

Application and Impact of Cloud Computing in Business Development

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Abstract. With the rapid development of China's economy and technology at this stage, cloud computing technology has become an important way for most enterprises to develop and innovate. Big data products developed by enterprises using cloud computing occupy a very important role in the sales profitability of cloud vendors as well as in the technical reputation of enterprises. At the present stage, Alibaba Cloud is one of the leading cloud vendors in China. Alibaba Cloud has strong technical strength in the innovation of technology, such as, database capacity increase, acceleration of cloud servers and so on. China has been strengthening the development of cloud vendors, but in the society where cloud computing products are popularized, it faces many problems, for example the leakage of security information affects the development and profitability of enterprises, the lack of cloud computing platform construction makes the process of automation and informatization and intelligent construction slow, which is not conducive to the full play of the functional value of the cloud computing platform.

Keywords: Cloud computing technology, enterprise applications, cloud services.

1. Introduction

The purpose of this paper is to analyze the application of cloud computing in today's business development, as well as to explore its influencing factors, by combing the relevant literature and conducting an empirical study. The use of cloud computing in enterprises, both domestically and internationally, has gained some traction, but several issues and challenges remain. In the face of these problems and challenges, this paper puts forward the corresponding recommendations and measures for cloud computing should be how to deal with information leakage. Finally, the paper summarizes the main findings and conclusions of the study and makes recommendations for cloud computing to assist businesses as a future research direction.

2. Deeper Integration of Cloud Computing into the Enterprise

2.1. Evolution of Cloud Computing

According to market researcher IDC, China's public cloud computing market size (IaaS / PaaS/ SaaS) was CNY114 billion (about \$16.58 billion) in the first half of 2022.China's public cloud computing market size is expected to reach RMB 181.95 billion (about \$28 billion) by 2025, growing at a CAGR of 21.3% [1].The rapid growth of China's cloud computing market is attributed to multiple factors such as government policy support, accelerated digital transformation of enterprises, and the popularization of the Internet and mobile Internet. The application of cloud computing in the field of finance has been widely concerned by the community, it is not only about the efficiency of business operations, but also widely researched by a wide range of technical personnel. Future trends in cloud computing: multi-cloud and hybrid clouds will become mainstream, enabling greater efficiency in technology.

2.2. How Cloud Computing Technology Impacts Businesses

In recent years, cloud computing has become an important industry in digital China, and its development is so rapid that organizations need to respond quickly to changes. Cloud computing

affects organizations in different ways: in terms of resource flexibility, in the construction of traditional e-services, when adding new computing resources, the technology department needs to consider planning the acquisition and configuration of new servers, which not only incurs high costs, but also may result in a waste of resources. However, cloud computing only requires a timely increase in payments when computing resources are added without considering the cost of infrastructure charges. When it comes to cybersecurity, cloud service creators provide organizations with a strong firewall for protection. In terms of increased competitiveness, companies have adopted cloud computing technology to improve their service capabilities and have solved the resource and cost issues, allowing them to focus on the service side of the equation. In the long run, it is also an advantage for future growth compared to competitors who have not adopted cloud computing. In terms of enterprise services, cloud computing is more accurate in predicting customer needs, more targeted in developing new products and providing services to enterprises, and clearer in the direction of innovation.

3. Relevant Applications and Developments of cloud Computing in the Enterprise - The Example of Alibaba Cloud

3.1. Cloud Computing in the Enterprise

China's cloud computing market is in a period of rapid development. Data from the China ICT Academy shows that China's cloud computing market will reach 455 billion yuan in 2022, with a year-on-year growth of 40.91% [2]. Organizations can develop their business and compete in the market with the help of IaaS platform, PaaS platform and SaaS platform provided by cloud computing [3]. Currently, there is a growing trend to use cloud computing and artificial intelligence/machine learning in the financial sector. In the healthcare industry, cloud computing enables healthcare organizations to efficiently manage and analyze large amounts of medical data to improve service quality. In manufacturing, improving productivity and reducing costs can be achieved by optimizing production processes through data analytics. In the education industry, cloud computing provides a wealth of online resources and services that break geographical constraints. Alibaba Cloud Enterprise Storage ESSD shrinks to milliseconds in terms of latency and further introduces the ESSD PL-X Cloud Disk, with a maximum IOPS of up to 3 million and a single access latency of as low as 30 microseconds. Customers can apply the high resilience that the Cloud Disk brings and adjust the performance specifications at any time to meet performance requirements. The storage services developed by Alibaba Cloud Enterprise using cloud computing are widely used in railroad 12306, health insurance platforms, etc. to provide services to customers around the world. In a climate where all businesses are thinking about how to make cloud computing technology work for them to enhance their interests, the Alibaba Cloud enterprise has launched a price cut, but it is its core model. This means that utilizing cloud computing to reduce prices and make profits is a step towards pioneering the cost war [4]. Alibaba Cloud in the object storage OSS price reduction of up to 55%, cloud database RDS MySQL version straight from 12%, these are the most widely used by customers of the product. Alibaba Cloud even launched the "0 yuan with the ascension" activity, to 6 generation free to 7 generation. This is the benefits of cloud computing released by Alibaba Cloud. The price cuts in Alibaba Cloud's computing products will allow small and medium-sized business storage to prioritize its products, prioritize penetration into the market, and take advantage of its favorable position. At the same time its drastic price reduction has made it more popular and accelerated the popularization and development of cloud computing in various industries in China [5].

