

The impact of SAP implementation on financial management effectiveness: A case study of occidental of Algeria LLC

تأثير تطبيق أسلوب SAP على فعالية الإدارة المالية:

دراسة حالة لمؤسسة Western Algeria SARL

L'impact de la mise en œuvre de SAP sur l'efficacité de la gestion financière:

Une étude de cas de la SARL occidentale d'Algérie

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Abstract:

In today's fast-paced and increasingly competitive business environment, organizations are constantly seeking ways to enhance their financial management processes to gain a competitive edge. Enterprise Resource Planning (ERP) systems have emerged as powerful tools that integrate various business functions and provide a comprehensive solution for effective management across different departments. One prominent player in the ERP market is SAP (Systems, Applications, and Products in Data Processing), which offers a range of software solutions tailored to meet the diverse needs of organizations worldwide. This study investigated the impact of SAP ERP implementation on effective financial management.

Key words: Enterprise resource planning system, Financial management, Effective management, SAP.

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ملخص:

في بيئة الأعمال التنافسية السريعة والمتزايدة، تبحث المنظمات باستمرار عن طرق لتحسين عمليات الإدارة المالية من أجل اكتساب ميزة تنافسية. ظهرت أنظمة تخطيط موارد المؤسسات (ERP) كأدوات قوية تعمل على دمج وظائف الأعمال المختلفة وتقديم حل شامل للإدارة الفعالة عبر مختلف الإدارات. SAP هو أحد المنافسين البارزين في سوق ERP (أنظمة، تطبيقات ومنتجات معالجة البيانات)، حيث يقدم مجموعة من الحلول البرمجية المصممة لتلبية الاحتياجات المتنوعة للمنظمات في جميع أنحاء العالم. تناولت هذه الدراسة تأثير تطبيق SAP ERP على الإدارة المالية الفعالة.

الكلمات المفتاحية: نظام تخطيط موارد المؤسسات، الإدارة المالية، الإدارة الفعالة، SAP.

Résumé:

Dans l'environnement commercial moderne, qui est de plus en plus rapide et compétitif, les organisations cherchent constamment des moyens d'améliorer leurs processus de gestion financière afin d'obtenir un avantage concurrentiel. Les systèmes de planification des ressources d'entreprise (ERP) sont apparus comme des outils puissants qui intègrent diverses fonctions commerciales et fournissent une solution complète pour une gestion efficace dans différents départements. Un acteur important sur le marché des ERP est SAP (Systèmes, Applications et Produits pour le Traitement des Données), qui propose une gamme de solutions logicielles adaptées aux besoins variés des organisations du monde entier. Cette étude a examiné l'impact de la mise en œuvre de SAP ERP sur la gestion financière efficace.

Mots clés: Système de planification des ressources d'entreprise, Gestion efficace, SAP.

Plan:

Introduction

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Introduction:

This paper aims to investigate the impact of SAP ERP implementation on financial management effectiveness within organizations. Financial management plays a critical role in organizations, encompassing a wide range of activities, such as financial planning, budgeting, accounting, and reporting. The successful implementation of an ERP system can significantly influence these financial management functions, streamlining processes, enhancing data accuracy, and improving decision-making capabilities. The objectives of this research are: firstly, to identify the key factors influencing the decision to implement SAP ERP in financial management; and secondly, to evaluate the outcomes and impacts of SAP ERP implementation on financial management processes and performance.

The research main question is: **How does SAP ERP affect financial management effectiveness within the organization?**

The article finds answers to the following two hypotheses:

- **Hypothesis 1: SAP ERP implementation has a significant positive impact on financial management effectiveness within the organization;**
- **Hypothesis 2: SAP ERP implementation in financial management has both advantages and disadvantages within the organization.**

1) An overview of financial management and SAP ERP system:

Financial management is the bedrock of organizational stability, and SAP ERP acts as the architect, meticulously integrating financial processes with operational activities. This unified platform streamlines workflows, unlocks real-time data insights, and empowers informed decision-making, propelling organizations towards financial excellence¹.

1-1) Financial management practices and SAP ERP system:

Financial stability hinges on adept management, and SAP ERP acts as a sturdy vessel, integrating finances with operations for holistic control and informed decisions².

⊕ Financial management practices:

Financial management is a critical aspect of every organization, encompassing the planning, organizing, controlling, and monitoring of financial resources to achieve the organization's financial goals. It involves making strategic decisions and taking actions that optimize the allocation and utilization of funds, ensuring the organization's financial stability and success. The field of financial management encompasses a wide range of activities, including financial planning, budgeting, financial analysis, cash flow management, risk assessment, investment decision-making, and financial reporting. It plays a crucial role in enabling organizations to make informed financial decisions, manage resources effectively, and achieve sustainable growth.

The primary goal of financial management is to maximize shareholder value or stakeholder wealth by efficiently managing financial resources. Financial managers are responsible for ensuring the availability of adequate funds, minimizing costs, and maximizing returns on investment. They analyze

financial data, assess financial risks, and provide strategic recommendations to guide organizational decision-making³.

In today's dynamic business environment, financial management faces numerous challenges and opportunities. Factors such as globalization, technological advancements, regulatory changes, and economic uncertainties significantly impact financial decision-making. Financial managers need to adapt to these changes, employ sophisticated financial tools and techniques, and stay updated with industry best practices.

Effective financial management is crucial for both profit-seeking organizations and non-profit entities. Profit-seeking organizations aim to generate sustainable profits and create value for their shareholders. Non-profit organizations, on the other hand, focus on managing limited resources to fulfill their mission and achieve their societal objectives.

Financial management also interacts with other functional areas of an organization, such as marketing, operations, and human resources. It plays a crucial role in strategic planning, evaluating investment opportunities, managing working capital, assessing financial performance, and ensuring compliance with financial regulations and reporting standards, and influenced by digital solutions and innovations. Enterprise Resource Planning (ERP) systems, financial analytics tools, and automated processes are revolutionizing financial management practices, enhancing efficiency, accuracy, and decision-making capabilities.

