Discussion on Management Mode of Financial Data Center Project Construction

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Abstract: The configuration management system of financial data center is the core and foundation of financial institutions' service management based on information technology infrastructure library. The increase of system equipment in different periods and various application systems based on different platforms bring about management, security, compatibility and other problems, resulting in reduced availability, high energy consumption and difficult management of IT support. With the rapid development of economic globalization and information technology, the ability to use and manage data and information is evolving into the core competitiveness of enterprises for sustainable operation and development. In the process of current social development, the degree of informatization is gradually deepened, and the speed of information resource integration of various industries needs to be accelerated on this basis. The construction of data center is widely concerned and valued. In the face of the development trend of mobile Internet, cloud computing, big data and other information technologies and the new normal of production and operation, we should focus on improving the overall service capacity of the data center to achieve all-round and refined operation management.

1. Introduction

With the rapid development of China's financial industry, the process of banking informatization is accelerating, which also brings a series of new problems to IT service management. The increase of system equipment in different periods and various application systems based on different platforms bring about management, security, compatibility and other problems, resulting in reduced availability, high energy consumption and difficult management of IT support [1]. With the rapid development of information technology, the traditional data center construction can no longer meet the needs of the market and needs to use the new data center developed on the basis of new technologies [2]. Among them, when selecting the data center construction mode, the data center with higher security and more flexibility needs to be selected [4]. In the face of rapid business development needs, rapid iteration of technological innovation, and stricter regulatory requirements, the Bank has set extremely high requirements on the technology, quality, and security control of bank data center construction and operation [5].

IT service management processes and supporting management systems have been increasingly adopted by users of automated process management platforms. However, the configuration management database that is the basis of the data information of these process systems often collects and maintains data manually, and lacks a unified model concept [6]. Data center operation management is a complex and comprehensive system engineering, which has both management and technical levels, involving strategic development, IT governance, operation and maintenance management, operation and other aspects [7]. Data center construction is a huge system project with extremely high requirements. From demand planning to design, to specific site selection, infrastructure design and construction, we must achieve the best among high availability, safety, cost, time and other factors. Good balance [8]. A data center that can solve problems such as cost, efficiency, security, and management has gradually become an inevitable choice for Chinese financial companies.

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2. Design and Implementation of Technical Architecture for Data Center

The data center is usually a complex facility formed by combining multiple servers and communication equipment in a certain physical space. The financial data center is mainly a data center carrying the core business of financial institutions. The amount of various IT resources in the data center is huge and the management is complicated. Therefore, IT is necessary to adopt forward-looking and practiced IT construction strategies, adopt advanced product technologies, change backward and inefficient resource management with dynamic and optimized infrastructure, maximize the use of resources, and improve the efficiency and flexibility of business systems. Information technology has given birth to new financial services and formats. While improving the quality and efficiency of financial services, its cross-border operations and complex business models often lead to the continuous renovation of the forms and connotations of financial risks [9]. From a business perspective, optimizing the performance of configuration items can improve the overall service performance and optimize the costs and risks caused by poorly managed assets. Configuration management can accurately display services, releases or environments to support better prediction and planning of changes. The prominent problem in the traditional data center is that the power consumption is relatively large. When the data center is running, it often needs relatively large power as support.

In serving the real economy, finance should not only develop in the industry, but also integrate financial capital into the development of the real economy. Different fund uses require different financing methods, which should be understood by the financial service real economy in many aspects. The operation environment and data environment of the financial data center and disaster recovery center adopt synchronous backup mechanism to ensure real-time and effective backup. Although the amount of funds deposited in the payment platform of Internet finance is very considerable, it is still far from the amount of funds in the entire financial system. With the entry of new technologies such as big data and artificial intelligence into the financial field, China's initial Internet finance has been transformed into financial science and technology from some financial science and technology businesses. With the continuous emergence of innovative financial products and the rapid development of the economic environment, we will not only face greater risks, but also face more choices of risk varieties. Configuration management should consider the potential risks of the service, meet the service level required by the service delivery contract or internal agreement, and meet the requirements of availability reliability and reasonable cost performance. Due to the one-sided pursuit of security in the development process of financial industry data centers in the early stage, when using electricity, the consideration is not comprehensive enough, and the energy consumption and load of electric power are relatively high.

