

# The development of software engineering technology in the network era

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**Abstract:** software engineering technology is an organic combination of computer technology and program design, covering design language, system platform, software development and database design, which is widely used in life. Software engineering technology is inseparable from the support of the Internet. Due to the complexity of the Internet environment, software engineering technology is prone to encounter security problems in the use process, which is a problem that researchers need to solve. Software engineering technology R & D personnel should actively use software component technology to optimize the assembly of different software and improve the quality of software engineering technology; Optimize role oriented software design, customize software functions for users, and improve user satisfaction; To meet the challenges of the "Internet +" era, we should use cloud computing, blockchain, big data and other technologies to innovate software engineering technology; Focus on network security issues, improve application detection technology, and ensure the security of software engineering technology.

**Key words:** network era; Software engineering technology; Development status; development strategy

## Introduction:

With the comprehensive arrival of the "Internet +" era, the application scope of software engineering technology is more and more extensive, which is conducive to accelerating the progress of computer software development, improving software application functions, meeting the software needs of different users, providing convenience for our social, mobile payment, life services, and further accelerating the commercialization of software engineering technology. Software engineering R & D personnel should actively integrate various software technologies, optimize program design, application software development and software system security, further meet users' entertainment, consumption, medical treatment, education and other needs, and optimize software engineering technology research and development by using the Internet. At the same time, R & D personnel should also focus on the security of software engineering technology, develop anti-virus software and data backup technology, enhance the resistance to computer viruses and hacker attacks, and further ensure the security of users' personal information.

## 1. Development trend of software engineering technology in the network era

### 1. the iterative software development mode is gradually improved

With the continuous updating of software development technology, software engineers in the process of developing software products should take into account the software development cycle and efficiency, control the software development time, further accelerate the software product update iteration cycle, speed up the transformation of software development achievements, and improve user satisfaction with software use. Software engineers should do a good job of software testing and coordination in the process of software development. They should use agile import technology to upgrade the software. First, they should use software testing to test the basic version of the software, check the existing problems of the current version of the software, and carry out iterative development for the existing problems, so as to further improve the efficiency of software iterative development, And then improve the speed and quality of software development.

### 2. continuous improvement of continuous integration technology

With the acceleration of software update iteration, the software function is becoming more and more comprehensive. Under this trend, software engineers should continue to integrate Chinese style software engineering technology, continue to integrate software resources, and ensure code quality. For example, IBM developed the rational build forge framework using continuous integration technology to integrate software configuration and build environment, Let the software automatically complete the build process, then carry out automatic detection according to the requirements of the software development project, adjust the software code in combination with the monitoring data, further improve the technical level of software continuous integration, and ensure the efficiency and quality of software iterative development.

### 3. focus on software engineering development

With the rapid development of Internet technology, software engineering has been widely used in the fields of artificial intelligence, aerospace and automation control, and has gradually become a hot spot in the field of computer development. In order to meet this challenge and meet the needs of different industries and users for software, software engineers should actively develop diversified software to meet the needs of users at home and abroad, and further improve the software function and operation quality. At the same time, software engineers can further optimize usecase technology, use this technology to solve software system problems, further promote interaction with users, accurately analyze user needs, realize the effective role of analysis and needs, truly develop and replace software around customer needs, and further promote the development of network technology.

## 2. Problems in the development of software engineering technology in the network era

### 1. prominent software system security issues

The rapid development of computer network technology has driven the development of software engineering technology, and has also derived a lot of computer viruses and hacker attacks, which has brought some security problems. First of all, software engineers are derived

from the Internet and provide software services to thousands of users through the Internet. Once users download, install and run software, they are vulnerable to network hacker attacks, resulting in software system paralysis, user privacy data leakage and other problems, which seriously affect the development of software engineering technology. It has also become one of the most important problems for software engineers. Secondly, computer viruses can spread through the Internet. Once a user's computer is infected with computer viruses or attacked by hackers, it is easy to cause problems such as software application dysfunction, database damage and system paralysis, which not only affect the user's software use experience, but also restrict the development of software research and development technology.

#### 2. Volkswagen programming software problems

Popular programming software refers to popular compilation software, such as social software, navigation software, shopping software, etc., which is widely used in mobile devices. The balance between these popular software and the network environment is relatively weak, the scale of the software system is uneven, the running state of individual software is unstable, and the security components are not perfect. In the network environment, it is prone to problems such as jamming, system vulnerabilities and inability to pay, which affect the user's software use experience. In order to ensure the safety and stability of Volkswagen software during operation, software engineers should optimize the network balance and function settings during the development of Volkswagen program software, further optimize the software configuration, and ensure its smooth operation in the networked environment.

#### 3. applicability of application software

Under the background of the network era, users' requirements for software functions, fluency, security and so on are getting higher and higher, which promotes the development of software engineering industry. In order to improve user satisfaction, software engineers continue to develop humanized and comprehensive application software, and provide users with download, update and other services through major network software application platforms. However, due to the uneven informatization literacy of software users, they cannot select application software according to the characteristics of mobile devices, and can only download software randomly, which is prone to software incompatibility. Not applicable. Most users' computer skills are limited, and they are not aware of the compatibility and applicability between different software, resulting in that the downloaded software cannot be used normally. Improving the wide applicability of software is also a problem that needs to be solved in software development.

