

# An Approach to Cultivate Talents of Information Management under the Combination of Information and Industrialization

Liu Fen  
Chongqing University of Post and Telecommunications  
Chongqing, 400065  
China



**ABSTRACT:** *High quality and multiplex talents of information management will be the key to decide the success of the combination of information and industrialization. In this paper, the connotation of Information and Industrialization Combination, which requirements to China's talents of information management was analyzed, and based on that, we suggested the talents training mode.*

## Categories and Subject Descriptors

**K.6 [Management of Computing and Information Systems]:** Strategic information systems planning; **H.4 [Information Systems Applications]**

**General Terms:** Information Management, Information Technology, Information Industry

**Keywords:** Information and Industrialization, Information Management, Talent Cultivation Mode

**Received:** 18 August 2012, Revised 10 October 2012, Accepted 18 October 2012

## 1. Introduction

Yang Xue Shan, China's Vice Minister of Ministry of Industry to promote the integration of the two major strategic decisions of the CPC Central Committee and State Council; the inevitable trend of historical development. Informationization and industrialization integration, refers to the use of the means of industrial development, elements of IT into the business, industry, regional and social, to the production function to optimize and upgrade

industrial structure, the process of allocation of resources to improve and enhance social relationships form, is characterized by a comprehensive, multi-level, interdisciplinary, integrated. The ultimate goal of integration of the two is the way of productivity, industrial structure, resource allocation, a comprehensive upgrade of the level of social development and transformation, the essence of the material life of industrialization driven by information technology, information technology to promote industrialization, as well as the spirit of the concept of information technology resides in the industrialized among, there is no order relationship between performance of the spiral, mutual promotion and mutual penetration of the morphology and development, to jointly promote the cultural aspects of economic and social progress and prosperity of [1].

In the process of integration of "two", the cultivation of high-quality, complex information management talent will be one of the key issues of integration of the two successful implementation. Although China's current IT applications gradually expanding, and information on enterprise innovation has become increasingly evident, many enterprises to develop awareness of information technology, enterprise information application there are differences in industry and the level is still in the majority of enterprise information technology use initial stage, and many companies lack professional management staff, the vast majority of enterprises are still maintaining the traditional management model, the lag of information technology, enterprise integration of the two "short board". Therefore, we must speed up the training with Chinese characteristics, information management personnel to

establish a training model to adapt to the “two” fusion development needs of information management personnel.

## 2. “Two” The Integration of Information and Management Talent

### 2.1 Integration of the two need Information and Management Talent with a Diverse Background

At present, our information management and information systems professional construction research from science and engineering colleges, comprehensive universities, and financial institutions, has formed the “three pillars” of the situation [2]. For our culture of information management personnel, but as the scientific and technological development, industrialization has been the original mechanization, electrification, automation, entered the era of digital, intelligent and networked information, traditional management talent cultivation program has been difficult to adapt to the integration of the two requirements of cultivating talents to become an urgent need for new talent demand mainly refers to the development and use of information management capacity, and have professional management knowledge of the industrial production, the thinker and information technology but also understands the complex talent of the related field of industrialization and industrial applications personnel, is about information management applications to the relevant areas of industrial talent. Specifically, the knowledge structure of the complex information management personnel, including several levels:

First of all, we should have a basic knowledge of economic management: accounting, economics, marketing, production and operations management, organizational strategy and behavior, the application of mathematical statistics, operations research, etc.

