

# Research on the Path of College Libraries Serving the Development of Local Electronic Information Enterprises in the Context of Yangtze River Delta Integration

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**Abstract:** The integrated development of the Yangtze River Delta region has been upg-rated to a national strategy. As a pillar of the Yangtze River Delta, the electronic information industry is developing strongly. Based on the characteristics of electronic information industry, this paper selects the electronic information enterprises in Yancheng area, explores their needs and status quo in comprehensive information, technical information, tool information, professional talents information, etc. It discusses how university libraries can play the social service function, optimize the content of information services, and provide information guarantee for the development of local economy.

**Keywords:** University Libraries; Electronic Information Enterprises; Social Services

## 1. Introduction

In 2019, the document "Outline of the Yangtze River Delta Regional Integration Development Plan" pointed out that Yancheng integrated with Shanghai into the Yangtze River Delta planning [1]. As a pillar industry of the Yangtze River Delta, the information industry is developing strongly, and Yancheng's electronic information industry is also booming under the impetus of such an opportunity. The electronic information industry, as an industry that develops and produces electronic equipment and a variety of electronic components, devices, instruments, and gauges [2], needs a series of domestic and foreign patent information, product development information, competitors' information, and national and policy laws and regulations in the process of research and development and production. Information support, however, by the enterprise scale,

technical conditions, funding and other aspects of the constraints, Yancheng's electronic information enterprises in the collection of information, analysis of information and other aspects of the power is weak, directly impede the advantages of the enterprise to play [3]. 2015 General University Library Charter clearly pointed out that university libraries should make full use of its own information resource advantages, to provide information services for the development of the community, to improve the use of information resources efficiency, and serve local economic development [4]. Based on this, more and more university libraries based on the needs of enterprises, play their own resources, talents and other advantages to make up for the enterprises in the access to information, the use of information in the disadvantage of the local industrial economy to carry out a variety of forms of information services. In this paper, based on the characteristics of electronic information industry in Yancheng, different types and sizes of electronic information enterprises are selected to explore their information needs, and to lay a foundation for university libraries to carry out accurate information services for electronic information enterprises.

## 2. Survey and Analysis of Information Demand of Electronic Information Enterprises in Yancheng City

### 2.1 Research Objects

The object of this research is mainly five electronic information enterprises of different scales and types in Yancheng (as shown in Table 1), focusing on understanding their existing information access channels, as well as their needs in terms of comprehensive information, technological information, tool

information and professional talent information:

**Table 1. Selected Electronic Information Enterprises in Yancheng (Source of Thesis Data)**

serial number	company Name
1	Yancheng Fangcun Technology Co.
2	Leader City Technology (Jiangsu) Co.
3	Yancheng Dongshan Precision Manufacturing Co.
4	Yancheng Yingrui Semiconductor Co.
5	Jiangsu Daorong Electronic Technology Co.

## 2.2 Research Methodology

The research was conducted using a combination of literature analysis, internet research and telephone interviews with experts. Literature analysis method. Literature on domestic university libraries' information services for different enterprises is sorted out and analyzed as the main reference of this thesis.

Network research method. Visit the official website or official WeChat public number of five electronic information enterprises of different sizes and types in Yancheng, and mine the information demand and so on as the reference data source of this thesis.

Expert interview method. An enterprise legal person or scientific research technician from each enterprise was selected as the interviewee, and the content of the interview mainly centered on about 9 questions in two aspects, namely, "the current channels for enterprises to obtain information" and "the information needs of enterprises".

The semi-structured interview mode was adopted, and the interview questions could be flexibly adjusted according to the real-time situation.

