

Discussion on University Data Governance Strategy in Big Data Environment

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Abstract: With the continuous development of big data technology, the data center has been gradually established in Colleges and universities, which effectively improves the problems of self governance and information isolation. The data provided by the data center mainly comes from various basic business systems. The information of each business system has been unable to be shared and updated in real time, so it is difficult to obtain high-quality data. Therefore, colleges and universities must focus on the management of the system data.

After the continuous development of Internet technology, the needs of users have changed. In Colleges and universities, the sub business systems are interconnected. At the same time, the links between the sub business systems are very wide, and they can share data and carry out valuable interaction. On this basis, they can promote the long-term application of big data in Colleges and universities. This paper takes big data as the background to study the measures of governance of university data for reference.

1. The Defects of Data Governance in Colleges and Universities

(1) Lack of uniform data standard at school level

There are many reasons that make it difficult to share data. Although colleges and universities have established data standards at the school level for a long time, due to the different departments responsible for the construction of the system, the management mode, planning and standards adopted by each school are also different. Each department only establishes a set of data standards for its own department according to its own needs, even if the corresponding standards are formulated, It is also difficult to make real application in various systems. Under the influence of such factors, the same person may appear in different departments with more than one name, without unified management. In addition, the use of static standards, the school in the standard update, not combined with the actual management and construction, so it is unable to achieve the "unity" of dynamic standards. For example, up to now, some business systems can't connect to the

school unified identity authentication platform because they can't unify the system accounts, so students and teachers need to carry out complex operations [1].

(2) There are duplicate and redundant data

When setting up the application system, each department only combines its own needs, and does not consider the construction of the whole school. When carrying out partial construction, different personnel are arranged to maintain the same data. Therefore, it is impossible to distinguish the basic source of the data. There are a lot of redundant data, and there is no strict survey data flow direction and data source unification, It has a serious impact on the quality of data, and ultimately makes the data can not be shared, and also can not provide effective data for future data analysis work.

(3) No historical archive data

Due to the early construction of some systems, when changing the data, the method of directly modifying the original data is adopted, and the original data will be covered after saving, so it is impossible to view the historical data and provide sufficient historical data for data analysis [2].

(4) Lack of high quality source data

In the use of various business systems, if the data can not be completely filled in, and there are too many duplicate data and no standard input data, other systems will receive "unauthorized" data. And then lead to the emergence of cross infection, forming a large number of low-quality data, unable to provide effective data for future data analysis.

2. Key Big Data Application Technology in Colleges and Universities

(1) Standard management code technology

The most important big data technology applied in Colleges and universities is code, which can promote the improvement of campus management level and plays a very important role. During the application of big data, colleges and universities need to add, enable and split various codes, so as to meet the management needs of colleges and universities, and greatly improve the management level of colleges and universities. At the same time, through the record of the code, we can realize the change of the log, which provides support for the campus managers to track the code standard of the change.

(2) Manage metadata

The management of metadata can guarantee the stable operation of the database and the effective operation of the campus platform. In the management of metadata, it is usually necessary to add, delete and modify metadata with the help of professional management tools, so as to ensure that each region can form consistent data and ensure the good sharing of data information within the University. In addition, through the management of metadata, it can ensure the scientific and rationality of metadata classification, and reduce the difficulty of data adjustment and query for university administrators [3].

(3) Backup data and establish data history database

During the application of big data technology, colleges and universities usually need to back up the data and store the corresponding data information in the internal. It can not only make the data information get better storage, but also ensure the integrity of the data information, but also reduce the difficulty of analyzing the data. It is easier for University Department personnel to carry out their own work, and ensure the orderly and effective development of University experience.