In summary, financial management is a dynamic and critical field that involves managing financial resources, optimizing financial decisions, and ensuring the financial health and success of organizations. It requires a deep understanding of financial principles, analytical skills, and the ability to adapt to changing economic and business conditions. By effectively managing financial resources, organizations can achieve their goals, create value for stakeholders, and maintain a competitive edge in the marketplace⁴.

✚ SAP ERP system, features, and functionalities:

SAP ERP is a widely adopted enterprise software solution that integrates various business processes and enables organizations to streamline their operations, improve efficiency, and make informed decisions. Understanding the key components and capabilities of SAP ERP is essential for organizations considering its implementation or seeking to optimize their usage of the system⁵.

What is SAP ERP?

SAP ERP is an integrated software suite developed by SAP SE, a leading enterprise software company. It serves as a core system for managing business operations, covering areas such as finance, human resources, procurement, sales, production, and supply chain management. SAP ERP provides a centralized database and a unified platform that enables data sharing and collaboration across different functional areas within an organization.

ERP history: The rapid evolution of ERP:

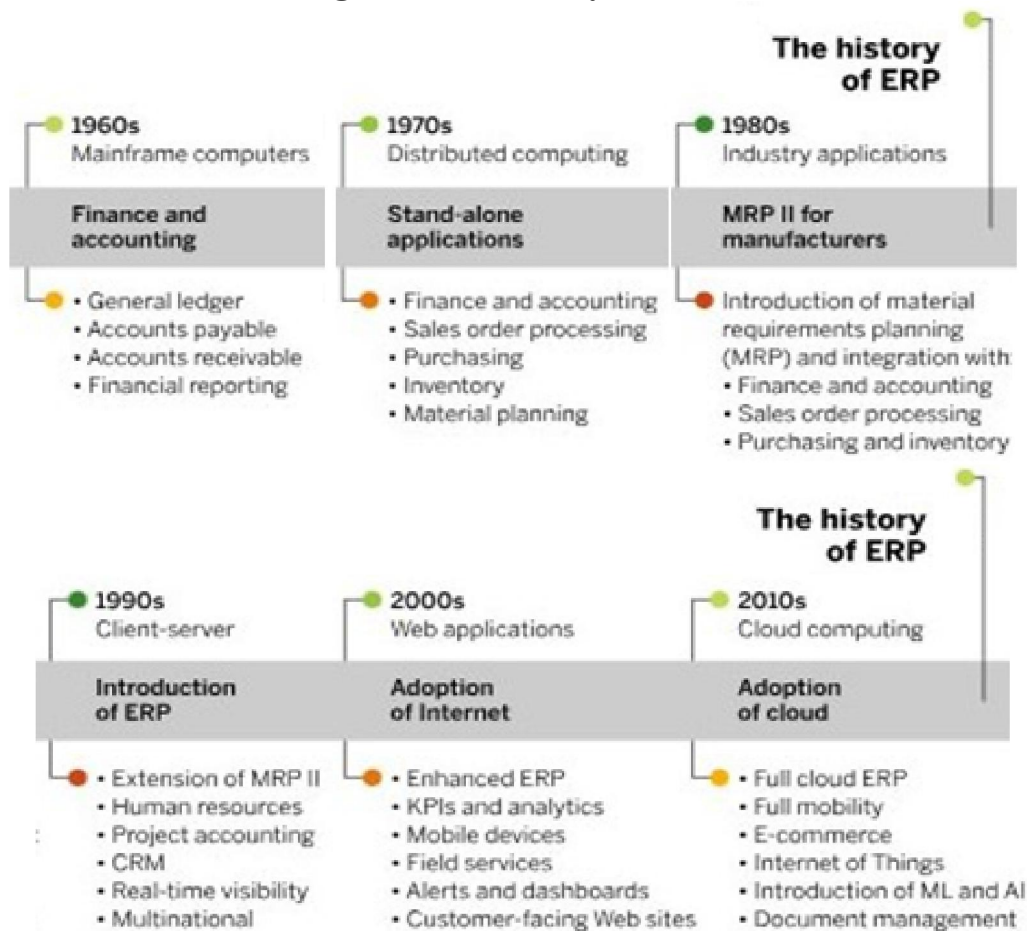
Computerized management applications were born in the world of accounting and finance in the 1960s, with the use of mainframe computers. These pioneering applications were faster and more accurate than manual processes, but costly, limited in functionality and still rather slow. These applications soon gave rise to the development of dedicated stand-alone solutions, notably for sales order management and production requirements planning (MRP).

In the mid-1980s, competition in the production sector literally exploded, and new tools were needed. The new MRP II software enabled the integration of accounting and finance, sales, purchasing and inventory management, as well as production planning and scheduling, providing manufacturers with an integrated system.

In the late 1990s, ERP was launched. ERP transformed the technology sector, addressing more industries and combining MRP II, human resources, project accounting and end-user-oriented reporting.

At the beginning of the 21st century, a faster Internet and new development tools once again revolutionized ERP suites. The introduction of browser-based software paved the way for ERP Cloud software, a breakthrough that broadened the scope and range of functionality of ERP packages.

Figure 01- History of ERP



Source: <https://emanagement.mim.org.my/what-is-erp/>

Today, in the age of digital transformation, modern ERP systems are increasingly leveraging new intelligent technologies such as AI, Machine Learning, Robotic Process Automation (RPA), IoT, Natural Language Processing (NLP) and In-Memory databases. They enable companies to run even more efficient processes, harness up-to-date insights from transactional and unstructured data, and safeguard their competitiveness in this period of unprecedented change⁶.

✦ Key features of SAP ERP:

In today's turbulent business, SAP ERP stands as your sturdy ship. Its integrated compass reveals a holistic view, while automated sails propel you towards informed decisions and optimized performance.⁷:

Integrated modules:

SAP ERP consists of various integrated modules that cater to specific business functions. These modules include Financial Accounting (FI), Controlling (CO), Materials Management (MM), Sales and Distribution (SD), Production Planning (PP), and many more. Each module addresses specific business processes while seamlessly integrating with others to ensure data consistency and accuracy.