## 2.3 Statistics and Analysis

### 2.3.1 Analysis of corporate information acquisition channels

According to statistics, the current network search engine is the main channel for enterprises to obtain information, the reason is that most of the information on the Internet is free, which is a more popular way for enterprises with limited funds to obtain information. However, the information on the

network is uneven, requiring the searcher to have a high degree of information literacy skills, to be able to filter and identify useful information. Exhibitions, as one of the most intuitive way of presenting products, are controversial. Some enterprises feel that they can access exhibitions of the latest products in the industry, and can obtain part of the product information, popular trends and policy-oriented information, while some of them think that the products displayed at exhibitions usually present the good side, and some immature places in the process of research and development, and production are not shown, so the objectivity is lacking. Therefore, objectivity is lacking. In addition, 40% of the enterprises are willing to use professional consulting organizations to obtain their own useful competitors' intelligence analysis, patent analysis and other professional information, but due to the professional consulting organizations generally charge higher fees, so this is relatively high on the economic, technical and human resources strength of the enterprise requirements. Self-research in all of the above channels to obtain information in the most independent and targeted, but the need for enterprises to buy a certain database, with data collection, analysis of professionals and to have enough energy to go to peer-to-peer exchanges and communication. Industry conferences are industry scholars to share research results, technical exchanges, and mutual understanding, the establishment of contact bridge, in promoting scientific and technological development and technical exchanges play an important role [5]. Conditional scale enterprises will participate in some industry conferences to obtain some of the information needed, but industry conferences are limited, can not become a major information acquisition channel. In the process of research also found that the use of libraries to obtain information is not many enterprises, the reason may be that the library as a condition can provide information services due to the lack of publicity, their own advantages have not been fully exploited and other factors are not known by more members of the public.

### 2.3.2 Enterprise information needs analysis

As mentioned earlier, this part of the research mainly adopts the way of interviews, and the

interview outline is formed on the basis of referring to the relevant questionnaires and interviews, and keywords are extracted

according to the analysis of the text of the interviews with the interviewees, as shown in Table 2

**Table 2. Keyword Frequency of Major Keywords for Information Needs of Electronic Information Enterprises.**

Serial number	Keyword	Frequency	Serial number	Keyword	Frequency
1	Related Literature	5	7	Library	3
2	Patent Service	5	8	Science and Technology Research	2
3	Policies and Regulations	5	9	Industry Standards	2
4	Competitor Information	5	10	Product Advantages	2
5	Market Demand	4	11	Professionals	1
6	Advanced Technology	3	12	Data Needs	1

Through the condensation of some major keywords in the content with substance presented by the interviewees when they were interviewed, it is possible to dig out the current information needs of electronic information enterprises. From the table, it can be seen that the key words such as relevant literature, patent services, policies and regulations, market demand and other key words appear more frequently, indicating that this is a common concern of the enterprise information demand points. Although it is said that there are more total information demand

points, different scales and types of enterprises have different information concern points. Through in-depth qualitative analysis, this paper divides the information demand of electronic information enterprises in Yancheng into 11 subclasses, and the content of the information demand of these 11 subclasses is divided into a total of 4 different levels of information, which are comprehensive information, technological information, instrumental information and talent information. Specifically as shown in Table 3:

**Table 3. Information Needs of Electronic Information Enterprises**

Serial number	Topic	Subtopic
1	General	Competitor Information
		Industry News
		General Literature Search
2	Technology	Patent Information
		Scientific and technological research
		Product Development
3	Tools	Industry Standard
		Micro Policies and Regulations
		Macro Policies and Regulations
4	Talent	Subject Librarian
		Information Service Volunteers
		Intelligence Service Staff

On the one hand, the implementation of the Yangtze River Delta integration strategy has brought new opportunities for the development of the electronic information industry; on the other hand, with the continuous development of international information technology and the increasing level of development of the electronic information industry in other regions of China, it has also brought challenges to the development of the electronic information industry in the Yangtze River Delta region. First the number of electronic information enterprises in Yancheng has increased

considerably, and there is strong product competition and technological competition between enterprises, etc. For example, the template of the enterprise plan released by Yingrui Semiconductor on its official WeChat public number will disclose the competitors' research as well as industry saturation, industry development prospects and other dynamic information of the industry as the main module, and Dao Rong Electronic Technology itself- has screened out the three competing enterprises according to the information in hand. Analyze. Accurate competitor analysis, analysis of the