Second, have the professional knowledge, such as computer systems and system software, data structures and databases, computer networks, information management, information organization, information storage and retrieval, management information systems analysis and design;

Third, we need to have the high-level IT capabilities, information-oriented information systems development and construction of the required technical expertise, such as the Microcomputer Principle and interface technology, operating systems, network protocol analysis, network planning principles, network computing, Introduction to communication networks, e-commerce technology, networking technology, integrated wiring technology, engineering and project management. Many colleges and universities to set up information management professional institutions such as SEM, Chongqing University of Posts and Telecommunications, administered by the Beijing University of Posts and Telecommunications Institute, Harbin Institute of Technology School of Management, regarded training program is locked in the first and second levels, such as universal creation of economic

management, information collection, processing and analysis courses, network knowledge courses and programming language courses as an information professional students should master the basic knowledge, but involves relatively junior level, third level is the upgrade on the second level, the universities involved courses less, so that out students who can only understand some management knowledge, but not with professional IT, it is difficult to adapt to the requirements of Industry and Information Technology for compound talents.

(A) To promote the depth of application of IT in traditional industries, promote industrial transformation and upgrading.

Automotive, petrochemical, equipment manufacturing and other industries as the focus, speed up the industry, product R & D design and manufacturing process systems integrated integration, improve the industrial chain collaborative design system, to promote their products full life cycle of digital technology design mode, advancing IT in key product penetration integration, improve the information technology content and added value. Speed up the automobile, petrochemical, iron and steel, building materials, medicine, textile and other industries producing digital devices, intelligent network transformation, deepening R & D design, process, process control and other aspects of IT integration applications. To promote food and drug industry, the production process state monitoring, quality control, rapid detection system, and gradually improve the product quality and safety of the whole life-cycle management system. Backbone enterprises in key industries to promote product development, production manufacturing, process management, information sharing and business collaboration. Backbone enterprises in key industries to promote the study of production, supply, management and production control, business and financial whole process seamless and integrated, unified and integrated management of the construction of information platform for product development, production and manufacturing, and management process sharing and business collaboration. Improve information management and control of large enterprise groups, and promote enterprise flattening of the organization, decision-making scientific and operational integration, and enhanced enterprise resource sharing and business integration capabilities. Adapt to new changes in the pattern of industrial competitiveness, to enhance the collaboration capabilities of the industrial chain, promoting the product lifecycle management, customer relationship management, supply chain management system spread and deepen, and to achieve the chain of information sharing and business collaboration.

(B) To promote IT application in the field of energy conservation, improve resource utilization and the level of safety in production.

Speed up the transformation of major energy-consuming

equipment and processes of iron and steel, petrochemicals, nonferrous metals, building materials and other industries intelligent, real-time monitoring of energy resources, precise control and intensive use. Lead in industrial enterprises to establish an energy management center, to speed up the promotion of new energy-saving mechanism of contract energy management, energy-saving equipment leasing. Hazardous chemicals, Explosive Materials production, transportation, storage, management, use and other aspects of the real-time monitoring and supervision system. Multi-layered defense around the dangerous workplaces, remote control, alarm monitoring, hazard warning, emergency response and disposal, and promote the integrated use of IT, the establishment of the new mode of production safety.

(C) Promote the application of IT in the producer services, to accelerate the modernization of production services.

Raise the level of industrial design. Support for research and development and application of industrial design software. The establishment of a practical and efficient industrial design of the underlying database, resource library and other public service platform, to strengthen the sharing of resources. Encourage enterprises to establish an industrial design center, guide and support the development of specialized industrial design industrial park. Support with independent intellectual property rights, industrial design achievements in industry, speed up the development of the industrial design industry.

Promote the development of electronic commerce. To promote in-depth development of large-scale enterprise e-business applications on the basis of network procurement and sales levels, expanding the coverage of network marketing, online trading, logistics and distribution, credit payment integrated direction to upgrade. Support manufacturing enterprise e-commerce as a means to improve the level of supply chain collaboration and business collaboration to drive the development of upstream and downstream enterprises in the industrial chain. Actively promote the industry, third-party e-commerce service platform for the development of integrity, support an increase in the level of e-commerce technical support and public service-oriented industry clusters and professional markets. Deepen the mobile e-commerce applications in the field of industrial and production services.