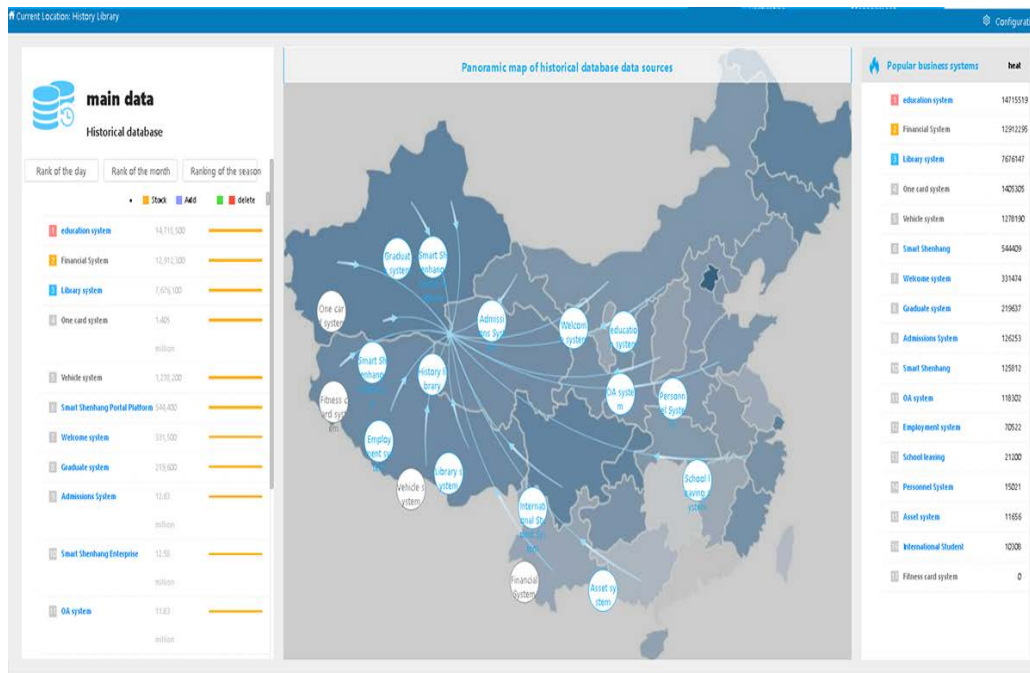


Figure 1: Backup data and establish data history database

(4) Test quality

The use of monitoring system in quality inspection can greatly improve the management level of colleges and universities, and ensure the long-term and orderly application of big data technology in Colleges and universities. Through the application of data real-time monitoring technology, it can comprehensively monitor the whole database and the status of data integration. Through the integration of quality detection technology, we can use graphics and text to show the operation status of internal data in Colleges and universities, and college personnel can understand the operation status of various components in the campus at a glance. If the abnormal data is detected inside the University, the alarm will be sent to the staff at the first time, which creates a good maintenance guarantee for the campus platform.

3. Governance and Development Trend of Big Data Technology in Colleges and Universities

(1) Data management

When universities apply big data technology, they need to focus on data management. We need to have a deep understanding of data collection and exchange in all aspects, and establish a complete mechanism for data management and service, so as to help college teachers and students in their daily life. After the establishment of relevant processes, it can improve the standardization and scientific application of big data technology in Colleges and universities. It can not only apply big data technology more widely, but also provide written constraints and standardized systems for big data technicians, which will give full play to the role of big data in Colleges and universities [4].

(2) Information security

Colleges and universities not only need to pay attention to big data technology from the aspect of practical application, but also need to pay attention to the sharing of information within colleges and universities, and need to do a good job in the confidentiality of various data. Internally, through the sharing of information, it can promote the collaborative work of various departments in Colleges

and universities, and then improve the overall efficiency of the work. And it can provide more powerful confidentiality work for data information, so that teachers, students and schools can be free from violations, and provide a stable guarantee for the long-term use of big data technology in Colleges and universities [5].

(3) Visualization data

Visualization data is a major feature of colleges and universities during the application of big data technology, and it is also the key point to improve the management level of colleges and universities. Using images to convert all kinds of data information can show the relevant data information more intuitively. According to the operation situation, the staff can deepen their understanding of colleges and universities. Because of the authenticity and effectiveness of such data, it can promote the development of their future decision-making work. Although the visualization data has been widely used in Colleges and universities, but this function has not been mature development, in the display of data image, still can not achieve high-speed processing and accurate image presentation, so technical personnel need to do a good job in-depth optimization.

(4) Image recognition

Through the use of image recognition function, we can collect each student's data comprehensively and completely in Colleges and universities, and can store and process such collected data information independently. After the accurate analysis, we can have an in-depth understanding of each student and the data from the basic information and ranking. After combining the unique characteristics of each student, college teachers are able to carry out targeted training for students, so as to improve their comprehensive ability and provide strong support for the development of various works in Colleges and universities [6].

4. Conclusion

Data quality is the most important factor in horizontal operation data and vertical in-depth analysis of mining data. The most important content of data management is data quality and data governance, which can provide necessary support for all kinds of data activities. Only through the improvement of data quality can we provide valuable and effective basis for the decision-making of colleges and universities.

References

- [1] Wu Gang, Chen Guixiang. *University big data governance operation mechanism: functions, problems and improvement countermeasures*. *University education science*, 2018, 000 (006): 34-38, 66
- [2] Yang Lin, Gao Hongmei, song Jundian, et al. *Research and application of data governance framework in big data environment*. *Computer applications and software*, 2017, 34 (004): 65-69
- [3] Wang Guoyi. *Analysis of information security problems and Countermeasures in university big data governance under smart campus environment*. *Science and technology innovation guide*, 2020, V.17; No. 509(05):135-136+138.
- [4] Ren Gang, Shu Chang, Wang Dong Hong. *Big data governance and application strategy in smart campus environment*. *China Hi tech*, 2020, No.77 (17): 134-135
- [5] Zhang Yunhao, Meng Jia. *Analysis of data governance methods in Higher Vocational Colleges under big data environment*. *Modern economic information*, 2019, 000 (036): 440
- [6] Wang Xin, Wang Yu, Zhao long, et al. *Network security strategy of data governance in the context of big data*. *Communication power technology*, 2019, 036 (011): 147-148151