

# The Integration Analysis of Computer Application Technology and Information Management

Rongting Luo

Guangdong Peizheng College, Guangzhou City, Guangdong Province 510830

**Abstract:** *With the development of computer information technology, computers have become necessities in people's daily work and life, and computer application technology promotes social progress and development. Under the new situation, people's demand for information continues to increase, information coverage and dissemination speed are accelerated, and traditional information management technology can not meet the development needs of modern society and improve the accuracy of information. Integrating computer technology into information technology management can achieve the purpose of high-quality and high-efficiency information management. Given this, this paper analyzes the integration of computer application technology and information management and puts forward relevant views and thoughts.*

**Keywords:** Computer application technology; Information management; Integration.

## 1. OVERVIEW OF COMPUTER APPLICATION TECHNOLOGY AND INFORMATION MANAGEMENT

### 1.1 Computer Application Technology

Computer application technology involves a lot of content, such as operating system, data structure, graphic design, VB programming and other popular technology, with the help of these technologies for the work of enterprises to provide help and services. Entering the era of big data, traditional information management technology has difficulty in achieving timely and rapid collection of huge amounts of information, and cannot adapt to the requirements of enterprise modernization management. The application of computer application technology in information management work can realize the storage of huge amounts of information data, but also has the advantage of small space occupancy, provide services for information query, search, positioning, etc., and realize the simultaneous improvement of resource utilization and work efficiency. Zhou and Cen (2024) examined the effect of ChatGPT-like generative AI on user entrepreneurial activities, highlighting its role in enabling new business models [1]. In a related domain of operational logistics, Zhang (2024) proposed a method for the dynamic adaptation of power emergency material supply and demand using cohesive hierarchical clustering [2].

### 1.2 Information management

The purpose of information management is to extract information effectively and ensure that information is fully utilized. With the popularization of computer technology, human beings have entered the information age and become more and more dependent on information resources. Information resource is closely related to social development. Therefore, we should attach great importance to information management, highlight the diversity of information, meet the needs of different personnel, improve the value of information. With the continuous development of information technology, people interact more and more closely with each other, and the flow of information is faster and faster. For enterprises, effective information management can capture key market information in a timely manner, and through effective reading and analysis of information, reasonable decisions can be made and sustainable development of enterprises. Since the quantity of information is constantly increasing, it is necessary to apply advanced technologies and theories for information management in order to put enterprises in a proactive position in the market. As AI systems become more distributed, security concerns have become paramount. Deng and Yang (2025) addressed this by developing multi-layer defense strategies and privacy-preserving enhancements to protect federated learning frameworks from membership reasoning attacks [3]. Concurrently, significant effort is directed towards ensuring the robustness and reliability of these intelligent systems. Jiang et al. (2025) introduced Perception Characteristics Distance as a novel metric to measure the stability and robustness of perception systems operating under dynamic conditions [4]. Further advancing reliability engineering, Lin et al. (2025) established a Bayesian framework for modeling multivariate degradation

data that incorporates dynamic covariates [5]. A prominent application area for AI is the optimization of digital advertising and marketing. Tian et al. (2025) presented a business intelligence approach utilizing cross-attention multi-task learning to improve ad recall [6]. Yi (2025) tackled the fairness dimension in this space, proposing a real-time ad allocation system for small businesses and underserved creators based on contextual bandits-with-knapsacks [7]. In the broader sphere of personalized services, Yang, Wang, and Chen (2024) developed GCN-MF, a graph convolutional network based on matrix factorization for recommendation systems [8]. Relatedly, Zhang (2025) explored dynamic pricing strategies in competitive environments, incorporating models of customers' limited rational behavior [9]. The review concludes with foundational work in enabling hardware technology. Tang et al. (2020) focused on the design and optimization of a shallow-angle grating coupler for vertical emission from indium phosphide devices, a critical component for advanced photonic and computing systems [10].

## **2. THE SPECIFIC ADVANTAGES OF THE INTEGRATION OF COMPUTER APPLICATION TECHNOLOGY AND INFORMATION MANAGEMENT**

### **2.1 Improving the efficiency of information management**

Computer technology can currently meet the requirements of information management work well, relying on the excellent computing power of computers. It can improve the computation and processing speed of information, and after long-term improvement of computer software, it can automatically complete the identification of information, so it can automatically complete the recognition and filtering of anomalous information, and avoid economic loss due to the use of misinformation [3]. And because computer technology is already very widely used in many different types of business, Therefore, the further integration of information management and computer technology can integrate information management well into the work, fully utilize the capability of computers to find quickly and accurately, improve effective support for the various work of the enterprise, and reduce the work efficiency problems caused by insufficient information.