## 2.2 IT Capacity-building Information and Management talent

Integration of the two requirements to upgrade traditional industries through information technology transformation, optimizing the economic structure, optimize business management, to enhance the competitiveness of enterprises; create a new IT industry, hardware industry, software industry, information services, online services industry [3]. Enterprise information construction, information technology personnel needs, including manufacturing, technical areas, management areas and other aspects of information technology personnel, at the

same time need the acquisition and maintenance of computer hardware systems, software systems development and maintenance, environmental maintenance of network and information construction planning and other aspects of personnel [4]. Personnel training mode professional development objectives and vague position of Information Management professional teaching programs, curricula, teaching methods are similar, training objectives and positioning similar information and management talent to become a “*generalist*”. Based vocational colleges to train the application of skilled personnel, but also copy from the cultivation of ideas and training model of the undergraduate institutions, personnel training is not clear-cut features, the operating capacity is weak, resulting in the information management industry, the lack of good creative high-end talent, but also lack the ability to operate low-end software personnel [5]. Students trained in management techniques as students, information skills as IT majors showing the “*two unlike*” Cuixiang, a vague position lead to the sustainable development of information management professional to be affected. Since the student employment are mostly engaged in information management and information systems analysis, design, implementation, management and evaluation aspects of the work, it is necessary based management in information technology be upgraded.

## 2.3 The Emphasis on Practical Ability is to Develop Information Management Talent

Adapt to the integration of the two requirements of the personnel to pay more attention to the practical ability, which the student computer information management professional level computer professional specialist level, able to grasp the ideas and information system development and management methods, the minimum should be competent information system development and management, e-commerce website development and maintenance work. In many vocational colleges in China, teaching mechanism is not flexible and the most common, many institutions cannot really understand education “*technology*” as well as the theoretical “*necessary and sufficient*” principle, the training model of information management professionals and curriculum for many years no big change, more attention to cultivate the culture of the administered by the student’s basic knowledge, ignoring the practical ability and the ability of the latest IT, these “*soft underbelly*” urgent need to improve.

Integration of the two required not only understands management but also understands the information of the compound talents, explore an effective personnel training mode, in order to effectively promote the integration of software and information services, network integration, the integration of manufacturing and operation industry, the integration of information technology and equipment manufacturing.

Actively guide the students to participate in scientific and technological activities to raise awareness and ability of their own learning and active practice.

First, actively strive for college students of the university research project 2007 - 2009, dozens of students of the School of Computer and Information, there is Wang Jun, university research project. Through a certain depth of the subject, the purpose of the students on task, objects, methods, procedures can hold their own, and the purpose of personnel training into the training process - rely on scientific research activities enable students to strengthen the innovation capacity in the active practice of training.

A constructive initiatives to encourage college students to participate in the mentor project: on the one hand, the mentor's research project as a thesis subject is a positive practice of teaching and research resources to expand; the other hand, the move so that students feel the importance of creative talent in the research phase of the students will be able to consciously innovative, while achieving self and the double breakthrough. Computer and Information Science students take the initiative to practice has been greatly improved, through a variety of scientific and technological activities of temper, and go to work, the ability of their active practice fully demonstrated: Ma On Shan two weeks Italy (2001), the guidance of high school students in the country Olympiad in Informatics, prizes, known as the "gold medal" coach; the Xin'an Secondary School (2003) guidance Liang Chen Shifeng students received the second prize of the Youth Science Creation Competition in Anhui Province in 2008. Graduates of Chu Donghui, Liang, Cheng Chen swept the top three in Anhui Province in 2009 high-quality high school IT class selection-cum-basic skills competition the first prize.

Practice discipline competition is based on science and technology activities as the prototype, set to introduce a competition mechanism innovation capability. Disciplines to organize and participate in different levels of grade competition to stimulate the students' individual and team to explore the interest in science, which compete with each other in the realization of innovative ability.