Real-time data processing:

SAP ERP facilitates real-time data processing, allowing users to access up-to-date information for decision-making. It enables real-time visibility into business operations, financial data, inventory levels, customer orders, and production status.

Centralized database:

SAP ERP employs a centralized database that stores all relevant data, eliminating the need for data duplication and ensuring data integrity. This

centralization enables data sharing and collaboration across departments, streamlining business processes and reducing data inconsistencies.

Customization and scalability:

SAP ERP offers flexibility in customization to meet specific organizational requirements. Organizations can tailor the system to their unique business processes, workflows, and reporting needs. Additionally, SAP ERP is highly scalable, allowing organizations to adapt and expand the system as their business grows.

Reporting and analytics:

SAP ERP provides robust reporting and analytics capabilities, allowing users to generate a wide range of reports, financial statements, and performance indicators. It offers predefined reports and customizable dashboards, enabling users to monitor key metrics, analyze trends, and gain insights into business performance.

Functionalities of SAP ERP:

SAP ERP acts as central hub, integrating key business functions like:

- Financial management:

SAP ERP's financial accounting (FI) module manages financial transactions, general ledger, accounts receivable, accounts payable, asset accounting, and financial reporting. It enables organizations to handle financial processes efficiently, track costs, manage budgets, and ensure compliance with accounting standards.

- Human capital management (HCM):

The HCM module of SAP ERP handles human resources-related processes, including employee data management, payroll, time management, talent acquisition, performance management, and training. It helps organizations streamline HR operations, manage workforce data, and support strategic HR initiatives.

- **Supply chain management (SCM):**

The SCM module covers procurement, inventory management, logistics, and demand planning. It facilitates efficient supply chain operations, including supplier management, purchase order processing, inventory optimization, warehouse management, and distribution.

- **Sales and customer relationship management (CRM):**

SAP ERP's Sales and distribution (SD) module manages the sales process, from lead generation to order fulfillment. It includes functionalities such as sales order management, pricing, billing, and customer relationship management, enabling organizations to enhance customer service and improve sales effectiveness.

- **Production and manufacturing:**

SAP ERP offers modules like Production Planning (PP) and Materials Management (MM) to support production and manufacturing processes. These modules facilitate production planning, material procurement, inventory control, production scheduling, and quality management.

- **Business intelligence (BI):**

SAP ERP integrates with SAP Business intelligence (BI) tools, enabling users to extract data, create ad-hoc reports, and perform advanced analytics. BI functionalities help organizations gain insights from their data, monitor performance, identify trends, and support data-driven decision-making.

Figure 02 - ERP divisions



Source: <https://www.sap.com/hk/products/erp/what-is-erp.html>

SAP is a comprehensive enterprise software solution that encompasses various modules and functionalities to streamline and integrate business processes. Its key features include integration, real-time data processing, a centralized database, customization, scalability, and robust reporting and analytics capabilities. SAP ERP covers essential areas such as financial management, human resources, supply chain management, sales and customer relationship management, production, and manufacturing. Understanding the features and functionalities of SAP ERP is essential for organizations aiming to leverage the system's capabilities for improved operational efficiency and informed decision-making.

1-2) The impact of SAP implementation on financial management:

The existing research studies examining the impact of SAP implementation on financial management present valuable insights but also exhibit certain limitations. The studies generally indicate positive outcomes in terms of financial performance, financial reporting quality, and operational efficiencies. However, methodological limitations, such as small sample sizes, reliance on secondary data, and the lack of contextual considerations, can limit the generalizability of the findings. Future research should address these limitations by employing larger and more diverse samples, utilizing longitudinal designs, and considering contextual factors that influence the impact of SAP implementation on financial management. Additionally, research studies could explore specific financial management processes in more depth, such as budgeting, control systems, and decision support, to provide a comprehensive understanding of the impact of SAP implementation on financial management outcomes⁸.

✦ **Research on SAP implementation of financial management:**

The empirical evidence regarding the relationship between SAP implementation and financial management effectiveness generally suggests a positive association. Studies indicate improvements in financial processes, accuracy of financial data, financial control, and decision-making capabilities following SAP implementation. Both individual studies and meta-analyses support this positive relationship.

To strengthen the empirical evidence, future research should incorporate larger and more diverse samples, consider different industries and implementation contexts, and explore specific factors that may moderate the relationship between SAP implementation and financial management effectiveness. This will provide a more comprehensive understanding of the nature and mechanisms of the relationship and enhance the practical implications for organizations considering SAP implementation⁹.

✦ **Factors influencing the success of SAP implementation:**

Implementing SAP in the financial management context is a complex process that requires careful consideration of various factors to ensure successful implementation. In this examination, we will explore the key factors that influence the success of SAP implementation in the financial management context¹⁰.

Top management support:

One of the critical factors for the success of SAP implementation is strong support and commitment from top management. When top management is actively involved in the implementation process, they can provide the necessary resources, allocate budgets, and drive organizational change. Their support sets the tone for the entire organization and helps overcome potential resistance to change.

Clear project objectives and scope:

Clearly defining project objectives and scope is essential for successful SAP implementation. Organizations need to identify specific financial management processes and goals they aim to improve through SAP implementation. By setting clear objectives and defining the scope, organizations can focus their efforts and ensure that the implemented SAP system aligns with their needs.

Adequate user training and change management:

Training end-users on the SAP system and implementing effective change management strategies are crucial for successful implementation. Users need to be trained on system functionalities, transaction processing, and reporting capabilities to maximize their productivity and adapt to the new system. Change management strategies should address user concerns, provide ongoing support, and encourage user engagement throughout the implementation process.

Effective communication and stakeholder engagement:

Open and effective communication with stakeholders is vital during SAP implementation. Stakeholders, including finance teams, IT departments, and end-users, should be engaged and informed about the goals, progress, and potential benefits of SAP implementation. Regular communication and feedback channels help address concerns, gain buy-in, and foster collaboration among stakeholders.

