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# DISCUSSION ON EFFECTS OF MODERN INFORMATION TECHNOLOGY ON UNIVERSITY LIBRARIES

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**ABSTRACT**

On the background of effects of information technology on operations of University libraries, grasp the steps of library circulation management industry, timely take measures to manage the circulation comprehensively, rapidly and properly uses the individual advantages of intelligence, convenience and integration of network platform. Expand the ways to circulate. Stably improve the qualities and practical levels of staffs. Finally realize the harmonious win between improvement of management system and social benefits.

**Keywords:** *Modern Information Technology, University Library Management, Circulation Explosion, Specific Effect, Available Countermeasure*

## 1. INTRODUCTION

The timing stimulation of modern information technology, especially the gradual network, not only deeply changes the whole structure of library operation system, but also propels the improvements of such system. Stepping up with time, regulating the current methods and modes, already becomes the important part in the whole industry chain for library operation groups.

Expand the online collection and purchasing further. Improve the network platform in dealing with data. Improve the service qualities of borrowing and reading. Besides, enhance the relative managers' professional qualities and network operation levels, so as to realize the creative reforms of new-era library management system and harmonious increasing of social public culture effect[1-3].

## 2. THE FEATURES OF LIBRARY CIRCULATION MANAGEMENT

### 2.1. Intelligent, Convenient and Intensive Network Platform Becomes the Trend

Current the intelligence of circulation management is indicated in the utilization forms of resource entities. More and more advanced adaptive devices are applied, including digital network management platform, library resource information retrieval, data resource scatters, etc. These devices improve the intelligent automation greatly. Convenience is the sharing expansive application of internal resources, especially labeling as online operation of many relative library websites. The electrical forms as scanning edition and word edition are gradually opening up, so as to be more convenient and rapid, which is reading books without going out. Intensity refers to sustainable value requirements of self economic benefits on the background of computer information technology. Improve the service ideology, service mode and service quality of managers, which means the overall improvement of career moral cultivations. Improve the efficiency of information providing, problem explanations and problem processing. All is the firm basis for intensive and long-term library circulation management.

### 2.2. Diverse Value Positioning of Library Management System

As the storage of civil social science resources, effective library system not only contains the abundant grains of spiritual layers, but also the rare resources with great spiritual cultural value and social cultural benefits like pawning kuramoto, treasure unique copy and authentic works, etc, whose spiritual cultivating value and cultural effects are obvious. Improving in adaptive information network, the value can be maximized. Its assistance makes parts of those can be showed in copies, online borrowed, downloaded and saved. The readers, especially those out of school, can touch and feel the rare data. The readers can feel the intelligent, convenience and civil resources, and realize their improvements of spiritual thinking, moral senses and value ideology. Finally expand the

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social value and practical significance of library management system, shown as TABLE 1:

*TABLE 1: Diverse Value Positioning of Library Management System*

| Project | Traditional Artificial Management | RFID Automatic Mmanagement |
|---|---|---|
| Kuramoto management | Great work content, with serious errors and hard to find | Radio frequency is easy to find the errors |
| Lending and returning books | Scanned by manager book by book | Radiate many books in the same time. Readers can conduct all by themselves. Besides, their privacy can be protected |
| Classification | All artificial, time-consuming, strength-consuming, easy to error | Label identity, auto classification |
| Shelving and inverting shelves | Each book has to be arranged in number | Shelving in categories |
| Data in base | Single | Many books in a time, especially important for changing site |
| Safety | Unable to recognize specific information, only simple warning | Able to identify the readers and book information |

## 3. IMPROVEMENT AND SPECIFIC COUNTERMEASURES

### 3.1. Improve the Lending mode, and outstand the basic idea of intensive network assistant management circulation

lending is the mode and utilization of management, generally including internal lending and external lending, which reflects repeated registering lending information, looking up the book needed, questioning the book position, etc. It is not only time-consuming and strength-consuming, but also low efficient. Because parts of treasure books are copies of primary data, most of which are unique, and some relating to high-level confidence can only be provided in primary one, the limit resources can't meet the requirements.