competitive environment and industry dynamic information analysis, can help enterprises in the industry competition to play a sustained advantage, but due to the majority of enterprises by the information awareness, talent and other aspects of the limitations of the information department did not specialize in the establishment of the enterprise, mainly relying on the outside of the intermediary institutions for industry dynamics and competitive intelligence analysis, and some of these enterprises in the enterprise there is a lack of funds, can not be paid for a long time to carry out intelligence consulting analysis. In some of these enterprises there is a lack of funds, can not be paid for a long time to carry out intelligence consulting and analysis, the real systematic mastery of competitor analysis of the enterprise or a few, and thus can not be aimed at the information of these competitors, their own production, R & D and other aspects of the adjustments made to the impact of the enterprise's strengths to play. Second, in the research found that enterprises with R & D capabilities have a certain degree of information awareness, in the process of research and development needs to look at relevant domestic and international literature, standards and technology-related product development information, etc., while participating in the five companies interviewed did not have any of the enterprises through the establishment of libraries or data rooms, purchase professional databases to obtain the above information needed, these companies have urgent information needs will be the network of urgent information requirements These enterprise-s with urgent information needs mainly use the Internet search engine, the State Intellectual Property Office and so on as the main information access, the redundancy of network information and the limited ability of the staff to obtain information leads to the dispersion of information obtained by the enterprise personnel, lack of specialization, so that the innovation of the products developed is poor, and the competitiveness of the peer group is not enough, most of the enterprises expressed their willingness to cooperate with the university library and hoped that the library can provide free access to the resources to the enterprises. Third, in the interview, the interviewees repeatedly mentioned the words

"patent service", "scientific and technological research", "patent/trademark/utility model", which indicates that the three aspects of R&D content may be different for different enterprises, but the services for patent/trademark application/utility model and scientific and technological research are equally important for enterprises. R & D content may be different, but for the patent/trademark application/utility model and scientific and technological research and new services are equally important to the enterprise, in the process of application for the need to carry out some of the technical route selection, new product project, patent management, trademark registration, scientific and technological research and other patent information services [6], the larger enterprises on the use of patent information is relatively more complete, and small-scale enterprises on the deeper concept of patent information services is more vague, and even the concept of patent information services. The concept of patent information services is relatively vague, and even some enterprises believe that the reference value of the patent literature in the database is not very large, the reasons may lie in the following: the declaration of the initiative of a weak sense of awareness, the staff generally lower academic ability and so on. Lack of understanding of specialized patent service institutions and university libraries, and concern about service quality. Searching for literature and lack of ability to screen the literature leads to poor quality of the screened literature. Fourth, in addition, the research also found that in the process of electronic information enterprise development, the survival and development of enterprises and the market are closely related [7], the industry standards, micro-macro policies and regulations, market demand, customer marketing positioning and other information needs are urgent, the respondents are more concerned about the user, the market demand, the market-related rules and regulations, environmental protection and fire safety regulations, as well as national and local supportive policies such as financial policy, there are foreign trade demand for the Enterprises also want to understand the laws and regulations of exporting countries to avoid some risks. This requires specialized institutions have the ability to provide timely

and accurate changes in market demand, national policies and regulations, etc., rapid access to market dynamics, collect market information, occupation of market space, most of the enterprises said that although some quality standards, policies and regulations, such as science and technology bureaus, the Development and Reform Commission and other governments will provide, but there is still a need to have a platform that integrates these documents, so that enterprises can provide more cutting-edge, accurate and timely information tools, so that enterprises can provide more cutting-edge, accurate and timely information, so that enterprises can be more accurate and timely information. This can provide enterprises with more cutting-edge, accurate and timely information on tools so that they can rationally allocate existing resources and plan long-term development strategies. Fifth during the interviews, we found that most of the enterprises realize that science and technology is the first productive force, and the source of science and technology is the talents. While introducing a part of scientific and technological intelligence professionals, they found that both master's degree holders and undergraduate graduates are disconnected between the theoretical knowledge they learnt in school and the actual work, and that their abilities in data acquisition and analysis cannot meet the needs of enterprise laboratories and R&D centers. Enterprises are more eager to cooperate with scientific and technological intelligence agencies and professional institutes to set up specialized docking teams, and strengthen the training of existing talents through subject librarians and intelligence and information volunteers, so as to deepen the close cooperation between enterprises and professional institutions and meet their needs when enterprises encounter technical problems and bottlenecks in subject declaration.