### 3. Development strategy of software engineering technology in the network era

#### 1. actively apply software component technology

Software component technology means that software engineers reassemble the developed software, re-integrate the software application functions, extract excellent functions and program codes from different application software, obtain new composite software, further optimize the new software architecture, program codes, databases, security systems and other functions, and gradually promote the new software to different fields. Further improve the market share of new software. For example, software engineers can collect software with high downloads and user ratings from major software application markets, reassemble these excellent software, adhere to the development concept of developing strengths and avoiding weaknesses, further optimize the application software program code, algorithm, database design and security defense system, further improve the efficiency of software development and the overall quality of software engineering system. Provide users with application software with comprehensive functions, smooth operation and high safety factor. In addition, software engineers can also split the original software through component technology, recombine the software according to user needs and software detection data, and focus on repairing the loopholes in the original software to improve the performance of the new software. Software component technology can not only be included in the cost of software development, but also shorten the software cycle, bring new software research and development achievements to the market as soon as possible, help software development enterprises seize market share, and promote software technology innovation and sustainable development.

#### 2. using role oriented programming method

In the traditional mode, software engineers need to research and develop for application data and application objects. Although they try to meet the technical requirements of application objects, there are still some problems in the research and development process, such as single function and stuck program operation, which affect the quality of application software. In order to solve this problem, first of all, software engineers should actively adopt the role-oriented programming method to better understand the requirements and characteristics of application objects, so as to solve the problems of pattern design, user access control, database management and function modeling in the process of software development, and then conduct software application testing to obtain users' opinions on the software. Adjust the software form according to their opinions, so that the application software can be applied to various contexts and customer needs. For example, software engineers can design data structures according to user roles, design access control codes and software databases for different application objects, simulate different contexts in the development process, adjust program design methods according to software test data, and develop application software with stronger applicability and more perfect functions. Secondly, software engineers should keep pace with the times, do a good job in the application software market research, integrate mobile software apps and applets for software development, transform from data-oriented to face-to-face roles, grasp the needs of users, constantly optimize the internal functions of software, and solve the problems of data calculation, program code simplification and control program simplification in the process of software development. Further improve the quality of software development.

#### 3. actively innovate software engineering technology

First of all, software engineers should base on the development status of China's software engineering technology and Internet industry,

do a good job in the application software market research, develop software around the needs of different user groups, better meet the development of the network era and user needs, and further improve the level of software engineering technology. For example, software engineers can carry out research and development work in combination with the current popular "Internet +" economic model, optimize shopping application software, further refine the direction of software development, and can be divided into group buying software and webcast delivery software to carry out research and development work, integrate vision technology, machine learning and image recognition technology to develop new software, and optimize existing software, Accelerate the software to be more like iteration speed and improve software user satisfaction. Secondly, software engineers should constantly simplify the software operation steps, which can not only ensure the smooth operation of the software, but also improve the user experience. For example, software engineers can debug the software matrix during the research and development process, write program code around user needs, optimize the software detection link, invite users to have software use experience, debug software programs around user experience, improve program applicability and coordination, make the system operation simpler and smoother, and further improve users' software use experience.

#### 4. continuously optimize and improve the application detection technology

In the context of the network era, hacker technology is also constantly improving, which virtually increases the risk of software use, not only threatens the safety of software operation, but also affects the safety of software users' personal privacy data. Therefore, software engineers should constantly improve software application detection technology, detect the software system operation environment, and attack hackers in time, Remind users to upgrade software firewall or antivirus software to enhance the ability of software to resist hacker attacks. First, software engineers should pay attention to software system security, use models to detect system security, such as simulating hacker attacks, testing software resistance and early warning ability, debugging according to software operation and defense ability, and further improve the ability of application software to resist hacker attacks. Second, software engineers should continue to improve the ability of software to defend against computer viruses. According to the current types of application software viruses, they should develop targeted anti-virus programs, update virus database data in time, so that the software can automatically detect computer viruses, and turn on the automatic defense mechanism to prevent the software from being infected by viruses, so as to ensure the operation of the software system and protect user data, Further improve user satisfaction with software use.

## 4. Conclusion

The rapid development of network technology has accelerated the speed of software engineering technology innovation. Software developers should change their research and development ideas, continue to promote the reform of software component technology, integrate high-quality software resources, develop new software, shorten the software development cycle, apply role programming methods, comprehensively collect users' requirements for application software, and develop new software around their needs, Simplify the software operation process, continuously develop software security detection and defense technology, improve the software's own defense ability and confidentiality ability, protect user data, and further promote the development of China's software engineering technology.

## References:

- [1] Sicheng Liu The development of software engineering technology in the network era [j]China new communications, 2022,24 (13): 53-55
- [2] Haiyan Yang Research on the development of software engineering technology in the network era [j]Electronic technology and software engineering, 2021, No.210 (16): 27-28
- [3] Zhiquan Li Analysis of the development of software engineering technology in the network era [j]Computer knowledge and technology, 2021,17 (11): 61-62
- [4] Changsheng Bai Explore the development of software engineering technology in the network era [j]Digital world, 2020, No.171 (01): 64
- [5] Yufei Yuan, Han Han,Tengteng Zhang Discussion on the development of software engineering technology under the background of network era [j] Electronic world, 2019, no.579 (21): 90-91