According to problems above, we can utilize the intelligent network to improve and expand the current constant and single lending mode. Propel general data to increase the number of copies of network electrical editions. It can be agreed to read high-level resources in series of new mode and methods. So readers' requirements can be meted. On basis of the twice utilization of resources and full management, the effects of library management system can be improved rapidly, shown as TABLE 2[4].

| Number | Character Segment Name | Type | Length | Default | Void Allowed | Main Key | External Key | Introduction |
|---|---|---|---|---|---|---|---|---|
| 1 | lending number | Int | 10 | 1 | | √ | | auto numbering |
| 2 | book number | Int | 10 | | | | √ | |
| 3 | student number | Int | 10 | | | | √ | |
| 4 | lending time | Datatime | 8 | | √ | | | |
| 5 | due time | Datatime | 8 | | √ | | | |
| 6 | continuous times | Smallint | 2 | | √ | | | |
| 7 | operator | Nvatchar | 10 | | √ | | | |
| 8 | state | Navarchar | 50 | | √ | | | |

### 3.2. Expand and Utilize new Methods and Ways to Construct Network Platform

With the depth of resources management, electrical data retrieval, network management of borrowing process into circulation increasing, such advantages of intensity, intelligence and high efficiency is more and more obvious. Besides, it deals with the plight of great workload, low efficient collection and acquisition and bad services, etc.

Building library information retrieval platform in computer information network, can makes readers to browse the resources at any time and place to look up and compare the books, search the newest books and connect with staff, etc. It not only reduces the workload but also improves the utilization ratio. Besides, it expands the

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management ways. Therefore, the management system transforms from monotype to scientific intensity, shown as Figure 1.

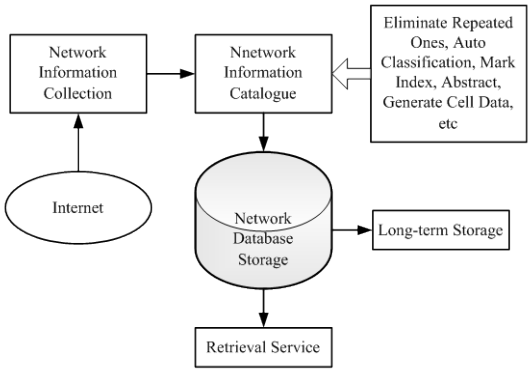


*Figure 1: Expand And Utilize New Methods And Ways To Construct Network Platform*

### 3.3. Deepen Integration among Internal Resources Network, and Broaden ways to Cultivate Library Managers

Leader and manager layer should classify the programs of library resource management, and improve the education on classification management, book output service management, book purchase data management, etc rapidly. Build the connection point among basic training, skill instruction and practice. In the daily process, develop some vertical and horizontal enterprise training flexibly and encourage managers to take examinations like computer level qualifications and network knowledge big examination, etc[5].

Due to its comprehension, over-discipline and collection, the circulation management not only demands relative basic practical skills but also serious of network knowledge, such as making book number, stripe code identification, shelf classification, base storage check, operator making, frequency number statistics, etc. By special and dense computer training, the staff's development can be more comprehensive and be more adaptable to the real requirements for real works, shown as TABLE 3:

