

# Research of IT Talents' Training in Mobile Internet Application Development

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**Abstract**—To solve the bottleneck of talents requirements of digital contents development of mobile applications and cultivate qualified talents for rapid development of mobile internet, the paper tries to get a solution and way to explain how to overcome current situation about mobile internet application development talents' training. Through the research of domestic mobile internet professional talent training mode, especially comparison and analysis of mobile Internet markets and enterprises talents' requirements, the paper implements a mobile Internet software development talents training mode and curriculum systems through the model of university-industry collaboration and student office and venture office. It is very useful to help solve fast mobile Internet development bottleneck problem of talents by combination of vocational training and degree education and project training fusion course system, which has certain significance to improve the mobile Internet application development personnel training. The research will effectively improve personnel training quality.

**Keywords**—mobile internet; software development; talents cultivation; university-industry collaboration; SOVO

According to the 29th China Internet network development statistics report of China Internet Network Information Center (CNNIC), Chinese mobile Internet user scales up to 356 million. In 2010, the domestic mobile Internet market scales up to 63.7 billion. Mobile Internet and value-added services market are ushering in a new round of rapid development, and the next decade will be the golden age of Chinese mobile Internet development. Mobile Internet application service also rapidly grows along with the Apple, Samsung, Dell, Android factories and technology platform, meanwhile the mobile application stores (Appstore) develop rapidly. Users are accustomed to favoring rich game, reading and pure entertainment mobile applications and mobile Internet application also changes from entertainment class application to socialization application, the mobile application software development needs all kinds of personnel to participate in actively.

At the same time the rapid development of the industry brings about a great talent gap. 3G applied software talents become the favorite of market with huge demand. According to the salary report of China HR website, the average year salary of domestic 3G software engineer reaches 20 thousand RMB of above. 3G technology updates soon, and talent market also changes too fast.

Based on this background, through the three years market research of game industry, mobile Internet industry, and many

links of the practice conclusion of professional teaching, curriculum system reform, practice teaching, the students in business center SOVO virtual company operation mechanism and so on in software engineering (mobile Internet direction), software technology (game development) majors, the paper tries to give full summary for mobile Internet industry software development personnel training and thinking and points out that colleges and universities should make efforts to cultivate the mobile Internet software development personnel and serve the local economic construction and development.

## A. Analysis of the Mobile Internet Market and Talents Demand.

In mobile Internet era, terminal manufacturers' profit mode begins change. As to apple's innovation driven Appstore mode, it makes terminal manufacturers become the application service provider with after-sale service and long-term user contact user interface. So the adjustment of the industrial layout puts forward higher request of the software development personnel.

The mobile Internet industry is the fusion of telecommunication, Internet, media, entertainment and other more fields. All kinds of technologies from broadband wireless communication, mobile communication and Internet technology, digital media technology have gotten very good application. Aspect to the rapid development of mobile Internet industry, it falls into awkward situation of talent shortage. Mobile Internet industry to talented person's ability and quality demand mainly reflects in the following aspects:

- Individuation

The applications of mobile Internet emphasize individuation, such as the typical applications in iPhone, pad, which can meet the requirements of all ages. The future of mobile Internet application should have more personality consideration of architecture, design, development, products. To fully satisfy object demand of mobile Internet needs to design more products with demand and user experience; therefore software development talents should have better capacity of design.

- Spirit of innovation

Mobile Internet industry focuses that content is king, and has derived a lot of new products, application type, and profit model, etc. With the continued development of industry, more and more innovative applications will be created, such as multi-screen display technology, gravity induction technology, etc. The industry needs more creative ability talents.

- Seeking and analysis

Internet industry technology updates quickly and Internet resources are very rich, so it requires employees having a strong ability of information search, technical search so as to get the latest needed information, to learn the latest technology. The mobile Internet and mobile terminal has the trend of open source, like Android system. Open source means more resources will participate in the team and have more chances to get information, but also it also means that quality of consulting and technology will drop, so employees should have very good search ability and very good analysis ability, and can identify useful consulting and knowledge from the huge amount of information by themselves.

- Composite industry

Software development talents firstly need to be familiar with basic hardware principle, bottom communication protocol on mobile platform, at the same time to be familiar with the Internet programming, as well as high level language programming, such as C, Java, etc. It is very important for Industry personnel with multi-industry, interdisciplinary compound ability. Also application of mobile Internet industry concentrates on user experience, so the developers must have composite capability of research and development, interface design, product design, project management, the future trend of products and so on. Because of the particularity of mobile Internet, the composite ability of employees becomes even more important.

### B. Ability Structure Analysis of Mobile Internet Game Software Development Talents

The particularity of mobile Internet industry determines mobile application products' technology composition of art, music, animation, and programming. Whether the success of the APP Store or mobile application mall of each telecommunication operator, China mobile application development in such a huge industry relatively lacks of high level product by independent research, and one reason is short of mobile application design & development talents, at the same time, it is urgent to break through talent ability structure and orientation, curriculum setting during the talents cultivation.