3.2. Applications of Cloud Computing

Alibaba cloud in the application of cloud computing, through the programming of technical talent to achieve cross-platform development, and artificial intelligence, artificial intelligence platform to achieve the perfect combination. In conjunction with the modern enterprise informatization process,

cloud computing technology provides standardized and standardized resource services that enable enterprises or users to quickly access the information resources and business systems they need [6]. The process of cloud computing utilization is that customers can pass data packets to Alibaba Cloud through gateway devices and Alibaba Cloud will store and process the data. After data collection, Alibaba Cloud's IoT platform can realize the flow, storage, analysis and real-time monitoring of equipment data. At the same time, the provision of firewalls for network security to ensure the security of equipment and platform data, as shown in Figure 1. There are hundreds of cloud products and services provided by Alibaba Cloud, which are mainly categorized into elastic computing (cloud server ECS), database (RDB, MongoDB, Redis version of the database), storage (object storage OSS), network (CDN), big data, artificial intelligence, cloud security (Web application firewalls), Internet middleware, cloud analytics, management and monitoring. Alibaba cloud in the application of cloud computing is not just the pursuit of immediate benefits, but the use of cloud computing to launch a single product for a limited time free of charge, so that more technical talent can learn the complete cloud technology free of charge, and cultivate an army of cloud developers, led to the public cloud instead of IT services to become a digital infrastructure. It's going to be a long war, and the growth of cloud developers. Cloud computing technology provides a means of generating resources is the crystallization of a high degree of specialization, one of its main characteristics is the convergence, specificity, and specialization of information resources, which greatly improves and optimizes the management and production capacity and effectiveness of enterprises [7].

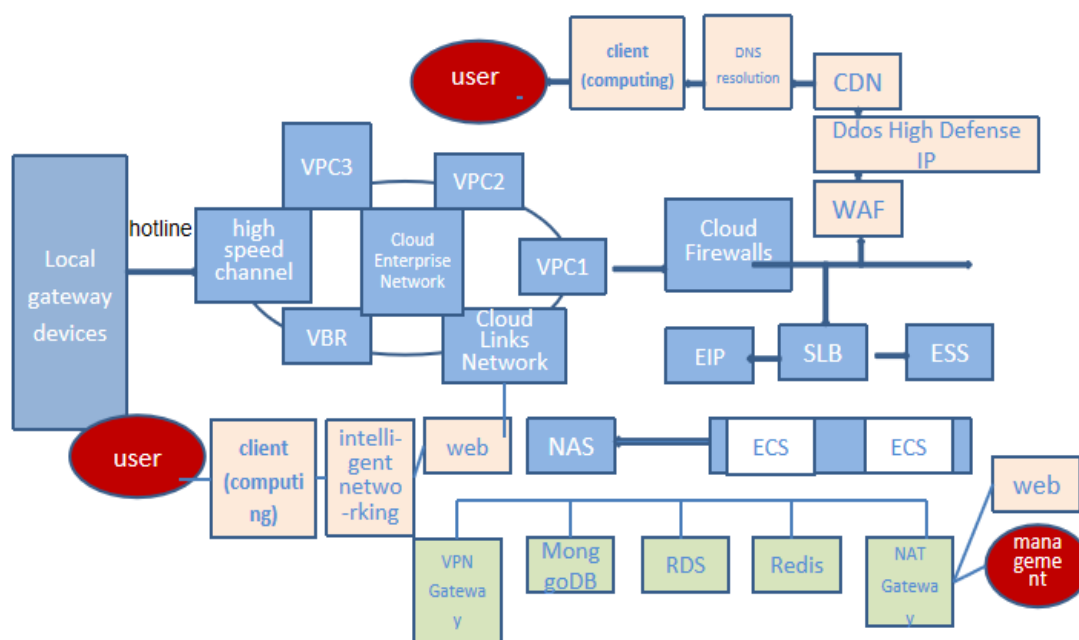


Figure 1. Cloud Computing Application Steps

4. Enterprise Innovation in a Cloud Computing Environment

In today's competitive market, price reduction and technological research and development to become one of the main strategies, in the enterprise, the innovation of cloud computing will invariably bring lucrative profits to technology-based companies. The application of cloud computing technology has also led to changes in the enterprise organization and management mode, and the optimization of enterprise organization structure cannot be separated from the processing and resource integration of cloud computing technology [8]. In the domestic enterprises, Alibaba Cloud from the domestic station to the development of foreign stations, and different from the domestic foreign only need mailbox registration, unlike the domestic need for real-name authentication will be more cumbersome. because of easier registration, Alibaba Cloud's lines can even hang with a few giants like Microsoft, Google, and Amazon. Many foreign companies have been using Alibaba