### 3. Reflections and Recommendations

With the deepening development of electronic information industry, the information demand of electronic information enterprises in Yancheng in terms of synthesis, technology, tools and talents is also increasing. Based on the needs of enterprises, we try to explore the information services needed by enterprises, so as to give full play to the advantages of

university libraries in terms of resources, talents and technologies, and further develop the library's functions of information integration, information support, resource sharing and collaborative innovation, etc., and provide "supply" services to provide precise information services for electronic information enterprises. The library has the advantage of resources and technology.

#### 3.1 Proactive Advocacy and Enhanced Cooperation

The above findings show that there are certain information needs of electronic information enterprises in Yancheng, but most of them are using free resources on the Internet or resources charged by professional consulting organizations, and they are not aware of the services that libraries can provide, and some of them have even enjoyed library services without knowing that libraries are providing the services. A big part of the reason is that most of the respondents are not aware that libraries can also provide services such as information counseling and professional intelligence. Therefore, the library must change its concept, under the premise of ensuring that the service-s of teachers and students on campus will not be affected, take the initiative to go out, vigorously publicize, and strengthen cooperation with enterprises in need, maximize the use of library resources to meet the information service needs of enterprises. First, starting from within the school, increase publicity, create a good atmosphere, and enhance the service consciousness of librarians. From the national policy, industry norms and reward and punishment system and other aspects of publicity, so that librarians understand that college libraries should not only do a good job on campus teachers and students of the information services, but also should deepen the content of the library's services, should pay attention to the development of local enterprises to provide information services, so as to achieve a "win-win" situation, thus improving the library's core competitiveness, in some specialized technical services to cooperate with the relevant secondary colleges of the school, together to help enterprises overcome the research and development process. In order to achieve a "win-win" situation and improve the core

competitiveness of libraries, we should cooperate with the relevant second-level colleges of the school in some professional technical services, and help enterprises overcome some problems encountered in the process of research and development. Second, the library can make use of alumni to carry out publicity, establish alumni groups by cooperating with the school's academic affairs system, make use of alumni love, publicize the contents of literature search, scientific and technological research, thematic consulting and intelligence services that can be carried out by the library, and regularly produce WeChat, microblogging and other new media tweets to push the featured data resources related to the enterprises, OA open data resources, service programs and so on to the alumni groups, so that the enterprises can have an initial impression of the contents of the services and ways to have a preliminary impression; imitating patent institutions to cooperate with the Science and Technology Bureau and other organizations, the library's services will be publicized and exchanged at the annual meeting of enterprises organized by the Science and Technology Bureau to further attract the interest of enterprises. Third, on the basis of the previous step, the school library takes the initiative to strike out with the alumni counterparts in the enterprise to carry out a single project first, for example, from the simple Chinese and foreign language literature search, science and technology research and new start, the introduction of certain incentives and penalties for librarians to participate in the project in the capacity of an employee in-depth to the enterprise, will be located in the "librarians + employees" dual identity, such participation is more vital and can deepen the sense of service, but also can mobilize the enthusiasm and initiative of enterprises to cooperate with the library. Dual identity, such participation is more vitality, but also more deepen the service consciousness, enhance the service ability, but also can mobilize the enthusiasm and initiative of the cooperation between enterprises and libraries.

### **3.2 Building Alliances Together, Innovative Approaches**

Although university libraries have certain advantages in carrying out scientific and technological research and citation, patent

services, intelligence services and other professional services are different, and it is difficult for a single library to form a systematic service. Therefore, university libraries must cooperate with other libraries and professional consulting organizations, open the "library +" mode, form an information cluster consortium, play their respective strengths, innovate the service mode, and regularly invite experts and scholars to participate in the service, so as to provide enterprises with higher quality information services. First, tutu Union Model. Different colleges and universities in the same region have different schooling characteristics, different disciplines, and the same scale of libraries and focus of services. As far as Yancheng area is concerned, there are four provincial colleges and universities, namely Yancheng College of Technology, Yancheng Teachers College, Yancheng College of Industrial Vocational Technology, and Jiangsu Pharmaceutical Vocational College. The libraries of the two undergraduate colleges are richer than those of the two vocational colleges in terms of resources and scientific and technological services, but vocational colleges are characterized by strong vocational attributes, and their social services are mainly oriented to enterprises, and "school-enterprise cooperation" is the way for the development of vocational colleges and universities and the orientation of the institutions of higher vocational education [8]. Led by the Yancheng College of Technology, held in Yancheng and surrounding areas of colleges and universities scientific and technological research and new work exchange meeting, experts attending the Yancheng and surrounding areas of scientific and technological research and new alliance to build an in-depth discussion, unanimously agreed to build the alliance, the formation of the alliance can be a good solution to the colleges and universities to buy foreign databases tight funding, specializing in scientific and technological research and new, the lack of information service professionals and other issues, the region through the construction of a regional or cross-regional library alliance, the formation of a library alliance, the formation of a library alliance. Regional or cross-regional library alliance, give full play to the service advantages of the member libraries, demand-oriented,

