

Upgrading the Principal's Mailbox System under the Background of One Stop Online Service

Rong Su

Information Network and Data Center, China University of Geosciences (Beijing), Beijing, China Email: surong@cugb.edu.cn

How to cite this paper: Su, R. (2025) Upgrading the Principal's Mailbox System under the Background of One Stop Online Service. *Journal of Software Engineering and Applications*, **18**, 149-157. https://doi.org/10.4236/jsea.2025.185010

Received: March 31, 2025 **Accepted:** May 3, 2025 **Published:** May 6, 2025

Copyright © 2025 by author(s) and Scientific Research Publishing Inc. This work is licensed under the Creative Commons Attribution International License (CC BY 4.0).

http://creativecommons.org/licenses/by/4.0/

CC O Open Access

Abstract

The principal's mailbox is a feedback channel for all faculty and students in universities. By effectively utilizing this method, the university can discover and solve practical problems in a timely manner, improve work efficiency and management capabilities. In recent years, the concept of "one-stop" government management has developed rapidly. In universities, the system of faculty and students filling in the principal's mails and the system of leaders handling affairs can be combined, so that users can receive quick feedback and solve problems quickly with just one response. This will greatly improve the modern management level of the university. This article introduces the optimization of the university principal mailbox system and the integration of the principal mailbox system with the university's office system, hoping to provide reference experience for the construction of other similar university systems.

Keywords

Principal Mailbox, One Stop Online Service, Office Work, Campus Management, Informatization

1. Introduction

In order to actively involve faculty and students in campus management, enhance the university's response speed to internal issues, and improve the university's management level, each university has established a "principal mailbox" or similar "leadership mailbox" for all personnel on campus to use. From management policies formulated by the university to daily life details, problems or personal thoughts can be reported through the principal mailbox. This is an important channel to promote the democratic spirit of teachers and students, updating the previous management model from one-way development to two-way interactive development. With the rapid development of information technology in the field of education in recent years, using new technologies to improve the efficiency of principal mailboxes has become an important aspect of digital campus construction. Especially for affairs involving various departments of the university, such as the principal's mailbox, the use of information technology can break the limitations of space and time, making the resolution process more efficient [1].

2. Current Situation Analysis

The principal's mailbox has been a university business for about several decades. Before the development of information technology, the most primitive physical mailbox form was used, where mailbox was installed at fixed locations. If teachers and students had any suggestions, they could write paper letters and put them into the mailbox, which would be opened regularly by management personnel, processed according to the contents of the letters, and finally given a written reply. In the early stages of information technology development, the principal's mailbox was changed to provide feedback through online platforms. Some universities reported problems through the university office email, while others submitted problems through simple online forms. Regardless of the method, after users ask questions, there are three steps: problem circulation, problem response, and user viewing [2].

Our university also established a principal mailbox system in the early stages of the digital campus, which was integrated with the university's unified identity authentication. All on campus users can login and submit forms on the webpage. In the content filling, the user account, name, and department or college are automatically recorded by the login information. The items that need to be manually filled in are the types of feedback issues and the specific content of the items. The types of items are divided into several categories of campus life such as teaching, personnel, canteen, dormitory, reward and loan assistance, network, campus environment, etc. The specific content of the items needs to be filled in with detailed information about the feedback issues. After the users submit, their personal information is kept confidential. The university's backend administrator receives the issue and prints out a paper matter handling form, which only includes the type and content of the feedback matter. The form is then circulated to the principal and department according to the type of issue. After the department personnel have resolved the issue, they need to reply on the matter handling form and then return it to the university's administrator. The administrator will organize the paper content on the reply list page of the university's mailbox system for public reply. All on campus personnel can view the issue and reply, but due to the variable reply date, the writer needs to check multiple times whether their reply has been displayed.

The advantage of this type of principal mailbox system is that all feedback issues and solutions can be seen by everyone, which is beneficial for university personnel to timely understand common and hot issues and solutions, as well as to see various affairs that individuals have not noticed, and is conducive to enhancing a comprehensive understanding of the university. However, some shortcomings have also been revealed. With the increasing enrollment scale of universities, there are more and more requirements for management work, and the needs of teachers and students are becoming more and more refined. The original principal's mailbox processing mode has become relatively backward, only achieving informatization in the writing mails of teachers and students, and it is also too simple. Informatization has not been achieved in the later problem circulation and processing response. With the widespread application of our university's collaborative office system, we should use office systems to improve the ability of departments to provide feedback on their needs, completely eliminate paper-based methods, improve efficiency, and also benefit environmental protection.

