

# Reconstruction and Reflection on Hotel Operation Application Systems in the Era of Digital Intelligence

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**Abstract:** The era of digital intelligence is an inevitable tide of the times, and traditional hotel operation application systems need to be reconstructed nowadays. The reconstruction of the system aims to realize the integration of online and offline operations through big data technology, and achieve the dual improvement of hotel operational efficiency and service quality. A brand-new system is built relying on cloud computing technology, microservices, AI technology, etc., to improve the utilization efficiency of hotel resources. The reconstructed system features high availability, conducts regular data analysis and iteration, supports cross-platform, low-code development and data integration, effectively eliminates information silos, promotes the collaboration of hotel business processes and organizations, and continuously optimizes the user experience of hotels themselves. It can realize omni-channel booking, intelligent services and personalized services, upgrade the functions of hotel services, promote the sustainable development of the hotel industry in the current era, and enhance core competitiveness.

**Keywords:** Background of the Digital Intelligence Era; Hotel Operation; Application System; Reconstruction Reflection

## 1. Introduction

With the rapid development of global information technology, both the Internet of Things, mobile services and blockchain technology have affected the development of the tourism industry and the hotel industry. The hotel industry also needs to change the existing problems in the original application systems, break the boundaries of time and space, and

increase the hotel's control over information. Through the integrated operation of online and offline, the competitiveness of hotels is improved. At present, the upgrading and transformation of the hotel industry is imminent. It is necessary to use technology to accelerate the digital and intelligent transformation of the hotel industry and improve the service quality of the hotel industry.

## 2. Significance of Reconstructing Hotel Operation Application Systems in the Era of Digital Intelligence

Exploring hotel application and operation systems from the perspective of individual hotel operations, it can be found that the functional modules included in the system are catering management, membership management, guest room management, cash register and other different contents. When hotel groups carry out management reconstruction nowadays, the first thing to consider is to integrate the different modules in the original hotel application and operation systems, build multi-store room status management, unified membership management and human resource scheduling modules, and realize standardized and centralized operation of each different module. At this stage, all hotel groups are facing the development demand of transformation. Due to the large differences between different brand sub-hotels themselves, even for the same hotel group, there are significant differences in the application of different sub-brand systems and the main system. Users cannot enjoy all the services of the hotel group, and there are obvious information silo problems among various sub-brands, resulting in inconvenience in hotel system operations and continuous increase in operation and maintenance costs. As hotel managers, it is necessary to change the operation application systems nowadays, quickly adapt to the market environment, and

optimize the operation of the hotel systems themselves. Choose disruptive technologies and application methods to realize the omni-channel integrated reservation of hotels, do a good job in intelligent guest room services, achieve accurate data analysis and prediction, seamlessly connect emerging payment methods, and at the same time do a good job in data security protection and management, so as to enhance the personalized service capabilities of hotels<sup>[1]</sup>. Carrying out integrated management of orders, services, marketing and membership from the perspective of hotel groups can improve the hotel group brand's understanding of customers, enable users to better accept the culture of a hotel group brand, and enhance the user experience through the operation system. At present, due to weak technical operation and integration capabilities and reliance on third-party software, hotel groups need to reconstruct the original operation systems, find new partners and computer enterprises, and ultimately promote the normalized development of the hotel industry<sup>[2]</sup>.

### **3. Reconstruction and Reflection on Hotel Operation Application Systems in the Era of Digital Intelligence**

#### **3.1 Reconstruction Path of Hotel Operation Application Systems in the Era of Digital Intelligence**

In order to improve the application effect of the operation system, hotels need to build an information system that meets the daily operation and management needs of hotels in the era of digital intelligence. The system should realize a series of core process businesses such as timely room reservation, check-in and check-out, and financial management, realize real-time monitoring and optimized management in the hotel operation process, and deeply understand and meet the actual needs of hotel business development. Nowadays, in hotel operation and management, it is necessary to design and implement functional modules related to hotel development to lay a solid foundation for the entire hotel operation application system. After completing the construction of the basic information system, understand the core business of the hotel and display the core business to people on the operation platform. On the basis of stabilizing basic operations, the