Data migration and data quality:

Successful SAP implementation requires accurate and reliable data migration from legacy systems. Ensuring data integrity, consistency, and quality during the migration process is crucial for the effective functioning of the SAP system. Adequate data cleansing, mapping, and validation processes should

be in place to avoid data errors and inconsistencies that could undermine the system's effectiveness.

Customizations and configuration:

Customizing and configuring the SAP system to align with the organization's specific financial management processes is important for success. Organizations should carefully assess their unique requirements and consider customizing the system to accommodate specific business rules, reporting needs, and workflows. However, striking a balance between customization and utilizing standard SAP functionalities is crucial to avoid excessive complexity and potential maintenance challenges.

Ongoing support and continuous improvement:

SAP implementation is not a one-time event but an ongoing process. Organizations should establish post-implementation support mechanisms to address system-related issues, user queries, and system maintenance requirements. Continuous improvement efforts should be undertaken to leverage new SAP functionalities, incorporate best practices, and adapt to changing business needs.

The success of SAP implementation in the financial management context depends on several factors. Top management support, clear project objectives, adequate user training, effective change management, communication with stakeholders, data migration and quality, customization and configuration, and ongoing support play critical roles in ensuring successful implementation. By carefully considering these factors and addressing potential challenges, organizations can maximize the benefits of SAP implementation and enhance their financial management practices.

2) SAP ERP implementation and effective financial management:

A case study of occidental of Algeria LLC:

This is where SAP ERP emerges as a powerful ally, integrating crucial functions like finance, inventory, and HR into a unified platform¹¹.

2-1) Assessing the factors of SAP ERP implementation

on financial management:

Evaluating the impact of SAP ERP implementation on financial management necessitates a comprehensive analysis of data integration, process automation, and organizational adaptability¹².

✦ Introduction of occidental of Algeria LLC:

Occidental also called Oxy, is an international energy company, has assets primarily located in the United States, the Middle East, and North Africa. Oxy's principal businesses consist of three reporting segments: oil and gas, chemical and midstream and marketing.

Algeria business unit:

Oxy is a leading foreign oil producer in Algeria, currently producing from three megaprojects in partnership with Sonatrach, the state-owned energy firm. The projects -Ourhoud, HassiBerkine and El Merk- are in the Sahara Desert.

Occidental's interest in Algeria involves development and production rights in 18 fields within Blocks 404a and 208, which are located in the Berkine Basin in Algeria's Sahara Desert and are governed by an agreement amongst Occidental, Sonatrach and other partners. Occidental is responsible for 24.5% of the development and production costs. The El Merk central processing

facility in Block 208 processes produced oil, NGL and natural gas, while the HassiBerkine South and Ourhoud central processing facilities in Block 404a process produced oil. The rights to produce from the Block 404a fields expire between May 2023 and 2036, and the rights to produce from the Block 208 fields expire in 2032.

In 2022, net production in Algeria was 45 Mbbl/d, two gross development wells were drilled and annual net capital expenditures were \$25 million. In July 2022, Occidental signed a new PSC with Sonatrach and other partners which, upon approval by the Algerian government, will be for a new 25-year term for all of the fields under the current hydrocarbon agreement. With respect to the new PSC, Occidental is responsible for 35% of the development and production costs, and government approval is expected in the first half of 2023.

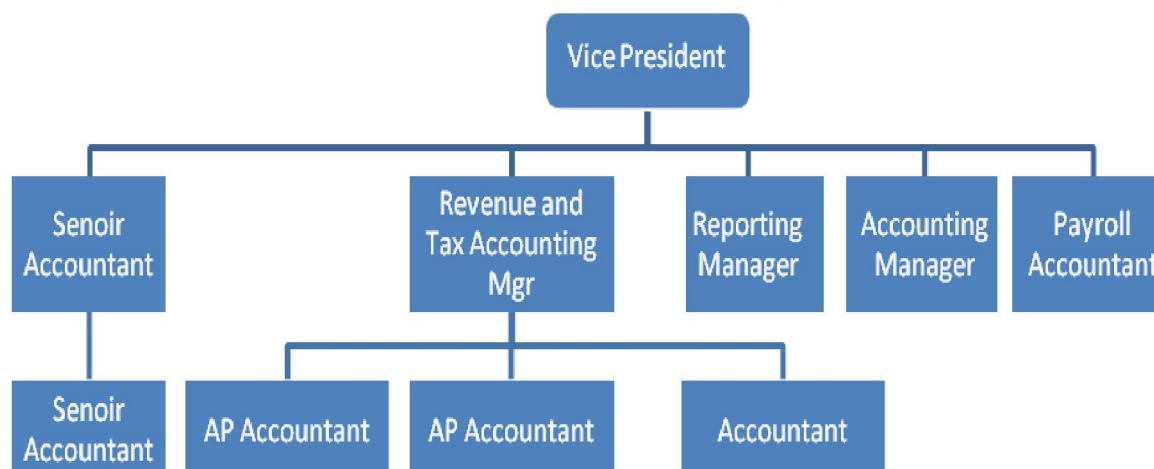
Occidental's culture is built upon the following core values:

- lead with Passion;
- outperform Expectations;
- deliver Results Responsibly;
- unleash Opportunities;
- commit to Good.

Occidental of Algeria finance organizational chart:

In Occidental, each of these roles holds specific responsibilities and contributes to the financial management and accounting functions:

Figure 03 - Finance dept chart



- **Vice president (VP):**

Provides strategic direction and leadership for the company's financial operations, Financial Planning and Analysis, Risk Management, manage relationships with financial institutions, and other stakeholders, representing the company's financial interests.

- **Senior accountants:**

Oversees the recording, classification, and maintenance of financial transactions, ensuring accuracy and compliance with accounting standards, also the senior accountants assist with internal and external audits.

- **Revenue and tax accounting manager:**

The manager oversees tax compliance activities, including preparing and filing tax returns, managing tax audits, and implementing tax planning strategies to optimize the company's tax position.