3. Management System Construction of Data Center

When consumers choose certain financial products or services, they should give full play to the functions of financial industry associations and consumer associations, and earnestly safeguard and protect the legitimate rights and interests of financial consumers. The complexity of IT infrastructure has been hidden and automated and optimized. In addition, standardization and automatic execution of policies and processes can be realized through service management, thus improving operation efficiency. From a global perspective, the integration of data sets and applications has become the development trend of information construction in large international commercial banks. In the transmission path of monetary policy, the influence of bank liabilities and assets will be less dominant, and some financial science and technology companies that affect the creation and derivation of money will also enter the transmission path of monetary policy. The greater the price volatility of risk-free assets, the smaller the information value. Data center design has a relatively important influence in the financial industry, and the application of modular construction mode is currently widely used in some data centers in the financial industry. The establishment of a centralized data center can quickly respond to market and customer needs and

realize intensive marketing and expansion. Since the market benchmark return rate and inflation rate fluctuate constantly in different periods, financial institutions will constantly adjust their expected return rate. Financial institutions should strengthen the awareness of information protection and data security, strengthen the basic management of financial information, and improve the refinement level of information management.

In the overall planning of the data center, zones are divided according to different usage functions and independent buildings are built. Energy consumption and heat dissipation management can be arranged for each functional area according to actual needs. The facades of the data center buildings all adopt glass curtain walls, and outside the glass curtain walls are equipped with mechanically driven vertical sunshade louvers. The temperature of IT microenvironment is flexibly adjusted in the computer room through a precision refrigeration system, and the system automatically monitors whether the temperature and humidity of the computer room are suitable. Through dynamic monitoring, refrigeration is accurate to every node. At the beginning of the construction of the data center, the organization was new, the personnel were new, the management experience was insufficient, and it was still in the initial stage of development. The production and operation work did not have mature supporting practices and experience, and the production and operation management system, process and standard were not perfect [10]. The overall idea for the construction and development of the data center in the coming period is: focus on the strategic goal of building excellent large listed banks, aim at the international first-class data center, always adhere to safety in production as the first priority, focus on the prevention of operational risks of information systems, deepen the integration of production and operation of the whole bank, continuously improve the operational management level and risk control capability of the data center, and provide solid and strong technical support and guarantee for a bank to realize its business development strategy.

4. Conclusion

With the booming development of various businesses in the financial industry, especially with the increasingly active financial market transactions and the increasing demand for regulatory statistics, the financial industry is increasingly demanding high availability and lower operation and maintenance costs for infrastructure and application system IT operation and maintenance. The data center is continuously developing, and the theory and practice of operation management are continuously enriched and perfected. It is not only a summary of the early development stage, but also a guide for the future development stage. When designing a data center, its capacity usually consists of demand capacity and future expansion capacity. If the whole capacity is deployed at one time, the investment is relatively large. In the process of data center modular construction, the solution can be deployed on demand, so as to promote the efficient expansion of data information content. With the continuous deepening of the operation integration system, the production and operation departments need to further strengthen the research on the evaluation indicators of the operation system, promote the application of safe and controllable technology and new technology, accelerate the construction of automation tools, and strengthen internal and external cooperation and production and operation exchanges with the same industry.

References

[1] Li Chonghui. Research on the application of modularization in the construction of data center computer room in the financial industry. China Financial Computer, vol. 000, no. 004, pp. 62-68, 2015.

[2] Xie Yiqing, Hu Yien, Ye Qiqing, et al. Research on the risks and countermeasures of financial industry data center escrow. Shanghai Finance, no. 09, pp. 115-116, 2015.

[3] Yu Jie. Analysis of excess readings of residual current detection instruments in data centers of financial enterprises. Modern Building Electric, vol. 007, no. 004, pp. 18-23, 2016.

[4] Lu Jianhua. Fintech promotes the transformation and development of data centers. China Financial Computer, vol. 000, no. 007, pp. 29-31, 2018.

[5] Hao Jianming, Ma Pingqing. Establishment and Application of Financial Data Center Operation Quality Model. China Quality, vol. 000, no. 002, pp. 95-96, 2015.

[6] Cao Xiaogang. Interpretation of New National Standard Energy Conservation and Thoughts on Building a Green Data Center in the Financial Industry. The era of financial technology, vol. 026, no. 005, pp. 24-27, 2018.

[7] Wang Xiang. On the location and feasibility analysis of financial data center project planning. Architectural Design Management, vol. 036, no. 007, pp. 54-56, 2019.

[8] Yang Song, Zhang Yi, Xue Baoming. Application Research of Big Data in IT Operation and Maintenance of Financial Data Center. Modern Information Technology, vol. 002, no. 007, pp. 99-100, 2018.

[9] Li Kang. Construction practice of distributed multi-active data center in financial industry. Jiangsu Business Review, vol. 000, no. 012, pp. 104-105, 2018.

[10] Xu Bin, Fu Weidong. Design and key points of a comprehensive wiring and security system for a financial data center. Intelligent Building Electrical Technology, vol. 011, no. 005, pp. 68-73, 2017.