customer experience should be analyzed in combination with the hotel's own customer groups. Questionnaires can be distributed to customers to better understand the current needs of customers for the hotel and their experience. Combined with the Internet of Things technology, connect the asset management platform and the employee management platform, so that the hotel operation application system can truly serve customers and improve customer satisfaction<sup>[3]</sup>. The customer experience platform has always been the most important part of hotel operations, which directly affects whether the hotel can improve the service effect and enhance the personalized experience of the hotel. The ecological cooperation platform refers to being able to help hotels expand internal and external resources, broaden the service boundaries of hotels, and establish an ecological cooperative operation system using open platform APIs. The asset management platform is an important way to realize intelligent and refined management of various equipment in the hotel, and comprehensively improve the efficiency of the hotel during operation. Construct integrated management to ensure that the application and reconstruction effect of the hotel operation system in the data era is improved. The data analysis and decision-making platform directly affects the application effect of the hotel operation system. It is necessary to conduct in-depth mining and analysis of a large amount of data generated in each business link of the hotel to understand user needs, so as to improve the quality of business management in the subsequent management of the hotel. As an enabling manager, it is also necessary to give the most scientific decisions according to the current application status of the hotel. The data analysis platform not only provides strong data support for the daily operation and management of the hotel, but also helps the hotel realize innovative management, optimize hotel services, realize the transformation from initial experience-based management to data-driven management, and improve the competitiveness and profitability of the hotel. In the era of digital intelligence, the reconstruction of hotel operation systems should clarify their characteristics and advantages. Through technological innovation and architectural optimization, more intelligent, standardized and flexible operation and management tools are

provided for hotel groups nowadays, which helps the hotel industry achieve digital and intelligent upgrading and business model innovation<sup>[4]</sup>.

### **3.2 Characteristics of Hotel Operation Application Systems in the Era of Digital Intelligence**

In the context of the digital intelligence era, when reconstructing hotel operation application systems, it is necessary to increase technological advancement, provide hotel groups with more intelligent, standardized and flexible operation and management tools, and help the hotel industry realize digital and intelligent upgrading and subsequent business innovation. For digital and intelligent upgrading, the first thing to consider is technological advancement and multi-terminal connection capability. Technological advancement refers to building a microservice-based design using cloud computing technology and AI technology in the era of big data, so that each service can operate independently, facilitating the expansion and update of services, and reducing the system coupling degree during use. When analyzing technological advancement, the emphasis is on the miniaturization of service modules, aiming to promote and improve the iteration of business functions, innovate and develop the business itself, and provide strong technical support for the digital and intelligent transformation of China's hotel industry. Multi-terminal connection capability means that the application system itself has cross-platform capability, which can realize seamless data docking and synchronous data application on different terminals and devices, including common PC terminals, intelligent terminals, mobile terminal systems, etc. It can ensure the improvement of the user experience during use, and at the same time, both the work efficiency of employees and the service response speed of customers can be improved at this stage. At present, it is necessary to further improve the product use effect and enhance the quality of business communication between users and hotel customer service, and it is necessary to achieve in-depth integration of product capabilities and business communication. Combine the actual operation scenarios of hotels, and use big data technology and integrated AI technology, such as common NLP, to realize the automated management of

business processes, improve business processing capabilities, and enhance customer experience. Through the low-code development feature, the system can quickly formulate business processes according to the hotel's own personalized needs, and enhance the system's adaptability to diverse business scenarios<sup>[5]</sup>.

In recent years, with the rapid development of big data technology, when processing hotel operation application systems, it is also necessary to build business modules. It is required that the new system can improve the effect of system business design through open and integrated design, and can carry out seamless docking with third-party systems. Use the seamless docking of the system to build a diversified business cooperation model. For example, during system reconstruction, the membership system and payment channels can be used for innovative application and in-depth integration of the system, which can not only broaden the income sources of the system itself, but also improve the operation efficiency of the hotel during operation. As a hotel group, it is also necessary to build a new standardized system, which includes the marketing of hotel products, hotel membership marketing services, etc., to realize the group management of hotels, thereby continuously improving the brand value contained in the hotel itself, making information interaction faster, building a unique information interaction framework, realizing centralized management across regions and brands, so that the subsequent application effect of the system meets the user's requirements, laying a solid foundation for the subsequent standardized management of hotels, and avoiding disconnection from the digital intelligence era.

### **4. Conclusion**

In summary, with the continuous development of the digital intelligence era, the hotel industry needs to change the traditional operation and management strategic methods to realize the in-depth integration of system functions and business processes. When integrating hotel systems based on the cultural and organizational level, it is necessary to consider not only the technical level but also the cultural level to further cultivate professional talents with digital intelligence literacy. When reconstructing the system, it is also necessary to consider the principles of data security and

privacy protection, and build a more comprehensive, efficient and safe digital intelligent operation system to provide strong support for the refined management of all hotels. The system also needs to be continuously updated, requiring the system to have openness and expansibility, as well as interconnection capabilities.

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