- **Reporting manager:**

Responsible for preparing and presenting financial reports, including monthly, quarterly, and annual reports, ensuring accuracy, compliance, and timely delivery. They also provide financial analysis and insights to support management decision-making, monitor key performance indicators (KPIs), and contribute to strategic planning and goal setting.

- **Accounting manager:**

Oversees the general ledger, ensuring accurate recording of financial transactions, maintaining chart of accounts, and implementing appropriate controls, and lead the month-end and year-end closing processes, including reconciliation of accounts, adjusting entries, and preparation of financial statements.

- **Payroll account:**

Used to record all financial transactions related to employee compensation and benefits. It includes wages, salaries, bonuses, commissions, and deductions such as taxes, insurance premiums, and retirement contributions.

- **AP accountant:**

Responsible for managing the accounts payable process. Their primary role is to handle the company's outstanding liabilities or debts to suppliers, vendors, and service providers. In include, Invoice Processing, Recording and Coding, Payment Processing, Vendor Communication.

Overview of the financial management practices and systemsemployed by the host company:

Financial management plays a crucial role in guiding the success of organizations, including industry leaders such as Occidental of Algeria (Oxy). As a global oil and gas exploration and production company, Occidental relies on effective financial management practices and systems to allocate resources efficiently, evaluate performance accurately, and mitigate financial risks. In this section, we delve into the key financial management practices and systems employed by Oxy to maintain sound financial health and optimize its operations.

- **Budgeting and financial planning:**

Occidental has an established budgeting process to plan and allocate financial resources effectively. This involves setting financial goals, estimating revenues and expenses, and creating budgets for different departments or projects. Financial planning ensures that resources are

allocated efficiently, helps in decision-making, and enables tracking of financial performance.

- **Financial reporting and analysis:**

Accurate and timely financial reporting is crucial for decision-making and compliance. Oxy maintains a system to record financial transactions and prepare financial statements such as balance sheets, income statements, and cash flow statements. Financial analysis techniques, such as ratio analysis and trend analysis, are used to interpret financial data and assess the company's performance, profitability, liquidity, and solvency.

- **Internal controls systems:**

Are a keyway to safeguard assets and ensure accurate financial reporting and compliance. These systems include policies, procedures, and monitoring mechanisms to prevent fraud, errors, and misstatements. Internal controls involve segregation of duties, regular internal audits, and implementation of appropriate financial and operational controls all these are setup and monitored through various SAP ERP Transaction codes.

- **Cash flow management:**

Companies focus on managing cash flow effectively to meet their financial obligations. This involves monitoring cash inflows and outflows, optimizing cash conversion cycles, and maintaining adequate liquidity. Cash flow management helps ensure that the company has enough funds to cover expenses, invest in growth opportunities, and handle unforeseen financial challenges.

- **Financial performance measurement and key performance indicators (KPIs):**

Pi's are vital for successful financial management inside the company these are established to measure and monitor financial performance using key performance indicators. By regularly tracking and analyzing these indicators, Oxy can evaluate their financial health, identify areas for improvement, and make informed strategic decisions.

✚ Assessing the Factors of SAP ERP Implementation

on financial management:

Assessing the factors influencing SAP ERP implementation on financial management requires a multi-faceted approach and some key areas to consider.

Factors influencing occidental's adoption of SAP ERP for enhanced financial management:

In today's rapidly evolving business landscape, organizations are constantly seeking ways to optimize their financial management practices. One avenue that has gained considerable attention and traction is the implementation of Enterprise Resource Planning (ERP) systems. ERP systems provide integrated software solutions that streamline various business functions, including finance, accounting, human resources, and supply chain management. The successful adoption of an ERP system, such as SAP ERP, can have a profound impact on a company's financial management effectiveness, enabling improved efficiency, accuracy, and decision-making capabilities.

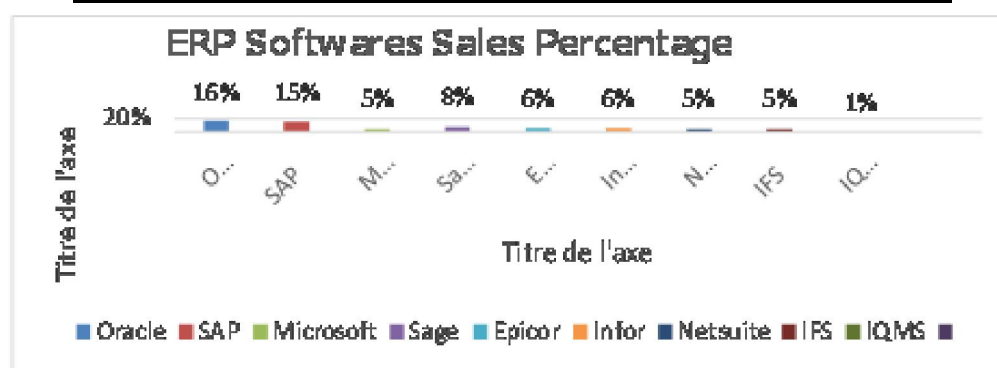
This paper aims to delve into the factors that influenced Occidental's decision to adopt SAP ERP as a means to enhance their financial management practices. Occidental, a leading company in the oil and gas industry recognized the need to upgrade its financial management systems to meet the challenges of a dynamic marketplace and achieve its strategic objectives. By implementing SAP ERP, Occidental aimed to leverage the system's advanced capabilities to gain a competitive edge, increase operational efficiency, and facilitate informed decision-making across its financial functions.

Before choosing an ERP software solution companies must embark on a thorough evaluation process that involved identifying and assessing potential suppliers. They would form a list of potential ERP system providers, including industry-leading players such as SAP, Oracle, and Microsoft Dynamics 365. This rigorous selection process would underscore the

company's commitment to identifying the best-fit solution that aligns with their specific financial management requirements.

To visually demonstrate the considerations involved in the selection process, the following graph presents the initial list of potential ERP suppliers.