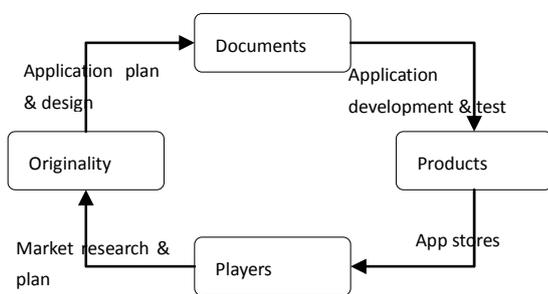


FIGURE I. MOBILE APPLICATION DEVELOPMENT LIFE CYCLE

According to figure 1 and mobile Internet industry market positioning, mobile application development personnel can be divided into the following categories: mobile application

producer, planner, points planning and market planning specialist, engine designer, programmer, tester, application UI designer, original painter, animator (2D&3D), music sound designer, operation architecture designer, technical support and maintenance personnel, marketing planner, etc.

Whatever mobile application or common application, their life circle is consistent and the demand for qualified personnel specifications meets all of the above.

### C. Cultivation Mode Research of Mobile Game Application Software Development Talents Based on Combination of Industry, College and Institute

The demand of mobile Internet talent with the market development is constantly expanding, and how to cultivate practical talents for enterprise and mobile Internet industry need becomes the focus attention in area of education.

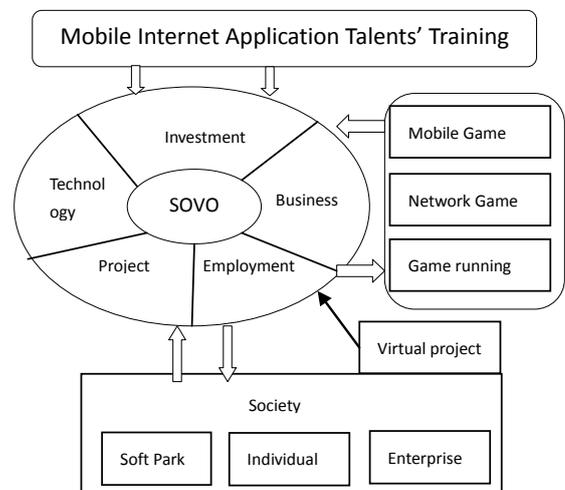


FIGURE II. MOBILE INTERNET APPLICATION TALENTS' TRAINING MODE

By the innovative practical base SOVO (Student Office & Venture Office, which is college students' Venture center) and enterprise in campus, we establish inner practical training base with industry and set up a quaternary practical education system, which is "classroom, lab, SOVO, enterprise" combined the professional degree education courses including mobile application programming, game image design, game music creation, CG, animation drawing, 3D graphic, network programming technology with it to carry out comprehensive training. Experienced teachers are consisting of steering committee which holds a Virtual Company's management, skill guiding work and so on. And they play the role as guidance teacher as a mobile application software development in SOVO. Students can get more precious experience of mobile application design and development by the actual project training, and master more applied technology of mobile phone application or game application from planning, production to operation, so as to enhance students' mobile application software development ability.

Around the needs of mobile Internet personnel cultivation, as well as characteristic of the college game professional personnel training mode, we combined with game college

curriculum system, degree education curriculum system, vocational training course system, and organic combination of production and learning, project training to accelerate game personnel training in the field of mobile Internet through the curriculum reform.

To take practice assessment methods as a professional skills assessment; to cultivate practical mobile Internet game industry talents.

Based on the above principles, we give a mobile Internet game professional curriculum system settings as following:

TABLE I. MOBILE INTERNET GAME PROFESSIONAL CURRICULUM SETTINGS

Course type	Course name
foundation course	Data structure, C plus plus programming design, mobile communication
Vocational and technical basic course	Introduction to game design, mobile applications plan and design, game operation management
Vocational and technical course	Android game development, 2D game development, 3D game development, mobile application UI design and development
Practical training course	Mobile phone application practical training development
Teaching method	Case analysis, architecture design and plan introduction based on mobile application. Design evaluation module based on real case Plan & implement of small and medium-sized game in SOVO

#### D. Teaching Reform of University-Industry Collaboration Practical Training

Through the teacher's effective guidance, the students of mobile Internet game application development can effectively complete co-operative project design and participate in the national software professional design and business competition. The specific operating mode is:

- Around the needs of enterprise, using tutor system as the foundation, outsource enterprise project by communication of tutors.
- Import some small and medium-sized cell phone game application development project
- Through the bidding forms, organize relevant members as a virtual company to finish the project development and testing.
- In the development process, around the mobile Internet professional course teaching need, introducing the project management mechanism, set up a project management group by some students and teachers good understanding and grasping the essence of project.
- Strictly implement software project management mechanism, and let the students accomplish some

programming, testing documentation, so as to achieve learning purpose of mobile application software development course.

- At the same time gather relatively good works to compete. Through the competition, transfer innovative and applied ability of high-end talents to the software industry.
- Through the mode, students of mobile application software in virtual company combination with professional teaching can successfully complete small game plan, character design, scene design, coding and so on. The teaching reform of university-industry collaboration practical training proves necessary and effective.

#### E. Conclusion

Mobile Internet industry's development is inseparable from the cultivation of talents in related fields, and the problem of talents cultivation has become the bottleneck and key of industry development. How to stick to the complete industrial chain of mobile Internet industry, and accordance with the software development life cycle, and to train mobile application planning, design, development, testing and operation personnel becomes a professional education research content.

The combination of industry, college and institute talent training mode has become a consensus, but how to stick to the industrial chain of talent demand, accelerate the cultivation of human speed, ensure the quality of talent training, we need make bold and actual action for the mobile application software development personnel training curriculum reform and the actual project development.

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