Cloud's servers, and Alibaba Cloud has launched more cloud server products abroad with multiple nodes around the world. International resources are richer many domestic enterprises have to do business abroad have been relocated to the international station, can be better and foreign businessmen in line. Although the difference between Alibaba Cloud's domestic and international stations is not great, the international station is relatively more convenient and less restrictive, which can save customers a lot of time for parcels in the area. This cloud computing services business is innovating in the sales area of the sales market, opening a whole new market for many businesses.

5. Issues in the Application of Cloud Computing in Enterprises

5.1. Speed of Technological Innovation

In the era of rapid development of computer technology, cloud computing products are also constantly innovating. However, when cloud computing innovation encounters a bottleneck, companies may lose some of their clientele and losses due to competitors' price reduction strategies. Secondly, when enough cloud computing technology is mastered, how to utilize the emerging cloud technology to make profit to the enterprise is also a difficult point.

5.2. Difficulty in Ensuring Network Security

To realize the security of corporate financial information with the help of cloud computing platform, it needs to be clear that the cloud computing platform itself does not guarantee the security of the data, on the contrary, it provides a more flexible way of accessing and sharing resources, which at the same time increases the risk of data leakage [9]. In the era of advanced network information, cloud computing should enhance its technology in protecting user privacy, such as improving the security of firewalls or placing important information on external clouds, and, real-time vigilance to track information security.

5.3. Inadequate Construction of Cloud Computing Platform

The application in enterprise tax planning is still in its infancy, and the slow process of automation and Informa ionization and intelligent construction is not conducive to the full play of the functional value of the cloud computing platform [10]. At this stage, what needs to be solved is the technical shortcomings, such as, the popularization of artificial intelligence, the automation of information entry, enterprises in the use of cloud technology will become more and more widespread, and solving these problems is also an urgent need.

6. Conclusion

The innovation and development of cloud computing has opened possibilities for enterprise information data storage and program development. In the context of cloud computing, the combination of AI with it is an important step for the world to enter a new AI era. However, facing data security is still an important challenge. At this stage, enterprises already have the foundation of cloud technology, cloud computing will not only bring unprecedented flexibility to enterprises, in data storage, processing has a far-reaching impact on enterprises. In the future, cloud computing can lead enterprises to provide quality services and more oriented research and development results.

References

- [1] IDC. IDC: Pressure intensifies under headwinds - China's public cloud services market growth slows in H1 2022. IDC Website, 2022 - 10 - 25. Retrieved from. <https://www.idc.com/getdoc.jsp?containerId=prCHC49797822>.

- [2] Zhang Muchen. MIIT: China's cloud computing industry grows at an average annual rate of more than 30%. Guangming.com (gmw.cn), 2022-09-20. Retrieved from. https://economy.gmw.cn/2022-09/20/content_36037122.htm.
- [3] Chu Jiameng. Analysis of the application of cloud computing in enterprise development. Digital Communication World, 2020, (03): 203.
- [4] Cheng Xin. Cloud computing this year, the song of ice and fire played, the epoch-making door opened. Big Data Times, 2024, (01): 68 - 86.
- [5] Jia Tianrong. Public cloud price wars start with bloodshed. IT Times, 2024 - 04 - 05 (001).
- [6] Zhang Xiaowei. Application of cloud computing technology in enterprise informatization construction. China New Technology and New Products, 2021, (17): 135 - 138.
- [7] Wu, H.S. Development of cloud computing technology and its application in enterprises. Technology And Market, 2016, 23 (07): 189.
- [8] Xu Ling. Research on Management Innovation of Small and Medium-sized Enterprises Based on Cloud Computing Technology Environment. Information and Computer (Theoretical Edition), 2022, 34 (07): 219 - 221.
- [9] Hu Weisi. Application of cloud computing platform in enterprise financial information management. Guangdong Economy, 2023, (08): 11 - 13.
- [10] Teng Hong. Exploration of the application of accounting cloud computing in enterprise tax planning. Investment and Creation, 2024, 35 (01): 113 - 115.