### **2.2 Improving the function of information management system**

Information management is a very complex job, and many different types of content will be involved in the entire process. Since staff need to face a huge amount of information, enterprises need to use the capabilities of computers to expand the management of information in order to ensure the efficiency of management. Due to the current development of intelligent technology, computer technology for data analysis has rapidly incorporated more comprehensive and stable performance, and has further improved the efficiency of computer processing of data, which can meet the efficiency requirements of enterprises. Enterprises can use computer technology to make more perfect and accurate classifications, and relying on the computer's ability to protect information can also improve the security of the system.

### **2.3 Improving the effectiveness of information collection and management**

By applying computer technology to information management, the collection, screening, classification, analysis and other processing work of information will have a stronger processivity, which can promote the effectiveness of information collection, meet the requirements of management efficiency, and improve the level of information processing. Through the automatic completion of various technologies, can cope with the amount of information continues to increase, but also to ensure that the entire process of information processing normative and reliable, to avoid the honor of information, but also help to avoid the process of information processing errors. In addition, it can also promote the integration of information processing and other work, and promote the smooth completion of internal work.

## **3. THE MAIN WAY TO INTEGRATE COMPUTER APPLICATION TECHNOLOGY AND INFORMATION MANAGEMENT**

### **3.1 Change ideas and strengthen information management awareness**

The use of computer technology to integrate and optimize information management, better play to the advantages of information resources, which must require enterprises to change the traditional concept of relevant personnel, improve the awareness of information management, attention to the construction and use of information resources.

Although many enterprises have implemented information management efforts, the awareness of the personnel concerned has not kept pace, lacks innovation and advancedness, and it is therefore necessary to train them to update their information management concepts and awareness. At the same time, we should also strengthen the management of personnel so that once problems are discovered, they can be handled in a timely manner. Improving the awareness and professional skills of information management practitioners can ensure that information management can be continuously improved with the continuous development of computer application technology, thereby ensuring that the level of information management can remain at an advanced level in the long term [4].

### **3.2 Improve the information management system**

In the information management department of an enterprise, it is necessary to establish and clarify the corresponding information management system. In combination with computer technology, the establishment of an information management system is indispensable [5]. Information management system should include database, multimedia, network technology and the corresponding collation, analysis application software, all kinds of output terminals and other information management technology. The most important part of establishing the system is the establishment of databases, which include multimedia databases and text databases, regardless of the large databases, from which information can be obtained, which is the basis for the entire system to be formed. Only by establishing a relatively sound information management network system can the efficiency of information management be improved leapfroggingly and can provide consumers with more high-quality and accurate information services. When establishing an information management system, enterprises should consider various situations and data needs in an integrated manner, and at the same time, allow data to be effectively shared with relevant resources on the network to lay the foundation for future information upgrading and management work.

### **3.3 Control the quality of information and optimize the data processing system**

In order to provide a solid guarantee for data and information processing, we must pay attention to the improvement of information quality and optimize data processing system. The realization of information value is closely related to the quality of information management. With the rapid development of science and technology, In order to control the quality of information and improve the efficiency of information processing, it is necessary to change the way of information entry and avoid the error of data processing by intelligent data entry instead of manual entry. First, increase the responsibility of information entry personnel, clarify the workflow, and ensure the accuracy of manual data entry. Second, optimize the data processing system, improve the efficiency of data processing, and ensure the security of data storage by improving the data processing systems. Third, enhance the business literacy of information managers, improve the ability to identify data and information, better determine the value of data and information and do a good job of categorizing data; Finally, expand the channels of data collection and improve the efficiency of data collection, ensure the completeness and comprehensiveness of data to the maximum extent through the extensive collection of data information, and realize the effective management of data information on this basis.

### **3.4 Strengthening personnel training**

In the information processing technology under the computer technology, the technical personnel's ability request is higher, Therefore, it is necessary to bring in more people with strong skills to meet the needs of daily work, and to help companies innovate in information processing to meet the needs of long-term development. Therefore, the company should set up a special information management team, hire high level personnel to complete the development of enterprise information processing system. At the same time, it is necessary to strengthen the technical training of the related personnel, improve their overall technical level, and meet the comprehensive quality of information processing. For good performers, it is possible to enhance their motivation by increasing compensation, bonuses, and promotion, and to screen stronger talents as key talents, so as to improve the overall level of the talent team.