enterprise-centered, jointly build information service system, through the signing of an agreement to open the VPN to the member libraries as well as enterprises to open up off-campus access to realize the sharing of resources, sharing of technology, sharing of talent and so on. Second, the model of alliance between libraries and enterprises. Here the model of the library enterprise does not refer to the cooperation model of the library and the information demand enterprises, but refers to the model of the library and the professional consulting firms, intelligence service agencies and other commercialized information service institutions alliance. Compared with libraries, enterprises are more willing to get professional information from professional consulting firms when they have enough funds. As a result, professional service organizations work

more closely with enterprises and have accumulated rich practical experience, which is exactly what libraries lack. Although more and more libraries keep going out to try- to participate in the enterprise information service, factors such as lack of understanding of the work of the enterprise lead to the supply not meeting the demand, but libraries can link the advantages of their collections with the professional level of professional organizations, libraries contribute resources to ensure that the professional organizations to provide technical support, and jointly formulate the principles of cooperation to achieve the function of synergistic innovation and synergistic service to the enterprise.

### **3.3 Integrate Resources and Build a Platform**

Network search engine because of its convenience, data richness and timeliness favored by the enterprises, university libraries to provide information services to enterprises should also cast its goodwill, according to the user needs, to build a resource integration platform, for electronic information enterprises to provide convenient one-stop information consulting services. First, universities within the alliance jointly research-h and development, through the crawler software and other information technology, through professional talents, intelligent search, etc., for the characteristics and actual needs of electronic information

enterprises in Yancheng, in order to organize the Internet resources + self-built data resources mode, the development of an electronic information enterprise information resources integration platform, the platform should contain "database resources to use the navigation", "enterprise subject declaration guidance", "scientific and technological research services", "literature retrieval services", "literature retrieval services". The platform should include "database resource use navigation", "enterprise subject declaration guidance", "scientific and technological research service", "literature search service", "policies and regulations industry news", "policies and regulations industry news", "policies and regulations industry news", "policies and regulations industry news" and "policies and regulations industry news". Policies, regulations and industry trends", "demand questionnaire research", "intelligence special services", "alumni mutual assistance, "Expert Lectures" and other modules, to provide cooperative enterprises with a strong guarantee of documentary resources, to realize the regional think tank function to meet the information needs of enterprises in each stage of R & D, production, marketing, through the signing of the sharing agreement, to achieve the sharing of information resources between the map enterprises, the platform should have a person responsible for the management of the use of assessment work, and timely improvement of the use of the process of emerging problems. The platform should be managed by specialized personnel, and the assessment of its use should be done well, so as to improve the problems that have just appeared in the process of using it. Second, visit foreign university libraries, in the principle of non-infringement of copyright, the foreign "OA" link and the discipline related to the free knowledge of the results of the integration of knowledge management, integrated services and industry-university-research information needs, to promote independent research and development of enterprises, and to provide information services for the development of the local economy [9].

