

# *Thoughts on Digital Management of Engineering Archives*

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**Abstract:** In the information age, scientific and advanced big data technology has become an effective tool to promote the digital transformation of all walks of life. The production and development of all fields are inseparable from its core drive. It can not only improve work efficiency and quality, but also create more and more value. Nowadays, digital archives has gradually become an important link in archives management, especially various carrier materials of engineering archives. The construction of archives management system through digital technology promotes the transformation of management links from complex and cumbersome to simple and convenient. With the rapid development of the Internet and the continuous optimization and updating of big data technology, engineering archives managers need to have higher management requirements to carry out archives digital management. Facing the opportunities and challenges of the new era, they need to constantly strengthen learning management technology, promote their own progress and effectively improve the efficiency of Engineering management. Based on this background, this paper analyzes the significance of archives digitization, explores the importance of engineering archives digital management, and puts forward some management strategies to promote the high efficiency and high quality of engineering archives digital management, so as to hope that engineering archives managers can learn from it.

## **1. Introduction**

Engineering archives are a large number of archives involved in the process of engineering construction and management, which affects the construction, acceptance and management of engineering projects. Due to the high complexity of engineering archives and the diversity of carrier materials, it also means that strengthening the management of engineering archives is a common requirement for the completion of project construction. In the past, engineering archives were often archived and preserved in paper form, which requires a lot of human support in the process of data collection, sorting and management. At the same time, the space, humidity, temperature and other conditions of the storage environment have high requirements. In the long run, it not only wastes human and material resources, but also affects the search and management of subsequent archives. Therefore, using digital technology to store and back up engineering archives is a necessary means in the process of engineering project construction. Digital system management is conducive to the standardization, standardization and scientization of management, and finally promote the long-term

and stable development of engineering project construction.

## **2. Significance of Archives Digitization**

Archives digitization is of great significance from the perspective of management. With the continuous development and change of advanced science and technology such as Internet, big data, cloud storage and cloud computing, people develop various software and equipment to improve the quality of life and work efficiency, especially archives management, and flexibly use digital technology to promote the transformation of paper archives into digital archives, which not only broadens the management mode of archives management, but also plays an innovative role in management [1]. The increase of engineering projects in China has led to the continuous increase in the number and quantity of archives, and the requirements for project archives management are becoming more and more strict. Among them, the efficiency of archives management has an important impact on the timely completion of follow-up engineering construction. If the traditional paper form of management is continued, it will not only consume more human and material resources, but also hinder the development of archives management. The amount of paper materials is large and complicated, which increases the query time. In addition, the paper form is easy to be lost, and the digital archives can effectively avoid these problems. Digital archives rely on the Internet and information technology. Cloud service can be realized only by establishing archives database or cloud storage space. The data needed in the process of project construction can be queried anytime and anywhere through retrieval tools [2]. Digital archives are stored in the cloud. The interaction of time and space is conducive to data sharing, and the digital management of archives tends to be scientific and standardized, so as to maximize the utilization of resources.

## **3. The Importance of Digital Engineering Archives Management**

### **3.1. Conducive to Saving Human and Material Resources**

In terms of traditional management, when the amount of engineering archives is large and complex, managers need to spend more time on collection, sorting and management to increase human resources. Engineering archives use advanced computer equipment to realize data scanning, input and storage, which is conducive to the development of archives management towards automation and real-time, and fundamentally save human and material resources. The project archives are stored in the Internet database, and those who need them can search and use them repeatedly. Compared with the time-consuming and labor-consuming traditional paper archives management, the digitized archives can give full play to their value, so as to further improve the resource utilization rate [3].

### **3.2. Conducive to Resource Sharing**

Resource sharing relies on computer and big data technology to promote information sharing among multiple users from hardware and software resources. Engineering units or enterprises should have a long-term vision in the digital management of archives, deeply understand their advantages, gradually establish a unified archives management system, and make use of the progressiveness and real-time nature of the system to realize resource sharing before and after the construction of various engineering projects. The larger the scale of archives digital management system, the higher the utilization rate of resources, and the more effective the project can be. Nowadays, China's archives digital management still needs to break through the obstacles of traditional management methods, gradually establish a perfect digital management system under the characteristics of traditional archives management, promote the improvement of data retrieval, management and service, make the

digitized archives obtain scientific, standardized and institutional management, and finally improve and give full play to the maximum value of resources [4].

### **3.3. Conducive to Improving the Efficiency of Project Management**

In the process of project construction, archives resources are used in the whole process. Therefore, high-level and efficient archives digital management is needed to meet the long-term development of the project. The whole process digital management of engineering archives is conducive to improving the efficiency of Engineering Management in the information environment [5]. The text, image, audio and other resources in the project archives play a role in boosting the process of the project. In order to accelerate the process of project construction and obtain information and data quickly and accurately by data users and managers, it is of great significance to implement archives management with the help of digital technology. The digital management of engineering archives can efficiently integrate and analyze resources to effectively meet the long-term development of engineering projects with long life cycle. In addition, the improvement of management efficiency greatly improves the efficiency of project construction.