3. Construction Idea

3.1. Construction Background

The "One Stop Online Service" in the field of education comes from the "One Stop Online Service" managed by the government. As early as 2018, the General Office of the State Council issued a notice on further deepening the "Internet plus government services" and promoting the reform implementation plan of "one network, one door, and one time" of government services, requiring government departments at all levels to promote the modernization of governance capacity with informatization, accelerate the promotion of electronic politics, break through information barriers, promote collaborative management and services across levels, regions, systems, departments, and businesses, build a full process integrated online service platform, promote the work of "one network" (on line once), "one door" (go to the department once), "one time" (handle once), and build a service-oriented government that is satisfactory to the people [3].

In 2021, the Ministry of Education issued a notice on strengthening the informatization of education management in the new era, requiring the use of information technology to improve management efficiency, support management and services, and promote the modernization of education governance. One of the goals is to achieve flexible and convenient online services and achieve "onestop" education management services. This requires schools to comprehensively sort out management service matters, streamline and merge similar matters at different levels and departments, standardize work processes, use integrated education service platforms, promote online acceptance, processing, and feedback of management services throughout the process, and achieve "one application, one window acceptance, and one network processing", promote the reduction of processes, proofs, and time in management services, allowing data to run more and people to run less errands, minimizing the prerequisites for management services, streamlining process links, and shortening processing time [4].

3.2. Construction Plan

Based on the work requirements of one-stop service, our university has established an online service hall system, which is open to all faculty and student users on campus, focusing on internal affairs of each department, and realizing online processing of all departments that can be changed to online processing. For the rapid development of information technology in our university, the leadership hopes to implement a new and complete online processing system for the principal's mailbox, where users can fill in detailed information and the interface is friendly and convenient, the backend problem flow will also be automated and quickly responded to. As the principal's mailbox is also open to all on campus users, a menu entry and function for user submission can be established on the service hall platform, which avoids redundant construction and allows our university to use the existing platform to unify service standards. As the cross departmental office affairs in our university mainly use the collaborative automatic office system, and the faculty and staff are already familiar with using this platform, after users of the principal mailbox system write letters, we should achieve information integration between the online service hall system and the collaborative office system, so that the letters can start to circulate in the office system. During the circulation, the administrator can track and urge the processing. The processing results after circulation will be separately replied or publicized online by the administrator, and data summary and analysis can be carried out regularly in the future. This construction plan has effectively integrated the two major service platforms of our university, comprehensively improving the efficiency of online business processing.

4. Practical Process

4.1. Sort Out Requirements

1) Top level design

Due to the need to integrate and connect the two major business systems of the service hall and collaborative office, technical personnel are required to carry out overall planning and top-level design of the digital campus, fully considering possible issues that may arise during implementation, and ensuring proper technical documentation and emergency plan. Moreover, there have been new changes in the workflow of mail transactions, which involve various departments within the university, therefore, the leaders need to give sufficient attention from a management perspective to encourage all departments to actively cooperate with the launch of the new system, ensuring the smooth implementation of the construction process and operation [5].

2) Summary of requirements

The principal's mailbox in the service hall should have a formal and standard homepage, with information such as the public announcement of hot issues, letter writing entrance, view reply entrance, writing tips, and contact information of relevant departments. The letter writing interface connects with unified identity authentication to ensure that the letter writer has a real name account on campus, and then users enter the letter writing page to fill in the letter content. The letter filling column should conduct research on the management department, sort out their requirements in specific work, and then design the form based on the user's friendly writing experience.

After the integration of the two major business systems, the collaborative office system receives the letter and converts the information into an office transaction to initiate an application. Firstly, the mail administrator determines the business ownership based on the content category and transfers the transaction to the corresponding management principal. After the principal approves it, it is forwarded to the specific department leader for handling. The department handling personnel reply and then transfer it back to the mail administrator. Administrators will provide separate or public responses based on the situation, and can conduct statistical queries according to various needs.