Figure 04 - Companies most sold ERP Systems 2018



Source: Report panorama (2018), p. 8, <https://www.panorama-consulting.com>

The graph illustrates the shortlisted ERP suppliers and their respective market shares, showcasing the competitive landscape in the ERP software market.

The inclusion of SAP 15%, Oracle 16%, and Sage 8% respectively on their list emphasizes the recognition of these vendors as key players in the industry, known for their robust ERP offerings.

Based on the graph, we can conclude that in the process of selecting financial management software, companies consider various criteria offered by each ERP system to make an informed decision. These criteria include their specific requirements, industry standards, financial complexity, scalability, integration capabilities, and cost-effectiveness.

For an Oil and Gas company like Occidental, one of the best ERP systems to consider is SAP ERP system. It provides comprehensive modules and features designed to address the complex requirements of this industry with regards to hydrocarbon management, production planning, supply chain management.

SAP is a powerful and widely used ERP solution that offers specific industry functionalities including general ledger, accounts payable and receivable, asset management, financial reporting, and budgeting. Its robust capabilities provide a solid foundation for managing complex financial operations, enabling companies to efficiently handle tasks such as invoice processing, payment management, financial planning, and financial analysis. Moreover, SAP ERP is highly regarded for its seamless integration capabilities, facilitating the flow of data and information across departments and enabling improved efficiency, accuracy, and decision-making processes. By integrating with other essential business systems like supply chain management, human resources, and customer relationship management. Furthermore, it is built on an in-memory computing platform, enabling faster data processing and real-time data access, which is crucial in the dynamic and time-sensitive nature of the oil and gas industry. Considering the comprehensive industry-specific functionality, advanced analytics capabilities, seamless integration options, and real-time processing offered by SAP S/4HANA, it stands as a recommended ERP system for oil and natural gas companies like Occidental.

Financial functions of SAP ERP in Occidental:

These functions are designed to streamline accounting processes, convert data into valuable information, ensure data accuracy and integrity, and facilitate the efficient delivery of information to Managers. By leveraging the capabilities of the SAP ERP system, our host company has achieved greater control, accuracy, and effectiveness in managing its accounting operations. Let's delve into each function and its significance within the organization.

- Data collection, tabulation, and indexing- Building a solid foundation establishing a robust data collection system:

One of the primary functions of the SAP ERP system is to establish a robust data collection system within our host company. The system provides tools and mechanisms to collect, tabulate, and index accounting data from various sources within the organization. By centralizing data collection

processes, the organization ensures a solid foundation for reliable and comprehensive financial information. This function helps to streamline data acquisition, minimize errors, and enhance efficiency in capturing financial data accurately and in a timely manner.

- **Reviewing, entering, and storing accounting data- Ensuring data accuracy:**

Enhancing Data Integrity through Efficient Data Management:

Efficient management of accounting data is a critical function facilitated by the SAP ERP system. The system enables the review, entry, and storage of accounting data in a centralized database. Through standardized processes and user-friendly interfaces, the system ensures data accuracy and completeness. The data is validated, verified, and securely stored, minimizing the risk of errors and data inconsistencies. This function contributes to the overall data integrity and reliability, enabling stakeholders to have confidence in the accuracy of financial information.

- **Operating and processing accounting data- Transforming data into valuable information:**

Driving Insights through Effective Data Processing:

The SAP ERP system plays a vital role in the operational aspects of accounting data. It enables the efficient processing of data, transforming it into meaningful information that serves the organization's goals. The system's functionalities allow for calculations, aggregations, and analysis of accounting data, facilitating the generation of reports, analytics, and insights. Through powerful data processing capabilities, the system empowers decision-makers with the necessary information to make informed and strategic decisions, contributing to the organization's success.

The types of report that can be generated by SAP ERP are as follows:

Balance Sheet Report: The balance sheet report represents the organization's assets, liabilities, and shareholders' equity at a given time¹³.

- **Storing accounting information and managing bank data- Ensuring data security and accessibility:**

Securing and Centralizing Accounting Information and Bank Data:

Another important function of the SAP ERP system is the secure storage and management of accounting information and bank data. The system provides robust security measures to protect sensitive financial data, ensuring confidentiality and integrity. Additionally, it offers features to manage bank-related transactions, reconciliations, and reporting. This centralization of accounting information and bank data enhances accessibility, simplifies data retrieval, and supports efficient cash management and financial controls.

- **Transferring and delivering information- Facilitating effective communication:**

Enabling Seamless Information Exchange and Delivery:

The SAP ERP system facilitates the efficient transfer and delivery of accounting information to its users in an appropriate manner. It provides tools for generating and distributing reports, statements, and other financial information. The system enables seamless communication between different departments and Managers, ensuring timely access to accurate financial information. This function enhances collaboration, improves decision-making processes, and promotes effective communication throughout the organization.

- **Controlling and protecting data- Safeguarding accuracy and integrity:**

Ensuring Data Accuracy and Integrity through Robust Controls:

Controlling and protecting data is a critical function of the SAP ERP system. The system implements stringent security measures, access controls, and data validation checks to ensure the accuracy, integrity, and confidentiality of financial information. These controls help prevent unauthorized access, mitigate risks of data breaches, and maintain data consistency. By safeguarding data accuracy and integrity, the system ensures the reliability of financial information, instilling trust in stakeholders and supporting sound decision-making processes.

- **Security Governance:**

SAP sees Security governance a critical aspect of their strategy. They take guidance from industry standards such as the U.S. National Institute of Standards and Technology (NIST), the International Organization for Standardization (ISO), and others¹⁴.

- **Audit and compliance:**

SAP experts are prepared to assess security controls and manage certifications and attestation audits. The company has numerous certifications and can address third-party risk management and assess its suppliers for compliance.

- **Business resilience:**

Resiliency lets SAP adapt to threats against the interests of stakeholders, reputation, critical operations, and more. To do this, they implement redundancy and business continuity management into their systems to help them to respond to threats.