*TABLE 3: The Library Database System*

| Number | Character Segment Name | Type | Length | Precision | Decimal Digits | Default | Void Allowed | Main Key | Introduction |
|---|---|---|---|---|---|---|---|---|---|
| 1 | book number | Int | 10 | | | 1 | | √ | auto number |
| 2 | stripe code | Nvarchar | 20 | | | | | | |
| 3 | book name | Nvarchar | 200 | | | | | | |
| 4 | type | Nvarchar | 50 | | | | √ | | |
| 5 | writer | Nvarchar | 20 | | | | √ | | |
| 6 | interpreter | Nvarchar | 20 | | | | √ | | |
| 7 | ISBN | Nvarchar | 20 | | | | | | |
| 8 | press | Nvarchar | 30 | | | | √ | | |
| 9 | price | Money | 8 | | | | √ | | |
| 10 | shelf name | Nvarchar | 20 | | | | √ | | |
| 11 | current content | Smallint | 2 | | | | √ | | |
| 12 | total storage | Smallint | 2 | | | | √ | | |
| 13 | task time | Datatime | 8 | | | | √ | | |
| 14 | operator | Nvarchar | 10 | | | | √ | | |
| 15 | profile | Nvarchar | 200 | | | | √ | | |
| 16 | borrowing time | Smallint | 2 | | | | √ | | |
| 17 | cancellation | Nvarchar | 2 | | | | √ | | |
| 18 | book state | Nvarchar | 50 | | | | √ | | |

## 4. SYSTEM STRUCTURE DESIGN

### 4.1. Structure Classification

The objects are complex, with many processes and fine operators. Each object's operators mainly relates to data storage, property modification, right setting and from setting, etc. besides, some fine operations like setting paper, adding or delete, lending, looking up, printing, correcting, statistics, etc should be finished in the computers. So it is essential to set layers of system, separating classification and arranging subcategories. We can divide the system in three-level category, which are parent category, subcategory and three-level category under subcategory. Parent category is the main keyword. Subcategory is the relative expansive works from main keywords. The third category is to update the words. So the classification is clear and orderly[6].

It should be noted to stress the strong processing on details. Due to its complex area, which includes civil books and natural books base on space,

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standard classification base on book basic discipline, basic classification from additive discipline, classification in functions, classification in types, local and foreign primary editions base on international spaces, and classification in time. As the ideology of social groups, especially that of teachers and students in colleges and universities change and the operation of library industry deepens, the borrowing groups and service objects are not only the groups regulated by laws, but also includes the older, disability, women, children, teenagers, soldiers and their relatives, poor, and other social member and family needing help, etc. So, besides, relative operators still need continuously classify the category settings, for example, by setting internal local network connection, point the index file for new element and new content to other service terminal, at the same time that storing the abundant information paper, promising the check, calling in and downloads, Shown as Figure 2:

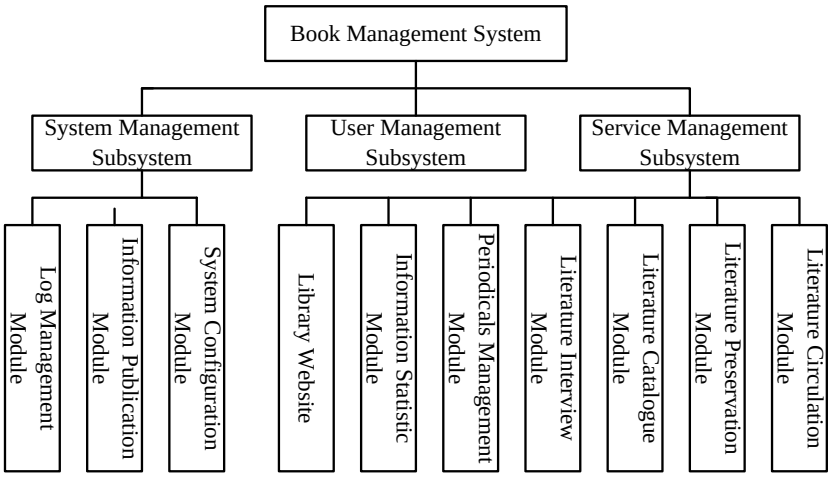


*Figure 2: Structure Classification*

### 4.2. Server Setting

Due to its complexity, writer considers three-layer Client/Server structure expansion is available to server. Three methods can be used to operate: firstly, extensively connect server as the data buffer for data layer and function layer, which not only improves the effectiveness of data exchanging, but also saves the cost input of relative software and hardware; secondly, separately set two servers as individual data exchanging source for data layer and function layer, which is flexible; thirdly, install function layer on the client, although which is convenient for error check and quality maintenance, the high load easy to result in physical damage. All in all, writer consider the second one the most economic.

