Integrating SAP ERP with Azure And AWS for Improved Operational Efficiency

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A B S T R A C T

The contemporary business environment is rapidly changing with the advancements in different technological aspects. The SAP ERP software helps them to conduct their business operations in an optimal manner. With the advent of cloud computing through platforms like Azure and AWS, different businesses are integrating their SAP ERP software with them. The research paper has shed light on the different practical implications and benefits that this integration can have towards the improvement of operational efficiency. The research paper has derived necessary conclusions that can help businesses to improve their integration strategies. Hence, it is ultimately helpful for properly carrying out business operations and attaining a competitive edge.

Keywords: SAP ERP, Amazon Web Services, Microsoft Azure, Cloud computing platform

1. Introduction

The research paper will analyse how the integration of Azure and AWS with SAP ERP can help enhance the business operations of an organisation. In the contemporary world, this has become extremely important since businesses are able to appropriately handle the large volumes of data that are generated every day. In this manner, they are able to get advanced insights into different parts of their operations. Therefore, a seamless integration of SAP ERP with Azure and AWS enables a business to make informed and logical decisions that can be significant for gaining a competitive advantage in the highly saturated market.

2. Exploring the Concept of SAP ERP

SAP ERP can be described as a software system that helps to streamline different operations of a business. These areas include finance, manufacturing, supply chain, human resource management and others. It can be very difficult to manage all these different aspects. Therefore, SAP ERP presents a singular integrated platform that enables a business to supervise all these aspects in the most efficient manner[1]. The concept of SAP ERP

was first introduced in 1972 when five former IBM engineers envisioned the possibility to revolutionise the management of different business operations with the help of computer software. This vision was then transformed into a reality with the creation of SAP R/2[2]. It is a conventional mainframe-based ERP software system that modified the ways in which data is managed by different companies. With the passage of time and incessant technological advancements, SAP R/3 and SAP 4/HANA were introduced. The digitisation of different business operations is largely facilitated by the SAP 4/HANA which provides faster processing and real-time analytics. At present, SAP 4/HANA Cloud is the culmination of years of innovation and refinement of the SAP ERP software. It is utilised by different organisations across various business sectors. The software is widely recognised for its incredible ability to integrate and improve the efficiency of different business processes[3]. In this regard, a few benefits of the SAP ERP system can be mentioned. It helps businesses to get real-time analytics that can be instrumental for better decision-making. Additionally, the automation technologies within SAP ERP help to considerably minimise the amount of time allocated for data compilation **(Figure 1)**. Hence, businesses are able

to make accurate predictions and forecasts. Different types of mathematical equations are used by the platform to provide the desired results. For instance, in terms of financial accounting, the net profit or loss is calculated by finding out the sum total of the cost of sold goods and the operational expenses. The product is then subtracted from the incurred revenue to get the amount of net profit or loss.

Figure 1: Logo of SAP.

3. Understanding Azure And AWS

3.1. Azure

Microsoft Azure was launched in 2010, which marked a significant change from on-premises data centres to cloud computing. With the help of this cloud computing platform, businesses are able to maintain their operational infrastructure more efficiently. It offers a wide array of more than 200 products and services all across the world. The platform utilises the power of automation with the help of artificial intelligence[1]. Moreover, Azure provides an exceptional security framework for the businesses that are using it **(Figure 2)**. This protection policy helps them to safeguard their confidential information from online threats and data breaches. The Azure virtual machine cost is calculated by multiplying the virtual machine price per hour by the total hours of usage. The product is then added to the storage and bandwidth costs to get the desired result.

Figure 2: Logo of Azure.

3.2. AWS

Similar to Microsoft Azure, AWS is another significant cloud computing platform that is provided by Amazon. It is generally regarded as the world's most widely adopted cloud platform. Different businesses, ranging from startups to established ones, are leveraging the power of AWS to improve their operational capabilities. It has been delivering an exceptional performance for more than 17 years **(Figure 3)**. The cloud computing services that are offered by AWS commerce different kinds of businesses across multiple domains. Therefore, the scalability of this platform is one of the primary reasons why it is adopted all across the world[5]. The cost of AWS S3 storage is measured by multiplying the storage used with the cost per GB and the total number of requests with the request cost. The products are then added together along with the data transfer cost to arrive at the required cost value.

Figure 3: Logo of AWS.

4. Integration 0f SAP ERP with Azure And AWS For Operational Efficiency

There are different ways in which SAP ERP can be integrated with both Azure and AWS cloud computing platforms. First, a business can adopt a hybrid cloud approach where a considerable portion of the SAP workload remains on-premise. The rest of the workload can utilise the advantages of cloud services. This is effective for reducing subscription costs and ensuring the availability of data in case of unprecedented disasters[7]. They can also adopt a multi-cloud architecture where the workloads are evenly distributed among Azure and AWS to improve resilience. The selection of the integration strategy depends on the needs and financial backup of a business. If SAP ERP is appropriately integrated with Azure and AWS, the businesses can extract and evaluate large chunks of SAP data. It can also allow a seamless integration of data across different applications within the business[8]. Most importantly, the business can upscale or downscale its cloud infrastructure according to the necessities of the business. Along with improving operational efficiency, businesses can also save a lot of money since they do not have to use physical hardware. The supply chain can also be managed efficiently by using the cloud computing power of both Azure and AWS. Therefore, the businesses can gain a competitive advantage in the long run.

5. Conclusion

In conclusion, it can be stated that businesses can hugely benefit from the integration of their SAP ERP systems with AWS and Azure. It can largely improve the efficiency of the different business operations. Therefore, the power of cloud computing and automation can help the business to stand out from other competitors.

5.1. Abbreviations and acronyms

- **SAP:** Systems, Applications & Products in Data Processing
- **ERP:** Enterprise Resource Planning
- **AWS:** Amazon Web Services

5.2. Units

- **Storage capacity:** GB (gigabyte) or TB (Terabyte)
- **Storage performance:** IOPS (Input/Output Operations Per Second)
- **Bandwidth speed:** Mbps (Megabits per second) or Gbps (Gigabits per second)

5.3. Equations

- Net Profit=Revenue−(Cost of Goods Sold+Operating Expenses)
- Total Cost=(VM Price per Hour×Usage Hours)+Storage Cost+Bandwidth Cost

- Total Cost=(Storage Used×Cost per GB)+(Number of Requests×Request Cost)+(Data Transfer Cost)

6. References

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