The content of the program design students to face a real problem will eventually solve the problem through repeated design and modification. The program design has a strong interest to students after a lot of frustration and repeatedly try to get the desired results in the implementation of the design task, a huge sense of accomplishment will drawing the students to continue their own learning, exploration; programming with a strong practical The students must determine in order to get the results algorithm, edit the code, consider the robustness of the program, scrutiny of every detail, until the run the program. Completion of the program code is not easy, during which causes the program to run error may occur even vulnerabilities that cannot be run, which requires students must also have the error with a keen observation and repair. Been interested in traction, students often can be done in a contest going all out to conscientiously put into practice, a positive innovation.

Through the establishment of Programming Contest broaden the thinking of students and allow them to be

able to complete the design on the basis of the diversity of methods, after careful thought, to find out the optimal solution; second, the divergence of the students thinking, so that they can "own questions, problem-solving" problems that may exist through active observation, to create and practice their own ideas, so the problem is resolved.

Electronic Design Contest is neither a purely theoretical design competition, not just experimental contests, but by a team jointly designed and produced a project competition for specific engineering background. Held Electronic Design Contest, training students to use the Internet data access, electronic system design capacity, the practical ability, and the ability to express. Makes the original does not love the hands-on students to experiment, to become learning will do. With the process of competition, but also anti-check usually students in the study of existing problems and deficiencies, and to have it corrected in a timely manner:

Second, the emphasis on the combination of theory and practice. Organize students to participate in the electronic design contest and before the selection and training, theoretical basis and practical ability to directly affect the students' engineering design and actual implementation. If the theoretical basis for good students may circuit design is correct, and the practical ability cannot keep up are likely to occur cannot be achieved the system the FBI; and vice versa. Solve the problem, we have strengthened the students identify problems in the design and analysis of issues, problem-solving skills. The design principle of the circuit is completed, immediately on the computer simulation test, or test lap circuit on the circuit board test, and then in the laboratory production of circuit boards to complete the installation and commissioning of the circuit.

Third, the emphasis on teamwork. Electronic Design Contest consist of three members to a team, focus on the division of labor through the overall program, each completed part of the division of labor, and cooperation to complete the overall design. This requires that students in the process of integration and debugging complement each other, learn from each other. In good times, reminding each other to remain calm and encourage each other to tide over the difficulties in the face of adversity, do not blame each other when problems arise. This will not only improve the level of the overall design of the level and students of design issues, while cultivating a student's overall concept, and strengthen the students' own sense of responsibility and team spirit of cooperation [5].

Promote the development of modern logistics industry. Encourage manufacturing companies and professional logistics enterprise information systems and docking, and promote orderly outsourcing of the logistics business of manufacturing purchasing, production, marketing and other aspects, to improve the logistics industry professional, social level. Support logistics enterprises to

accelerate the construction of information technology, improve service levels. Promote the development of industry, regional and logistics information service platform for SMEs. Accelerate the electronic tags, automatic identification, automatic sorting, video services, technology promotion and application of bulk industrial logistics, industrial parks and logistics companies, to improve the level of accuracy of materials management.

Promote new forms of development. Support for manufacturing companies around to promote the product of intelligent, high-end technology and services, innovative business models, and actively develop online testing, real-time monitoring, remote diagnostics, online maintenance, location services and other new formats. Around the key link of the enterprise and industrial industry information, to speed up the design of nurture and develop the set of information technology planning, consulting, project implementation, system operation and maintenance and professional training for the integration of information services. Around to improve key industries backbone enterprises, integration, capacity and level of general contracting services, strengthen enterprise project design, project implementation, systems integration, facilities maintenance and management of the operation and maintenance and other business information construction.

(D) To accelerate the popularization and application of IT in small and medium enterprises to establish and improve the information service system for SMEs.