3) Technology and maintenance

Because the new version of the principal mailbox system integrates two business systems, it requires collaboration between technical personnel from both parties during the construction period. As it involves steps such as data item correspondence, interface debugging, and functional testing, long-term tracking by technical personnel should be ensured to quickly solve program problems. After the construction is completed and put into use, technical personnel should be responsible for operation and maintenance to ensure the stability of the system and the realization of future new requirements.

4.2. Platform Architecture

According to the architecture of our university's information system platform, the construction of the principal mailbox system is implemented in four layers: data layer, docking layer, business layer, and access layer. The overall situation is shown in **Figure 1** [6]. The data layer selects established databases to reduce unnecessary construction. The docking layer achieves information exchange between the service hall system and the collaborative office system through network interface technology. The business layer is the implementation part of functions such as letter writing and mail flow, which will be programmed and developed according to the requirements document. The access layer controls the access method of personnel accounts, and on campus personnel can only write letters after passing unified identity authentication.

4.3. Specific Implementation

1) Database construction

As the login, letter writing, and browsing functions are built on the service hall system, this part directly uses the service hall database. The process of handling letter circulation is established on the collaborative office system, so this part uses the office system database. Two databases store data for their respective functions,

153

which are independent of each other. After passing information through the encrypted interface of the docking layer, the effective information is saved in their own databases. In terms of implementation technology, both databases are Oracle databases with stable performance, regular automatic data backup function, and security technologies such as firewall protection and network isolation are adopted to ensure data security.



Figure 1. Platform architecture diagram.

2) Development of business function

Program development adopts mature JAVA language and its related framework, which is used in both the office work system and online service hall system, with mature technology and high scalability. The system's related functions mainly include modules such as "I want to write a letter", "View replies", "Notice on Writing Letters", "Reply to hot issues", "Letter circulation", and "Query statistics". After program development, in addition to testing functionality to meet requirements, vulnerability scanning tools will also be used for inspection to ensure the security of the program, so that it can run stably for a long time.

• I want to write a letter

According to the requirements document, the mail uses a form to get information from the user. The form will automatically record the user's basic information, and need user to manually fill in mail information. The automatically recorded information includes: letter writing time, author's account, name, department, identity, personal email address, and contact phone number, these are obtained from login information. The manually filled information includes: letter type, letter title, content classification, detailed content, and attachments. In addition to the title and content of the letter, the focus is on the detailed classification of the content, which is divided into 11 major items and 39 minor items, covering various fields such as teaching, scientific research, personnel, logistics, etc. on campus, which is conducive to the accurate matching of management departments in the later circulation of letters.

• View replies

The feedback that has been publicly replied is displayed here, which can be searched by year, letter type, keyword, and can also be sorted by the latest and hottest replies.

• Notice on writing letters

Request and precautions for letter writing proposed by the Office of Letters and Visits.

• Reply to hot issues

Provide response displays for common issues with high attention to avoid staff and students writing letters repeatedly.

• Letter circulation

The circulation of letters in the collaborative office system automatically triggers a to-do list. An online process is designed according to the actual steps of handling letters, allowing problem-solving personnel to use familiar office platforms to quickly process them.

• Query statistics

Administrators can query historical letters based on criteria such as letter title, question classification, letter content, and department of approval, and can also perform statistics based on criteria such as question classification, department of approval, and keywords.

4.4. Achievement

After being put into use, the principal mailbox system no longer uses paper processing forms for offline transfer, greatly improving work efficiency and feedback speed. The reply to mails also respects the privacy rights of teachers and students. When dealing with circulation issues in the department, the information of the writer is not visible. For letters involving personal sensitive matters, a separate reply to personal emails is used. According to the data statistics function of the principal mailbox system, taking 2024 as an example, the number of principal mailbox letters for the whole year reached 1162, of which 1161 have been replied, accounting for 99.91%. Logistics services account for 50.52% of the response types, teaching and research account for 17.81%, student management accounts for 7.49%, information networks account for 5.42%, and others account for 18.76%. From this, we can timely discover the key concerns and ideological trends of the university personnel, providing reference and basis for leaders to plan and make decisions on the development of the university. Technically, two mature information systems are used to establish the principal's mailbox, achieving the co construction and sharing of hardware and data resources, and maximizing the value of information resources within the campus [7]. After conducting periodic inquiry based surveys on students and faculty, they have expressed great recognition for the use of the principal mailbox system. They can quickly reflect problems using convenient methods, which is an important way to express themselves and participate in university governance. It has become the most popular online application on campus.