The advantages are high frequency of data exchanging, high effectiveness, big throughout. To college library circulation management system with complex layers and great number of information, it has good effect. Due to its hard to understand, to the structure selection, load operation system, database adaptation, development environment optimization and program language development tool, to directly demonstrate such basic mode[7].

### 4.3. Database Dynamic Link Design

Similar with other information management system, it needs data server to be the basic information exchange media. Nowadays SOL Server7.0 is widely applied. It is simple, convenient, easy to maintenance. It can both execute graph design, view drawing, trigger design base on storage, etc, and set some flexible data options for each process. For example, while designing the table design, we can fill in each table in categories, and set type and format, invitation rights, checking passwords, etc. It can not only improve the effectiveness of information data operation management, but also improves the safety of information data.

Dynamic linking is loaded by operation system when the executive file is loaded or on work. Most operation systems consider analyzing external index as a part of loading process. On such system, executive file includes a table called import directory, whose each item includes a base name. According to that, loading program searches the base on the hardware, loads it on the uncertain position on the memory. Update the executive program. Other operation systems maybe analyzes

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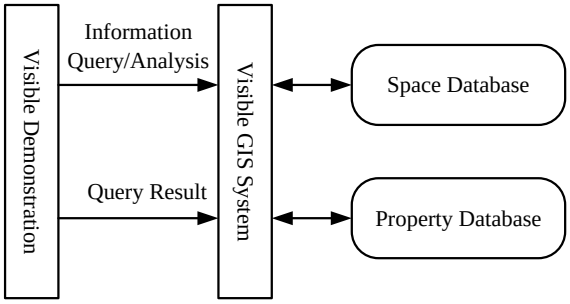
the index when they are on work. On such systems, executive program calls API, and transfers base name, number and function. Operation system deals with analysis and calls proper functions. Such dynamic link is called as operation link. Because each calling has to generate system cost, the link will be slow, which has bad effect on applicant qualities. It is rarely used nowadays, shown as TABLE 4.

*TABLE 4: Database Dynamic Link Design*

| Number | Character Segment Name | Type | Length | Precision | Decimal Digits | Default | Void Allowed | Main Key | Introduction |
|---|---|---|---|---|---|---|---|---|---|
| 1 | admin_ID | Int | 10 | | | | | √ | |
| 2 | Admin_password | Char | 15 | | | | | | |
| 3 | Admin_ | Nvarchar | 16 | | | | | | |
| | | | | | | | | | |

| Number | Word Segment Meaning | Segment Name | Type | Length | Main Key | Void |
|---|---|---|---|---|---|---|
| 1 | Regular ID | Rule id | int | 10 | PK | |
| 2 | rule name | gzmc | nvarchar | 50 | | |
| 3 | borrowing days | kjysj | int | 2 | | |
| 4 | renewing days | kxjsj | int | 2 | | |
| 5 | maximum renewing time | kxjcs | int | 2 | | |
| 6 | effective reservation days | kyysj | int | 2 | | |




## 5. DETAILS AND POINTS IN IMPROVEMENTS

### 5.1. Refine the Application of Diverse Systems

Rule details can not only regulate, specify and detail series of modern information technology, especially the overall effectiveness of circulation management on network platform, but also regulate the existing comprehensive structure. So it is both premise and basis to enhance relative system creation. But due to the chain relation among colleges, it can collect the staffs for library circulation management in the same area and the group to collect countermeasures, so as to get available modern information technology, especially the rules and protocols under network platform. Realize the performance sharing of series of library circulation management and personnel overall planning and distribution, so as to make the system more diverse.