Structures for small and medium industries, regional public information service platform, industrial design, virtual simulation, sample analysis, inspection, technical support and online services. Encourage SMEs to participate in collaboration with leading enterprises as the core of the industrial chain, enhance inter-enterprise collaboration network environment supporting capacity and industrial chain specialization and cooperation level. Accelerate research and development to promote enterprise management system for the characteristics of SMEs; SMEs are encouraged to widely used information systems in line with their own characteristics. IT enterprises and between enterprises are encouraged to strengthen exchanges, and guide the cooperation the development of advanced and practical technologies and products. Promote SME-oriented trust management, electronic payments, logistics and distribution, authentication and other aspects of e-commerce services. Encourage network infrastructure services for the characteristics of SMEs, and actively develop equipment leasing, data hosting, and process outsourcing services. Encourage SMEs to carry out the web site promotion, e-commerce application, the promotion of SMEs to expand their markets, reduce costs and achieve rapid and healthy development.

(E) To promote the information industry to accelerate development and enhance the integration of the two depth technical support capabilities.

Intelligent upgrade around the automobile, petrochemical, equipment manufacturing, medicine, electricity and other industrial products, to promote collaborative innovation between IT and traditional industries, speed up product development and industrialization in optoelectronics, automotive electronics, power electronics, medical electronics, encourage the development of automotive electronics, optoelectronics, industrial process control-oriented, intelligent instrumentation, smart devices and new information terminals embedded software and hardware and software products. Enhance the ability and level of IT support intelligent transition.

Actively cultivate industrial software, business-oriented product development design, production processes, management and other aspects of the application of information technology support for the field of automobile, petrochemical, food and other application software and industry solutions for R & D and industrialization support the development of enterprises The manufacturing execution systems, industrial control systems, management systems, industrial software, and gradually formed the industrial software R & D and production and service system.

Accelerate the development of information services, to strengthen the information technology industry, the promotion and application of the overall solution. Encourage the development of information technology consulting, planning, implementation, maintenance, and training and other value-added services to improve the level of personalized service. Actively promote the information system operation and maintenance outsourcing services, to support the development of information technology outsourcing services industry. Focus on supporting a number of service enterprises, and encourage the management consulting institution engaged in IT services, regulate the bidding behavior of the information service industry, to strengthen the information security management.

Actively promote cloud computing and networking applications. Cloud computing key technology R & D breakthroughs, and actively develop a service-oriented, to support on-demand use of manufacturing resources, manufacturing capabilities and dynamic collaborative manufacturing cloud service platform. Around the major application areas of infrastructure, industrial control, modern logistics, to carry out the demonstration of Internet of Things applications. Accelerate the R & D and industrialization of the network devices, smart terminals, RFID, sensors, and important application of the system. Accelerate the establishment of industrial development alliance, to cultivate the ability to provide integrated services.

(A) Innovative integration of the two propulsion mechanisms. Give full play to the functions of the leading group of information technology at all levels, strengthen the organization and coordination, the establishment of

cross-sectoral collaborative mechanism for promoting the work of the regional integration of the two. Communication and coordination between the key projects in the enterprise information, the key IT R & D and industrialization, and the use of financial funds to support other aspects, to strengthen the sector, a joint effort. Encourage the regulatory agencies of all levels of state-owned enterprises to establish the rating and evaluation system of information technology to promote the provincial state-owned enterprises and large enterprises to establish a lead agency of information technology and chief information officer system, and guide and support private enterprises to establish an information manager system. Explore ways to establish and promote the implementation of regionally oriented enterprise integration of the two evaluation systems and evaluation of specifications and guidance to carry out self-assessment, and accelerate the establishment of a third party assessment mechanism to guide science to promote the two-depth integration.