There are also some issues reflected in the current system operation, such as insufficient complexity of statistical query functions, insufficient depth of data mining, and incomplete realization of the data value. Moreover, the letter writer's satisfaction with problem-solving has not been evaluated and feedback is lacking, which results in a lack of promoting effect on the department's problem-solving ability. These all need to be explored for optimization methods in the future.

5. Summarize

The reform and development of universities require listening to the voices of all parties to continuously improve the management mechanism. The principal's mailbox is an effective channel for communication and exchange between leadership and faculty and students, and an important positive channel for the overall development of the campus governance, it is a necessary way to effectively "solve problems". The principal's mailbox relies on the strong support and promotion of leaders and the active cooperation of various departments to solve problems with high quality. This is the most important foundation and guarantee for the development of the principal's mailbox [8].

In the digital age and information society, service is the ultimate value orientation [9]. Putting users at the center and making them feel convenient and responsive is the charm of "one-stop service". Under the concept of "one-stop service", the efficient use of the principal's mailbox also reflects the modern office level of universities. As one of the effective management tools for democratic and scientific decision-making in modern universities, the principal's mailbox will fully exert its practical value and promote the continuous improvement of teaching, research, management, and service levels in universities [10]. We believe that in the future where the internet and data are increasingly integrated, the principal's mailbox can play a greater role.

Acknowledgements

The author thanks the information network and data center of China University of Geosciences (Beijing) for providing a good working environment, and thanks very much for the help provided by all colleagues.

Conflicts of Interest

The author declares no conflicts of interest regarding the publication of this paper.

References

- Li, Y.H. (2012) Give Full Play to the Role of the Principal's Mailbox in Promoting Ideological and Political Education for College Students. *China Higher Education*, No. 3, 37-38. (In Chinese)
- [2] Wang, Q.H. and Pu, Y.Z. (2014) Research on the Function Analysis and Construction Direction of University President's Mailbox. *Journal of North China Electric Power University (Social Sciences)*, No. 3, 131-133. (In Chinese)
- [3] The Government of the People's Republic of China (2018) Circular of the General Office of the State Council on Printing and Issuing the Implementation Plan for Further Deepening the "Internet plus Government Service" and Promoting the "One Network, One Door, One Time" Reform of Government Service. https://www.gov.cn/gongbao/content/2018/content_5303434.htm
- [4] Ministry of Education of the People's Republic of China (2021) Notice of the Ministry of Education on Strengthening the Informatization of Education Management in the New Era.

http://www.moe.gov.cn/srcsite/A16/s3342/202103/t20210322_521669.html

- [5] Wang, C. (2021) Exploration and Research on the Construction of "One Stop Online Service" in Universities. *Shanghai Informatization*, No. 11, 25-29. (In Chinese)
- [6] Man, L. (2023) Research and Practice of Online Service Hall in Colleges and Universities. *Journal of Software Engineering and Applications*, 16, 21-30. https://doi.org/10.4236/jsea.2023.162002
- [7] Ding, J.W., Fu, X.X. and Li, B.Y. (2024) Research on the Construction of "One Stop Online Service" Platform in Universities. *China's Informatization*, No. 11, 64-65. (In Chinese)
- [8] Li, T.T. and Wang, T.B. (2012) Promoting Campus Harmonious Development through the Construction of the Homepage "Mailbox"—Taking Peking University as an Example. *Study of Ideological Education*, No. 10, 86-88. (In Chinese)
- [9] Tan, B.Y. and Liu, R. (2020) Theoretical Logic and Structural Elements of Digital Government Construction: Based on the Practice and Exploration of Shanghai's "One Network Service". *E-Government*, No. 8, 60-70. (In Chinese)
- [10] Zhou, X. (2016) Analysis of the Management Mechanism of the University President's Mailbox Platform. *Journal of Agricultural Catastrophology*, No. 7, 56-58. (In Chinese)