- **Cyber defense:**

SAP monitors and provides alerts for suspicious activity and vulnerabilities, conduct routine scans of external-facing Web infrastructure and third-party penetration tests, and deploy red team testing to evaluate system security.

- **Threat and risk assessment:**

To protect customer data, SAP uses a risk-based methodology that supports planning, mitigation, and countermeasures. It can address threats to assets and resources by conducting assessments and understanding the impact they may have.

- **Global physical security:**

Protecting physical assets is crucial to protecting customer data. SAP's physical security programs manage the safety and protection of their employees while they work. By protecting offices with technology and people, they elevate their security.

- **DevSecOps:**

SAP includes security in all aspects of development, security, and operations (DevSecOps). Their operations are implemented in security control designs and practices for the network, application, servers, operating system, databases, and more.

By implementing these functions of the SAP ERP system, our host company has enhanced its accounting operations, improved data accuracy, and strengthened financial controls. The system provides a solid foundation for efficient data management, accurate financial reporting, and effective decision-making, contributing to the overall success of the organization.

Advantages and disadvantages of implementing SAP ERP system:

The advantages and the disadvantages of implementing SAP ERP are as follows:

- **Advantages of SAP ERP implementation in an organization:**

SAP ERP (Enterprise Resource Planning) implementation offers several advantages for organizations, making it a popular choice for managing and optimizing business processes. The following points highlight some key advantages:

- **Comprehensive financial functionality:**

SAP ERP provides a wide range of financial modules and features that enable organizations to effectively manage their financial operations. These modules include general ledger, accounts payable and receivable, asset accounting, cash management, and financial reporting. The comprehensive financial functionality of SAP ERP ensures accurate financial data management, streamlined processes, and enhanced decision-making.

o **Industry-Specific solutions:**

SAP offers industry-specific solutions that are tailored to meet the unique requirements of different sectors. Whether it's manufacturing, retail, healthcare, or any other industry, SAP ERP provides specific functionalities and best practices that align with the industry standards and processes. This industry-specific approach helps organizations in

implementing ERP systems that are optimized for their particular needs, improving efficiency and productivity.

- **Scalability:**

SAP ERP is known for its scalability, which is crucial for businesses aiming to grow and expand their operations. The system can handle a growing number of users, increased transaction volumes, and complex business scenarios without compromising performance or stability. This scalability feature allows organizations to seamlessly adapt to increased operational demands, ensuring that the ERP system can support their future growth.

- **Integration capabilities:**

SAP ERP offers robust integration capabilities, allowing seamless data flow between various systems and applications within an organization. It facilitates integration with external systems as well, enabling streamlined information exchange across the entire enterprise ecosystem. This integration capability ensures data consistency, eliminates data silos, and enhances collaboration and decision-making across departments.

- **Analytics and reporting:**

SAP provides powerful analytics and reporting tools within its ERP system. These tools offer real-time insights into business performance, financial metrics, and operational data. Organizations can generate customized reports, create dashboards, and analyze data to gain valuable insights, monitor key performance indicators (KPIs), and identify areas for improvement. The availability of accurate and timely information empowers organizations to make informed decisions and drive strategic initiatives effectively.

- **Disadvantages of SAP ERP implementation in an organization:**

While SAP ERP implementation offers numerous benefits, it is essential to consider potential disadvantages and challenges that organizations may face. The following points outline some key disadvantages:

- **Complexity and implementation time:**

Implementing SAP ERP can be a complex and time-consuming process. It requires thorough planning, resource allocation, and expertise to configure and customize the system to align with specific business requirements. The implementation timeline can vary depending on factors such as the company's size, complexity, and customization needs. Organizations need to allocate sufficient time and resources for a successful implementation.

- **Cost:**

SAP ERP is considered a significant investment for organizations. The costs associated with licensing, implementation, customization, training, and ongoing maintenance can be substantial, particularly for small and medium-sized enterprises with limited budgets. Organizations need to carefully evaluate the costs and benefits to ensure that the investment in SAP ERP aligns with their strategic goals and financial capabilities.

- **Internet connectivity dependency:**

SAP ERP typically operates as a web-based application, requiring reliable internet connectivity for users to access the system and perform their tasks. Unreliable or unstable internet connections can disrupt user access and hinder productivity. Organizations must ensure reliable internet connectivity to minimize disruptions in financial operations and maintain smooth system usage.

2-2) Impact of SAP ERP on financial management effectiveness:

implementing SAP ERP for financial management holds promise for heightened control and precision through centralized data, automated tasks, and improved forecasting, but navigating adoption hurdles and ensuring data quality can impact success.¹⁵

✚ **What is the impact of SAP ERP on financial decision-making?**

The impact of SAP ERP on financial decision-making is about:

Improved data accuracy and timeliness:

SAP ERP's integrated approach ensures data accuracy and timeliness in financial decision-making. For example, the system captures real-time transactional data from various departments, such as sales, procurement, and production. This data is instantly updated and consolidated within the SAP ERP platform, providing decision-makers with accurate and up-to-date financial information.

SAP's Financial Accounting (FI) module, a key component of SAP ERP, offers features such as automatic data validation, error checks, and real-time financial updates. By eliminating manual data entry and reducing data errors, SAP ERP enhances the accuracy and timeliness of financial information, enabling decision-makers to base their decisions on reliable data.

Enhanced financial visibility and reporting:

SAP ERP provides robust financial reporting capabilities to support financial decision-making. For instance, SAP's Financial Statement Insights allows decision-makers to generate detailed financial reports, balance sheets, income statements, and cash flow statements. These reports can be customized to reflect specific requirements and can be easily shared with stakeholders.

Streamlined financial processes:

SAP ERP streamlines financial processes through automation and workflow management. For example, SAP's Accounts Payable module automates invoice processing, payment approvals, and vendor management. This streamlines the payment cycle, reduces manual effort, and minimizes errors.

Integrated financial planning and analysis:

SAP ERP offers integrated financial planning and analysis capabilities to support decision-making. SAP's Financial Planning and Analysis (FP&A)

module allows for scenario modeling, budgeting, forecasting, and variance analysis. Decision-makers can create multiple scenarios and analyze their financial impact, enabling them to make data-driven decisions based on accurate projections.