(B) Integration of the two multi-channel investment and financing mechanism. Actively organize to declare a national key project for the financial support of the relevant departments of the state. Further play a high-tech industrial development, technological innovation, technological innovation, management innovation, energy conservation, the development of small and medium-sized enterprises, and information industry development of the existing types of financial capital and leading role to increase the integration of the two Chinese Communist sexual technology development, the construction of public service platform, pilot and demonstration projects, such as support, guide enterprises and the community to increase investment in information technology and industrialization, the formation of In order to guide government investment, business investment as the main social investment as an important source of diversity of the investment system. Encourage regions where conditions permit the establishment of the integration of the two special funds to support two of the regional integration of technology and product development platform for building and pilot demonstration. To expand investment and financing channels for SMEs integration of the two projects, and innovative financial services to support commercial financial institutions to provide financing services to eligible enterprises.

(C) To carry out the integration of the two pilot demonstration. Research organizations to implement the work plan of the Ministry of Industry and integration of the two depth around to transform and upgrade traditional industries, development of producer services, and promote the development of information services industry, to carry out the provincial-level integration of the two test area to create, guide enterprises in R & D, production and other sectors of manufacturing, energy conservation and management to carry out the integration of the two pilot demonstration, and further promote the integrated application of information technology and management innovation. Encourage and support the regions in some

better information basis of the region, to carry out the integration of the two demonstration parks and construction of demonstration enterprise. Through the media, on-site meetings, exhibitions and other forms, vigorously promote the two depth integration of new applications, new experiences, new typical. The implementation of the manufacturing information technology demonstration projects, relying on scientific and technological innovation, and enhance manufacturing information supporting role to enhance the core competitiveness of enterprises, promote the development of high-end manufacturing and service capabilities.

(D) Improve the integration of the two service system. Actively cultivate and develop a set of information technology planning, consulting and design, project implementation, system operation and maintenance, and professional training as one of the information services industry. Fully mobilize the telecom operators, intermediaries and large backbone enterprise information resources, and building a number of industry-oriented low-cost, safe and reliable public services, information technology platform. Encourage information public service platform for SMEs to provide IT application outsourcing services, reducing the threshold for SME construction. Study to establish the information public platform operation mechanism; strengthen the platform to run the service norms and trust, protection of environment construction. Strengthen the integration of the two test area and the demonstration zone information infrastructure construction, and optimization of industrial agglomerations intelligent development environment.

(E) To strengthen the integration of the two propaganda and development of qualified personnel. To sum up and promote the achievements and successful experience of integration of the two key industries, to carry out the industry, the regional integration of the two exchanges, the formation of the society as a whole is generally recognized and actively involved in the integration of the two a good atmosphere. Further increase the training, and give full play to the role of universities, research institutes, intermediary organizations and information service providers, for different objects, the different levels of training, personnel protection for the integration of information technology and industrialization. Promote the improvement of university disciplines and professional settings, and to strengthen the IT vocational education training at all levels of information technology professionals. Actively promote the industry, vocational evaluation and highly skilled personnel selection. Encourage foreign exchanges and cooperation in the field of innovation, application and demonstration of the integration of information technology and industrialization, personnel training and evaluation and certification. Support and encourage the province to institutions and enterprises to participate in relevant areas of domestic and international standards.

### **3. Under the Fusion of the two china's Information Management Personnel Training, Exploration of New Models**

Personnel training mode is taken to achieve the training objectives training process of structural styles and the operating mode, including the professional setting, curriculum models, instructional design, teaching methods, and other constituent elements. Information management class talents should follow this basic model for our culture, from the professional setting, teaching methods, good information and management talent.

#### **3.1 Adapt the multi-level personnel training philosophy, emphasis on information technology capacity-building**

The concept of personnel training to meet the information management talent, personality and individual needs, the teacher multi-boot less indoctrination, according to the capacity-building, inspire understanding, tap the potentials of the principle of organization of teaching, to develop students' creative thinking. Target three types of establishment of the intellectual cultivation according to the application, Enterprising, and research training. Application of information management professional is strong, Applied Talents is a focus on personnel training, the students during the school should not only master the management of knowledge, but also to master the basic knowledge of the IT professional, and be familiar with the personnel needs of the IT industry, run mechanism, product development and other sectors, and has experience of business operation experience. Operating personnel in order to adapt to the competition between enterprises, training personnel have the ability to integrate and be good at to maximize the resource utility personnel and research personnel to adapt to the ever-changing IT, R & D capabilities and solve technical problems. In short, the new model requires the formation of information management is different from business management; it is different from a computer professional, professional quality and skills.

