various sectors.

11. Conclusion

ERP systems are essential for modern businesses to optimize their workflows, boost productivity, and maintain their competitiveness in the fast-paced corporate world. ERP solutions give businesses a centralized platform to manage essential company operations, which helps them make better decisions, collaborate better, and innovate more. ERP systems also streamline operational procedures, combine various corporate departments, and offer real-time insights into organizational activity. These systems provide a centralized platform that helps with strategic planning and enables effective resource management. But putting an ERP system into place is a complex process that calls for careful planning, strong project management, and efficient change management. To guarantee successful implementation, organizations need to address issues like resource allocation, complexity of data movement, and reluctance to change. Emerging trends such as cloud-based deployment, mobile accessibility, block chain adoption, Internet of Things (IoT) connectivity, integration with artificial intelligence (AI) and machine learning (ML), enhanced user experiences and industry-specific solutions are influencing the direction of ERP systems. Some barriers of adopting AI in Bangladesh are-lack of technical expertise, high implementation costs, regulatory challenges, and resistance to change among employees and management. Cultural factors and limited awareness of AI's potential benefits exacerbate these challenges. Security issues may create barriers in adopting these emerging trends including AI. Since ERP systems continue to influence how businesses run and prosper in the digital age, it is imperative that students preparing for professions in business, technology, or consulting understand the foundations of these systems. The ERP is really difficult to adopt in Bangladesh. However, we are optimistic that a large number of businesses have already integrated the ERP system into their operations. Organizations will see an increase in business as soon as they comprehend the benefit. It is difficult to picture a company or group of enterprises

in the far future operating without an ERP system. Several software companies in Bangladesh create ERP systems that are well-liked in the local market. I hope this industry grows and inspires more of our corporate entities to use ERP. This study has provided valuable insights into the utilization of Enterprise Resource Planning (ERP) systems in Bangladesh. ERP is being adopted at a quick pace by a variety of industries, including government, semi-government, and non-government sectors. Most companies are showing interest in implementing ERP systems. This study offers a foundation for further research and practical guidance for organizations in Bangladesh. However, apart from many possibilities and benefits, there are still some challenges in future ERP. As the future ERP would be completely in cloud servers, there is always a threat of breaching security systems. Therefore, a strong cyber security system for the ERP architecture has been found to be the subject of future concerns for ERP researchers and respective stakeholders. This article strongly recommends more research on this topic. In conclusion, the dynamic nature of ERP systems implementation in businesses calls for a continuous and collaborative effort from practitioners, researchers, and policymakers. By recognizing and addressing the challenges highlighted in this study, stakeholders can contribute to the development of more resilient, efficient, and sustainable ERP implementations in the global business landscape.

References:
Abdulraheem, A. S., Abdulla, A. I., & Mohammed, S. M. (2020). Enterprise resource planning systems and challenges. *Technology Reports of Kansai University, 62*(4), 1885-1894.
AlBar, A. M., Hddas, M. A., &Hoque, M. R. (2014). Enterprise Resource Planning (ERP) Systems: Emergence, Importance and Challenges. *The International Technology Management Review*, *4*(4), 170. https://doi.org/10.2991/itmr.2014.4.4.1
Al-Mashari, M., Al-Mudimigh, A. and Zairi, M. (2003). Enterprise resource planning: A taxonomy of critical factors. *European Journal of Operational Research*, 146 (2), 352-364.
Chowdhury, M. S. A., Rahman, M. T., Shahabuddin, A. M., Hassan, M. R., &Chowdhury, M. S. R. (2021).Implementation of enterprise resource planning (ERP) in Bangladesh-opportunities and challenges. *Int. J. Bus. Manag*, *16*(11), 1-11.
Davenport, T. H. (1998). Putting the enterprise into the enterprise system.*Harvard Business Review*, 76(4), 121-131.
Esteves, J. and Pastor, J. (2000) Enterprise resource planning systems research: An annotated bibliography. *Communications of the Association for Information Systems*, 4(1), 1-52.
Hunton, J. E., Lippincott, B., &Reck, J. L. (2003). Enterprise resource planning systems: Comparing firm performance of adopters and non-adopters. *International Journal of Accounting Information Systems*, 4(3), 165–184.
Kabir, M. R. (2020). Impact of ERP Implementation on Productivity and Profitability: An Empirical Study on the Largest Bangladeshi Steel Manufacturer. *International Journal of Entrepreneurial Research*, *3*(4), 88-94.
Kallunki, J., Laitinen, E. K., &Silvola, H. (2011).Impact of enterprise resource planning systems on management control systems and firm performance.*International Journal of Accounting Information Systems*, *12*(1), 20–39. https://doi.org/10.1016/j.accinf.2010.02.001
Kuntum, C. (2019). Effect of implementation of enterprise resource planning system on quality of accounting information. *Russian Journal of Agricultural and Socio-Economic Sciences*, *87*(3), 15-20.
Laudon, K. C., &Laudon, J. P. (2004). *Management information systems: Managing the digital firm*. Pearson Education.
Lutfi, A., Alshira'h, A. F., Alshirah, M. H., Al-Okaily, M., Alqudah, H., Saad, M., Ibrahim,N., &Abdelmaksoud, O. (2022). Antecedents and impacts of enterprise resource planning system Adoption among Jordanian SMEs.*Sustainability*, 14(6), 3508.
Matende, S., & Ogao, P. (2013). Enterprise Resource Planning (ERP) System Implementation: A Case for User Participation. *Procedia Technology*, *9*, 518–526. https://doi.org/10.1016/j.protcy.2013.12.058
Nah, F. F. H., Lau, J. L. S. and Kuang, J. (2001). Critical factors for successful implementation of enterprise systems. *Business Process Management Journal*, 7(3), 285-296.