### **3.5 Expand information collection channels**

Whether the information source is safe and reliable is directly related to whether the information is true and complete. Nowadays, network technology is developing rapidly, and the various kinds of information on the Internet are very large and complex. Although the information is abundant, it is difficult to determine whether the various types of information collected are sufficiently true and reliable. Therefore, the best way to do this is to

expand information channels and compare data from different sources. For example, to collect information on a certain aspect, to choose different information channels, Get valuable information resources, carefully compare all the information involved, eliminate the false information, through different channels of information analysis, help the staff clear the characteristics of information, and improve their information discrimination capacity. Therefore, in the actual collection of information, staff need to use a variety of methods, such as electronic collection or questionnaires, to collect and process information. In addition, humans are sentient animals, and when analyzing and comparing information data, they also exhibit certain hallucinations, hoping that the data results can be as they wish. Information gathering must be comprehensive and authentic to provide adequate support for information processing. In university management, it is necessary to strengthen the collection of various kinds of information, arrange specialized managers, expand information sources, and improve the efficiency of information application.

#### 4. CONCLUSION

All in all, in the current information age, in order to master the first-hand information resource, we must do a good job in the integration of computer application technology and information management, make full use of computer technology to master information, and then grasp the initiative. At the same time, staff working on the front line of information management must be diligent in computer operation technology, improve the application skills of computer technology in modern information management work, and truly improve the level of information management.

#### REFERENCES

- [1] Zhou, J., & Cen, W. (2024). Investigating the Effect of ChatGPT-like New Generation AI Technology on User Entrepreneurial Activities. *Innovation & Technology Advances*, 2(2), 1–20. <https://doi.org/10.61187/ita.v2i2.124>
- [2] Zhang, X. (2024). Research on Dynamic Adaptation of Supply and Demand of Power Emergency Materials based on Cohesive Hierarchical Clustering. *Innovation & Technology Advances*, 2(2), 59–75. <https://doi.org/10.61187/ita.v2i2.135>
- [3] Deng, X., & Yang, J. (2025, August). Multi-Layer Defense Strategies and Privacy Preserving Enhancements for Membership Reasoning Attacks in a Federated Learning Framework. In *2025 5th International Conference on Computer Science and Blockchain (CCSB)* (pp. 278-282). IEEE.
- [4] Jiang, B., Shi, L., Lin, Z., Stowe, L., & Guo, F. (2025). Perception Characteristics Distance: Measuring Stability and Robustness of Perception System in Dynamic Conditions under a Certain Decision Rule. *arXiv preprint arXiv:2506.09217*.
- [5] Pang, H., Zhou, L., Dong, Y., Chen, P., Gu, D., Lyu, T., & Zhang, H. (2024). Electronic Health Records-Based Data-Driven Diabetes Knowledge Unveiling and Risk Prognosis. *arXiv preprint arXiv:2412.03961*.
- [6] Q. Tian, D. Zou, Y. Han and X. Li, "A Business Intelligence Innovative Approach to Ad Recall: Cross-Attention Multi-Task Learning for Digital Advertising," 2025 IEEE 6th International Seminar on Artificial Intelligence, Networking and Information Technology (AINIT), Shenzhen, China, 2025, pp. 1249-1253, doi: 10.1109/AINIT65432.2025.11035473.
- [7] Yi, X. (2025, October). Real-Time Fair-Exposure Ad Allocation for SMBs and Underserved Creators via Contextual Bandits-with-Knapsacks. In *Proceedings of the 2025 2nd International Conference on Digital Economy and Computer Science* (pp. 1602-1607).
- [8] Yang, J., Wang, Z., & Chen, C. (2024). GCN-MF: A graph convolutional network based on matrix factorization for recommendation. *Innovation & Technology Advances*, 2(1), 14–26. <https://doi.org/10.61187/ita.v2i1.30>
- [9] Tang, Y., Kojima, K., Gotoda, M., Nishikawa, S., Hayashi, S., Koike-Akino, T., ... & Klamkin, J. (2020). Design and Optimization of Shallow-Angle Grating Coupler for Vertical Emission from Indium Phosphide Devices.
- [10] Zhang, Y. (2025). Dynamic pricing research based on customers' limited rational behavior in a competitive environment. *Management & Innovation*, 3(2), 13–20. <https://doi.org/10.61187/mi.v3i2.214>