A new intense application management system not only needs the support of leaders and managers, but also the common occupation and cooperation of all staffs. Its publication and application needs all staffs to realize long-term expansion and prosperity. The mutual cooperation between modern information technology and library circulation management operation system not only promotes the staffs to more seriously read the self properties, understand the management features of modern information technology, feel the collection calling of system, but also deals with various details more firmly and responsibly[8].

### 5.2. Stress the Improvement of Soft Power

Nowadays, the “soft power” competition between talent and technology becomes the trend, so to the widespread library circulation management system in colleges and universities, it is urgent and essential to retrain the staff’s basic cultivation, relearn the professional qualities and retrain the practical skills.

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On one hand, library management decision layer can employ some talents with highly career cultivation and strong practical abilities to teach and broadcast the most practical resources management ideology, management mode and management method, promising the real-time acquisition of newest and advanced information data. On the other hand, organize the managers to conduct intensive, long-term and flexible comprehensive skill training. Especially to new ones, more patience should be applied, so as to firmly improve their psychological quality, professional skill and practical abilities.

### 5.3. Update Material Reward and Punishment System and Consideration to Spiritual Stimulation

The essence to attract and stimulate talents is the fix and updating the substance salary. According to current industry structure regulation and overall changes of salary level, timely and effectively update the salary structure and rewards and punishment system in controllable area, so as to meet the groups' basic requirements. Besides, leader and manager layer has to balance spiritual rewards system, like creative honorable star, manager gonfalonier, team management pacer, etc. It is good for improving the enterprise responsibility and cultivating the managers' enthusiasm and stimulating the talents' practical creation.

## 6. SIGNIFICANCE OF ITS OPERATION

The width, diverse carrier forms, and abundance of value contents required by such system under the tides of modern information technology, not only stimulate the sensible nerve of industry, but also generates the fair environment, so as to rapidly develop large numbers of brand operation consensus and management rule. Finally, on the basis of propelling firm skeleton, layer distribution and connotation positioning, reduce the propelling resistance of spiritual civil system construction and add visible economic benefits, which relates to adaptation of modern information technology[10].

### 6.1. Dividing and Thinning, Industry Operation

After basic industry structure and operation rule formed, with the help of assistant adaptation of modern information technology, professional division and market operation appears rapidly. Especially with the rapid increasing velocity of computer network information technology, the division degree is higher and higher. It not only classifies the book category, reservation, transportation and handling, after-sale maintenance, but also rapidly forms the professional operation system with fine classifications and clear divisions ----corresponding to various posts; on the basis of modern information technology, the groups keep the commercial idea that insists basis and tries seriously. The performance is great, so as to accelerate the velocity of building first college and universities, abundant the core improvement of adaptation of modern information technology to library system, and enhance the effectiveness of current spiritual civilization construction[9].

### 6.2. Independent Main Body and Outstanding Status

Taking advantages of timing chances of college and university system reformation and stage trend of economic globalization, library circulation management industry develops rapidly, which not only gets abundant economic benefits, but also opens up the new thinking of knowledge structure optimization, then becomes the new star in the third industry chain. It has already indicated the main body and potential value to some degree. But with the deeper spreading, rapidly propel the system to realize recreation such as the overall design thinking of updating production, expanding and enlarging the content layers of output categories, and expand the service management channels, etc, so as to makes the system to stand firmly and step up with times, besides, it is sure to propel the stable, harmonious and long-term dual-direction operation with material spirits.

## 7. CONCLUSION

As the assistant processing engineering, which recreates resources, re-updates the system and re-optimizes the structure, combining with the current conditions, college library circulation management system has key effects on supplementing the group spiritual civil contents, improving the civil comprehensive cultivations and creating harmonious environment, etc. On condition of promising effects of resources, propelling the social spiritual civilization construction and promoting sectional economic development, deeply improve and broaden the library circulation management work. With the help of modern information technology, especially the expansion of channels, expansion of works and improvements of methods on the network platform, continuously enhance the improvements of staff's career cultivations and practical abilities, finally realizing the continuous,

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harmonious and long-term operation development, with the assistance of modern information technology.

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