#### **3.2 To improve the curriculum, the formation of the teaching system to meet the integration of the two**

Arrangements of the course content, the universities should set up the new; reflect the direction of disciplinary development, closer to the elective to meet the learning requirements of students of social practice.

(1) A comprehensive curriculum reform, the creation of bilingual programs, innovative programs to enrich the curriculum type structure, cultivating students' innovative spirit and the spirit of exploration. Such as the Harbin Institute of Technology to increase the range of fuses professional electives to improve elective credits subject to improve their overall quality.

(2) Adjusting the curriculum, appropriate increase in the Practice of theory courses and Experimental Course in the school teaching the main line, the theoretical study

related to practice teaching laboratory for testing base, schools and businesses to establish the off-campus training practice base, training students' practical abilities.

(3) Curriculum design requires students to master the basic knowledge of economics management and other aspects of theoretical knowledge and computer science and technology, the ability to solve management problems of application of IT, management and computer science and technical expertise effectively cross. To increase the scientific development of cutting-edge issues of information management, such as internet information, business software systems SAP, accounting information systems, data mining course.

(4) Construction of the basic curriculum, to build the information of IT and information application courses system. Different universities in conjunction with their school characteristics and student employment orientation to a reasonable set up special courses like IT audit, IT and organizational change, IT project management, e-government, network marketing, consolidate students theoretical foundation to enhance the students to adapt to space.

#### **3.3 To strengthen the construction of two of teachers to adapt to the integration of the two demand**

Teachers is the fundamental guarantee of personnel training, the structure of university teachers in the integration of the two background, education and teaching ideas and teaching methods with a higher update requirements. Information management and professional teachers to both management knowledge and IT skills, and management information systems software development capabilities and experience. Therefore, for the construction of teachers, the requirements: first, increasing the proportion of foreign teachers, to attract foreign professor of information management to our colleges and universities teach foreign professors will bring new ideas, knowledge, skills, training methods. Second, the teachers of the purely academic type is difficult to meet the learning requirements of the current students, should attract a large number of domestic and foreign enterprises to grow up with high academic qualifications. Third, the selection of outstanding teachers, send them to the well-known universities at home and abroad, and corporate learning. In the process of teacher training should be to improve teachers' ability to innovate and ability to master the application of modern information management and educational technology. Encourage teachers to the corporate attachment, etc., to improve the ability in practice.

#### **3.4 To strengthen the cultivation of practical abilities.**

Innovation and practical ability of the core requirements of complex applications personnel, and technology practice is the fundamental way to cultivate students' creative ability. In the practice of cultured composite applications personnel, personnel training, firmly establishing the innovation supremacy of talent, quality

outlook, adhere to the theory and practice of combining the practical teaching, to strengthen the engineering training and administered practice, the practical training of information technology extensive extracurricular scientific activities and technological competition in the practice of science and technology continue to enhance students' awareness of innovation and innovation capacity. Three-dimensional teaching system of the Harbin Institute of Technology: platform test + Practical + subjects competition is a good inspiration, students can ERP sand table test, innovative test, open the enterprise of knowledge to the test, software skills contest, e-commerce Competition management processes and IT capabilities.

Talent training in information management, we should strengthen the school-enterprise cooperation, especially cooperation with some international experience, strength training institutions, through practices such as obtain training authorized, with the international advanced standard practice, to keep up with the development of the industry pace to improve the quality of training of our information and management talent. In addition, information management and talent training, to strengthen the cooperation of the government and enterprises, while encouraging private investment in information management education and training, economically backward areas, education, government should provide subsidies to support the information management class talents. Through government support and assistance, as well as to encourage private sector participation will further expand the space of personnel training to meet the needs of many multi-level talent.