For example, SAP's Profitability and Cost Management module provides cost allocation and analysis capabilities, enabling decision-makers to understand the profitability of different products, customers, and business segments. This information empowers them to optimize pricing strategies, allocate resources effectively, and make informed decisions about product lines or customer segments.

Enhanced compliance and risk management:

SAP ERP helps organizations ensure compliance with financial regulations and internal policies, reducing financial risks. SAP's Governance, Risk, and Compliance (GRC) module supports internal controls, risk management, and compliance monitoring.

For example, SAP GRC enables decision-makers to establish and enforce segregation of duties (SoD) policies, ensuring that critical financial processes are appropriately segregated to prevent fraud or errors. It also provides automated risk assessment and monitoring capabilities, alerting decision-makers to potential compliance issues.

Facilitates strategic decision-making:

SAP ERP facilitates strategic decision-making by providing decision-makers with a comprehensive view of financial data across the organization. SAP's Strategic Enterprise Management (SEM) module supports strategic planning, budgeting, and performance management.

For instance, SAP's Strategic Workforce Planning tool helps decision-makers align workforce strategies with financial goals by analyzing workforce demand, skills gaps, and costs. This enables informed decisions on hiring, training, or restructuring to meet strategic objectives.

⊕ How does SAP improve financial management Processes efficiency?

SAP can transform your financial management from a labyrinth of spreadsheets to a streamlined racecourse, boosting efficiency through data consolidation, process automation, and real-time financial insights.

Data integration and centralized financial information:

SAP ERP integrates various financial modules and consolidates data from different departments and functions into a centralized platform. This integration ensures that decision-makers have access to accurate, consistent, and up-to-date financial information across the organization. For example, SAP's Financial Accounting (FI) module collects data from accounts payable, accounts receivable, and general ledger, providing decision-makers with a holistic view of financial transactions and balances.

Real-time reporting and analytics:

SAP ERP offers robust reporting and analytics capabilities that provide decision-makers with real-time insights into financial performance. SAP's Financial Statement Insights allows the generation of customizable financial reports, balance sheets, income statements, and cash flow statements. Decision-makers can drill down into specific line items, compare actuals against budgets or forecasts, and identify areas that require attention. Financial Statements can be generated through T-Code S_ALR_87012284, Users can define parameters such as company code, fiscal year, and reporting period to generate the income statement report, Balance Sheet Report, Cash flow Statement.

Financial planning and analysis:

SAP ERP includes financial planning and analysis modules that support budgeting, forecasting, and variance analysis. SAP's Financial Planning and Analysis (FP&A) module enables decision-makers to create comprehensive

financial models, perform scenario analysis, and evaluate the financial impact of different alternatives.

Automation and workflow management:

SAP ERP automates routine financial processes, reducing manual effort, and minimizing errors. For example, SAP's Accounts Payable module automates invoice processing, payment approvals, and vendor management. This automation streamlines financial workflows, improves efficiency, and ensures accurate financial transactions.

All this can be done through VIM or Vendor Invoice Management T-code. VIM integrates with SAP ERP systems and offers a set of functionalities to simplify invoice management. Here are some key features and benefits of VIM for SAP solutions:

VIM, or Vendor Invoice Management, is a solution provided by SAP (Systems, Applications, and Products) that helps organizations streamline and automate their accounts payable processes. VIM is designed to enhance the efficiency and accuracy of invoice processing, from receipt to payment, by leveraging various SAP modules and technologies.

VIM integrates with SAP ERP systems and offers a set of functionalities to simplify invoice management. Here are some key features and benefits of VIM for SAP solutions:

Automatizing payments:

SAP ERP includes controls and features that aid with the processing of payments to vendors and customers. The F110 transaction code allows organizations to do just that, thereby improving efficiency and accuracy in financial operations.

F110 is an SAP transaction code used for the automatic payment program. It is a widely used functionality in SAP ERP for processing payments to vendors and customers. The F110 transaction code allows organizations to streamline and automate the payment process, thereby improving efficiency and accuracy in financial operations.

Research Results

The subject of our study is "the impact of SAP ERP implementation on effective financial Management" is one of the most important current topics in organizations and financial departments across various fields and sector in the business world, in view of the changes and developments taking place and the fast development in technologies companies are striving to find ways to lead the market through efficient systems that help facilitate financial operations and decision making.

The purpose of this study was to explore the significance of SAP ERP implementation on financial management effectiveness in order to solve internal problems faced in the financial field.

⊕ Theoretical results:

With SAP ERP, organizations can automate financial processes such as accounts payable and receivable, general ledger accounting, and cash management. This not only reduces the risk of errors but also saves time and resources that can be used for other important tasks. In addition, SAP ERP provides real-time financial insights that enable organizations to make informed decisions quickly.

⊕ Practical Results:

The system enables seamless communication between different departments and Managers, ensuring timely access to accurate financial information. This function enhances collaboration, improves decision-making processes, and promotes effective communication throughout the organization.

Conclusion:

This study investigated the impact of SAP ERP implementation on effective financial management. Through the practical aspect of this study, we came to the following conclusion on the proposed hypothesis:

- ✍ the implementation of SAP ERP positively affects financial decision-making within organizations by facilitating comprehensive reporting and analytics capabilities, providing timely insights and data-driven strategies;
- ✍ SAP ERP plays a crucial role in enhancing the accuracy of financial reporting by offering integrated and real-time financial data, ensuring reliable and up-to-date information for informed decision-making;
- ✍ the adoption of SAP ERP significantly improves the efficiency of financial management processes by streamlining workflows, reducing manual effort, and enhancing operational efficiency. It enables efficient resource allocation, effective risk management, and strategic financial planning;
- ✍ despite challenges related to system complexity, implementation cost, and reliance on internet connectivity, organizations that strategically overcome these obstacles can benefit from SAP ERP and improve their financial management practices.

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