Nasution, F., Puspitasari, W., &Saputra, M. (2020, June).Automation financial processing in account receivable for integrated hospital system using ERP and quickstart approach.In *Proceedings of the 6th International Conference on Frontiers of Educational Technologies* (pp. 204-211).

Nwankpa, J. K., &Merhout, J. W. (2020).Exploring the effect of digital investment on IT innovation. *Sustainability*, *12*(18), 7374.

Odoyo, C., &Ojera, P. (2020). Impact of Top Management Support on Accounting Information System: A Case of Enterprise Resource Planning (ERP) System. *Universal Journal of Management*, 8(1), 12-19. https://doi.org/10.13189/ujm.2020.080102

ORACLE.(2021). Oracle | Cloud Applications and Cloud Platform.https://www.oracle.com/

Poston, R., &Grabski, S. (2001). Financial impacts of enterprise resource planning implementations. *International Journal of Accounting Information Systems*, 2(4), 271–294. https://doi.org/10.1016/S1467-0895(01)00024-0

Rahad, K. A., Ahmed, F., & Al Mamun, S. (2014, April).A new initiative for ERP system architecture with mobile cloud aspects of Bangladesh.In *2014 International Conference on Electrical Engineering and Information & Communication Technology* (pp. 1-4).IEEE.

Rajapakse, J., &Seddon, P. (2005, August). ERP adoption in developing countries in Asia: a cultural misfit. In *28th information systems seminar in Scandinavia, Kirstiansand* (pp. 6-9).

Selecthub (2024) Top 10 ERP-Systems, Link: https://www.selecthub.com/c/erp-software.

Shahzadi, M., &Naveed, M. (2016). Impact analysis of ERP trainings on organizational employee performance: A corporate sector study. *International Review of Management and Business Research*, *5*(4), 1434.

Shanks, G., Parr, A., and Hu, B. (2010).Mining ERP data for process improvement.*Information Systems Frontiers,* 12(3), 281-297.

Sharma, R. and Yetton, P. (2003).The contingent effects of management support and task interdependence on successful information systems implementation.*MIS Quarterly*, 27(4), 533-555.

Sumner, M. (2005).Enterprise resource planning. Upper Saddle River, NJ: Prentice Hall.

Sutton, S. G. (2006). Enterprise systems and the re-shaping of accounting systems: A call for research. *International Journal of Accounting Information Systems*, *7*(1), 1–6. https://doi.org/10.1016/j.accinf.2006.02.002

Umble, E. J., Haft, R. R., & Umble, M. (2002). Enterprise resource planning: Implementation procedures and critical success factors. *European Journal of Operational Research*, *146*(2), 241–257. https://doi.org/10.1016/s0377-2217(02)00547-7

Wagner, B. (2009). Enterprise resource planning (ERP)—A brief history.*Journal of Organizational Computing and Electronic Commerce*, 19(3), 197-209.

Wier, B., Hunton, J., &HassabElnaby, H. R. (2007). RETRACTED: Enterprise resource planning systems and non-financial performance incentives: The joint impact on corporate performance. *International Journal of Accounting Information Systems*, 8(3), 165–190. https://doi.org/10.1016/j.accinf.2007.05.001

Winovsky, M., Febriyani, F., Tan Peiwen, S., Celia Natalia, S., & Suhardjo, I. (2023). SEIKO: Journal of Management & Business Sistem Enterprise Resource Planning (ERP) pada PT Maju Bersama Jaya. *SEIKO: Journal of Management & Business*, *6*(1), 636–649. https://doi.org/10.37531/sejaman.v6i1.3096

Wulandari, A. R., Arvi, A. A., Iqbal, M. I., Tyas, F., Kurniawan, I., & Anshori, M. I. (2023). Digital Hr: Digital Transformation In Increasing Productivity In The Work Environment. *Journal Publikasi Ilmu Manajemen*, *2*(4), 29-42.

Published by