## **4. Strategy of Digital Management of Engineering Archives**

### **4.1. Establish Engineering Archives Database**

The construction of engineering archives gradually realizes the data management, and its focus is to establish the archives database. Each engineering project corresponds to the archives resources of each content. In order to ensure the development of archives management towards informatization and automation, the form of archives data management is imperative. Among them, the establishment of archives database is the key content, which is conducive to the continuous compliance of archives management with the development of the times [6]. The establishment of engineering archives database is not overnight. In order to do a good job in the preliminary work, the engineering management personnel should formulate relevant plans and set up scientific and reasonable plans. At the same time, they also need to analyze, sort out and summarize according to the existing archives resources, and then implement the installation of database management system in combination with the current economic and technical aspects, so as to finally ensure the digital storage, use and management of archives. The establishment of engineering archives database is an important link of innovative archives management. Digital archives storage can realize fast and convenient retrieval. At the same time, in order to ensure the scientific and reasonable development of management work, it is necessary to formulate relevant management systems, strengthen the management level and ability of managers, and improve the practical value of archives management.

### **4.2. Introduce or Develop Engineering Archives Management Related Software**

The efficient development of engineering archives management requires the introduction or development of engineering archives management related software. The support of management software can not only improve the digital management level of archives, but also promote the more standardized and standardized management. The Internet is developing rapidly. In the process of engineering archives management, information equipment and software should keep up with the development of the times and ensure that relevant configurations are at the forefront of science and technology, so as to enhance the modernization level of archives management. The normal operation of archives management software depends on network technology. Its main advantage lies in resource sharing and organic cooperation. In short, it can realize the transparent, open and interactive use of

resources. Therefore, archives management departments need to deeply study and flexibly use management software, which is conducive to improving the level of archives resource management and information utilization. On the one hand, introduce advanced scientific and technological management software, change the existing management mechanism and economic structure, promote the maximum role of engineering archives information resources, and improve the quality of archives management; On the other hand, the development of engineering archives management software is more conducive to managing the characteristic engineering projects of the unit. Taking the characteristics as the starting point, improve the R & D process and ensure that the management platform meets the actual requirements.

### **4.3. Strengthening the Safety and Supervision of Digital Management of Engineering Archives**

As an important part of engineering project construction, the digital data of engineering archives should be strictly stored and managed to ensure its safety, so as to better promote engineering construction and acceptance. Therefore, the establishment of safety and supervision mechanism is an important management work. On the one hand, the engineering archives management department can ensure the security of resource storage through electronic document backup. Because the data information of electronic documents depends on network resources, it is necessary to set up intranet and extranet mechanisms, set up security keys to ensure users' safe retrieval of resources, and introduce advanced firewall technology to prevent file resources from being polluted or invaded, so as to improve the network security protection and management of file resources; On the other hand, establish a remote supervision system of digital archives resources, use cloud services to strengthen the concentration and interaction of digital resources, and promote the safe and effective use of archives resources, so as to effectively improve the efficiency of archives management [7]. The engineering archives management department also needs to reasonably set up a safety management responsibility mechanism to promote file users and managers to abide by unified management steps, effectively strengthen the implementation of responsibilities to individuals, and further ensure the safety and integrity of file digital resources.

### **4.4. Ensure that the Digital Management of Engineering Archives is Consistent with the Project Construction Progress**

In the process of digital management of engineering archives, the management department needs to make it clear that the archives management is consistent with the project construction progress. During the construction of the project, the archive resources are constantly changing. The archive resources are updated synchronously to ensure the progressiveness of digital resources in the database, so that the collection, sorting and management of archives can be carried out efficiently, and the management process and efficiency can be further improved. Especially for key projects, the digital management of archives needs to pay attention to the management process, improve the priority of project archives management of key projects, implement the digital storage and updating of archives at the first time, and improve the sharing and utilization of archives resources. The archives management department also needs to pay attention to the management of the same type of archives, further classify and preserve the same resources, and design different naming methods of electronic documents to ensure the accuracy of digital resource retrieval. In addition, for the update of archives resource management before and after construction, it is necessary to do one after another to ensure the unified preservation of electronic documents of a project and avoid inconsistency and repetition.

## 4.5. Strengthening the Cultivation of Digital Talents of Engineering Archives

Talent training is of great significance to the needs of occupations and posts, especially for highly professional engineering archives management posts. Excellent management team is conducive to accelerating the construction progress of engineering projects, introducing talents, strengthening training, and promoting the effective improvement of talent management ability and professional quality. Digital talents are important human resources for the rapid development of modern information technology. Engineering archives management shoulders the important work of project construction management, and it is more necessary to strengthen the training of digital management talents [8]. First, introduce digital talents through university cooperation, select talents with excellent professional skills, high professional quality and strong potential, strengthen the cultivation of management knowledge, and ensure sufficient talent reserve in the actual construction progress of the project. Secondly, introduce management talents through recruitment and direct employment, carry out pre job training and education, and cultivate them according to the actual management needs, so as to improve professional skills and management ability at the same time. Finally, regularly carry out all staff training activities to promote the overall improvement of professional quality and management level of the staff of the management department. In the training process, set up an assessment mechanism, take the digital theoretical knowledge and practical management knowledge as the assessment point, and include the training score in the performance assessment, so as to stimulate the enthusiasm and sense of responsibility of the managers.

## 5. Conclusion

To sum up, the construction of digital management of engineering archives should keep up with the development of the times, list the digital management of archives as the key development direction, and promote the digital management of engineering archives with standardized and standardized management requirements. The development of digital technology promotes the development of engineering archives towards automation and information management. This paper analyzes the significance of archives digitization and explores the importance and relevant strategies of engineering archives digital management, so as to hope that the engineering archives management staff can improve the management efficiency and quality.

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