The development of informationization and industrialization integration is the inevitable choice of China's specific national conditions and the special environment of high-level information management talent are very scarce, and commitment to talented people to the important task of institutions of higher learning, education and training institutions should actively explore for our training and practice, high-quality information management talent.

#### 4. Acknowledgment

The work is supported by Social Science Fund Project of Chongqing University of Post and Telecommunications (K2011-93).

#### References

[1] Ming, Yi., Kui, Li. Informationization and industrialization integration mode selection, and policy recommendations. *Macroeconomic research*.

[2] Zhiwei, Tang., Ruiwei, Wu., Haiying, Yu. (2008). Information management professional core curriculum teaching and core competency training interactive mode *University of Electronic Technology: Social Science*. 10 (5) 29-33.

[3] Xiaofei, Xu., Kuanquan, Wang. (2009). Integration of the two classification cultivate innovative talents to explore and practice. Dean of the Twelfth National University

computer department Forum (Hong Kong), November 6.

[4] Wenjing, Tang., Haiying, Xie., Cairong, Wang. (2010). Employment-oriented information management professionals in training mode. *Management Information*, 2, 124.

[5] Jin, Zhang. (2009). Foreign IT personnel training Comparative Study. Hunan Normal University, Master's thesis, June.

[6] Arp, Lori., Woodard, Beth S. (2002). Recent trends in information literacy and instruction. *Reference & User Services Quarterly*, 42 (2) 124-132.

[7] Peigen, Li . (2006). Active practice: the key to Promoting Undergraduates' Innovation Ability, *China Higher Education*, 17-18, 28 (11).

[8] Halstead, Judith A. (1997). Council on undergraduate research: a resource (and a community) for science educators, *Journal of Chemistry Education*, (2) 148-149.

[9] Zhang Dejiang. (2009). Reform Teaching Methods and Cultivate Innovative Talents [J]. *China University Teaching*, (5) 7-10.

[10] Fang, Jiang., Tiefeng, Liu. (2007). Proactive Practicing to Promoting Undergraduates' Technical Innovation Ability, *Researches in Higher Education of Engineering*, (6) 97-99.

[11] Tian, W. C., Cao, Y. R. (2012). HFSS Simulation of Reconfigurable Multi-band Antenna Bands Based on RF Switch, *IEIT Journal of Adaptive & Dynamic Computing*, (1) 1-4, Jan.

[12] Zhao, Z. L., Liu, B., Li, W. (2012). Image Classification Based on Extreme Learning Machine, *IEIT Journal of Adaptive & Dynamic Computing*, (1) 5-11, Jan.

[13] Zhao Z. L., Liu, B., Li, W. (2012). Image Clustering Based on Extreme K-means Algorithm, *IEIT Journal of Adaptive & Dynamic Computing*, (1) 12-16, Jan.

[14] Zheng, L. P., Hu, X. M., Guo, M. (2012). On the q-Szasz Operators on Two Variables, *IEIT Journal of Adaptive & Dynamic Computing*, (1) 17-21, Jan.

[15] Hu, G. P., Wang, H. Y. (2012). Research on Similarity between Generalized Molecular Graphs, *IEIT Journal of Adaptive & Dynamic Computing*, (1) 22-27, Jan.

[16] YU, J., Zhao, Y. (2012). Weighted Approximation of Functions with Singularity by q-Baskakov Operators, *IEIT Journal of Adaptive & Dynamic Computing*, (2) 5-11, Apr.

[17] Zhao, C. H., Zhang, J., Zhong, X. Y., Chen, S. J., Liu X. M. (2012). Analysis of Tower Crane Monitoring and Life Prediction, *IEIT Journal of Adaptive & Dynamic Computing*, (2) 12-16, Apr.