### **3.4 Pooling of Talents, Thematic Services**

Compared with public libraries and other consulting service companies, college libraries,

in addition to their advantages in resources, attach great importance to the construction of the talent team and the cultivation of professional talents. At present, 90% of university libraries prefer to introduce doctoral students with different disciplinary backgrounds, and more and more librarians in libraries have become interdisciplinary professional and technical talents. Among these postgraduates with different backgrounds, graduates with engineering backgrounds such as computer majors, cloud computing majors, data management majors, etc. are quite popular, which shows that libraries are gradually changing from traditional book lending services to scientific research services, disciplinary services, thematic services and social services. First, establish an expert group to form a joint mode of master and apprentice. Library to the school application, the school will be electronic information industry related discipline leaders together to form a group of experts, one-on-one with the enterprise researchers to produce mentor-apprentice mode, the main function is to help enterprise science and technology workers to declare the subject, patent application guidance, the establishment of deep cooperation and long-term operation mechanism. Second, conditions of the library can be divided into various types of library personnel, the establishment of information services and other specialized departments, the formation of subject librarians + intelligence service personnel mode. Subject librarians main function is to provide school teachers and students with thesis checking, information retrieval services, subject assessment and other and with the intelligence service personnel for the cooperative enterprises to provide professional literature search, scientific and technological research, demand research, on behalf of the investigation and inspection, the title of the service, patent services, intelligence consulting services, etc., the use of their own professional strengths as well as skilled in cloud computing, RFID and other technologies to assist the enterprise scientific and technological personnel to carry out independent research and development to realize the upgrading and transformation of enterprises [10]. Third, cultivate information service student volunteers. The use of the school after work and electronic information

industry-related mechanical and electrical and other outstanding students concentrated, through lectures, practical operation and other training, to do some enterprise research, thesis checking, thesis retrieval and other simple paid information service work, so that not only can share part of the workload of the full-time in-formation staff, but also exercise the ability of the student volunteers.

#### 4. Conclusion

Under the integration strategy of the Yangtze River Delta, electronic information enterprises have been emphasized at the national and local levels. The center of gravity of enterprise management lies in decision-making, and the accuracy of decision-making depends on the timely, accurate and effective market information. University libraries are in a position to give full play to the advantages of resources and talents, and provide enterprises with professional literature search, guidance on subject declaration, scientific and technological research, market research, competitive intelligence analysis and other information in the process of R&D, production and marketing through alliance. This will be conducive to promoting information "supply and demand" between the positive interaction, promote the electronic information industry and library services integration and development, the rapid development of the electronic information industry and university libraries to maximize the social benefits of the university library is of great practical significance.

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#### Reference

- [1] Lu Yujiao. Research on economic development difference and Coordinated development of Yangtze River Delta urban agglomerations under the background of high-quality development. Zhejiang academy of science and technology, 2023. DOI: 10.27840 /, dc nki.



- GZJKJ. 2023. 000104.
- [2] Electronic information industry. <https://baike.so.com/doc/60266426239641.html>
- [3] Xing Fei, PENG Guochao, JIA Yichen. Research on Precision Information Service of University Library Based on Information Demand of small and medium-sized technology-based enterprises. *Library science research*, 2020 (17): 77-86. The DOI: 10.15941 / j.carol carroll nki issn1001-0424. 2020. 17. v010.
- [4] YAN Jinwei, ZHU Qiang. A Review of the Revision of the Statutes of Libraries of General Colleges and Universities. *Journal of University Libraries*. 2016(2): 9-13.
- [5] Ning Yan, Ma Shishi, Huang Juan, et al. A new form of academic conference under the situation of normal prevention and control of Novel coronavirus pneumonia. *Shanghai medicine*, 2021, 44 (4) 262-265. The DOI: 10.19842 / j. carol carroll nki. Issn 0253-9934. 2021. 04. 010.
- [6] Wang Kai, Li Chang. Survey on the Demand for Patent Information Service of Sm-all and Medium-sized Enterprises in Anhui Province and Analysis of Countermeasures. *Anhui Science and Technology*, 2020, (07): 14-15.
- [7] Zhu Haitao. Promotion of local economic development by university libraries in the context of the "19th National Congress"--The example of the new district library of Henan University of Science and Technology. *Inner Mongolia Science and Economy*, 2020, (08): 117-118.
- [8] Jin Lifeng. The way of library information service based on enterprise demand. *Inner Mongolia Science and Economy*, 2019, (22): 141+144.
- [9] Guo Shixin. Research Report on Enterprise Information Service in College Libraries. *Modern Communication*, 2020, (01): 178+177.
- [10] Chen Haiyun. Survey and Analysis of County-level Public Library Information Services Based on Enterprise Needs--Taking Zhangjiagang City as an Example. *Offi-ce Operation*, 2016, (23): 179-180