On Development and Application of Fashion CAD Technology in China
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Abstract. With rapid development of China and gradual improvement of living standard, people have higher requirements for basic necessities. And after reform and opening-up policy, there has been great change in people’s clothing, various fashion trends have swept China, and many clothing designers have also been actively exploring for the latest fashion elements. In order to adapt to development of the times, China has introduced CAD technology, hoping to promote our fashion design industry with this technology. In the thesis, the author will simply analyze and research development and application of the fashion CAD technology in China, and propose some widely existing problems and corresponding solutions.

Introduction
In the 70s of the last century, U.S. firstly developed the fashion CAD system which had been rapidly developing in a very short time. Till the 90s, some of the clothing enterprises in China have also introduced the system from foreign countries. Although the most advanced design technology has been introduced, there is still lack of talents proficient in applying the system, thus making the system lie idle and even waste. Since these enterprises cannot continue developing or using them, they can only regard it as a demand in clothing market, or even as just a necessary chip to take large orders. In order to solve the current status and promote development of clothing industry, it is necessary to solve the existing problems, and stop it restricting development of the industry all the time.

Current Situation and Defects of Domestic Fashion CAD Technology
It is later for China to develop and use this technology than some western developed countries, and China is still in an initial stage even at present. The fashion CAD system does not have powerful enough functions, and cannot be widely applied in the industry, and the function of processing digitized information needs to be further expanded. Besides, technical defects are also embodied in some necessary functions, which cause big obstructions for fashion design.

1. Function of style design
   The function is one of the most basic functions of the fashion CAD system, but the designed fashion styles always cannot present the expected effects due to some defects of system design. Although some software can present delicate style figures, they always need to be operated by designers with superior skills, and consume plenty of energy and time. In such case, increase of design period is quite adverse to competition in fashion market.

2. Function of sample plate design
   Diversity of sample plate is quite important to fashion design, and the fashion CAD also contains multiple basic sample places. For example, when treating clothing slips, such as symmetry, rotating, seam binding, facing, etc., its application will greatly reduce designer’s workload. However, the sample plate design in the system has not reached to a high automation degree, designers still need to draw out step by step. Only they do not use paper or pens, but taping on keyboard and clicking mouth. It can still not further improve the efficiency.

3. Function of grading
   In fashion CAD, the function of pattern grading is extremely important, and it can present different sizes of sample plates through this function, thus making it able to solve problems including pattern repetition and irregular shapes and sizes during sample plate production. Grading
function is one of the functions which are used the most frequently in the fashion CAD system. But it also has problems which drive many designers crazy. After fashion CAD grading on curve, there exist differences between automatic similarity fitting of the curve and sample place necessary in actual production, especially for armhole at the larger part with larger curvature on the curve and the quite obvious changes of crutch and other parts. And at this time, it is necessary to modify each code No., which is quite troublesome.

(4) Function of discharging

The discharging function of CAD used by most of clothing enterprises in China still depends on interaction of human and machine, and manual operation accounts for most of it, and it can even be said that it has no automatic function at all. The function can master overall layout of longer marker making, and it is more convenient to replace sample plate. Besides, the function of discharging can deal with symmetrical stripes and checks, but can do nothing about symmetrical patterns.

Analysis on Factors Restricting Application of Domestic Fashion CAD

As is shown in some survey results, there are about 60 thousand clothing enterprises in China, however, fashion CAD technology has been popularized or applied in less than one third of them. Moreover, there are nearly half of the enterprises which have been using the technology all the time having not made full use of all the functions.

(1) Technical defects

It can be seen from the above that technology is one of the main reasons for restriction of fashion CAD application. There are basically two reasons that the technology has not been improved: firstly, worse knowledge structure of research personnel. In the education system for clothing majors in China, students may well master some professional theories, but know nothing about knowledge and theory combined with computer and clothing. There is no good knowledge structure formed, thus causing many flaws of the designed fashion CAD system; Secondly, lack of reference experience. System research needs brainstorming, and also needs experienced designers for guidance, for they can correctly master the relationship between human body and clothing. Therefore, reference to “experienced master” is extremely important, and they will consider various problems in more overall aspects.

(2) Lack of talents

Lack of talents mainly involves two aspects. Firstly, lack of technician specialized in developing fashion CAD system. Due to lack of complete training system, development personnel cannot solve many technical problems, and some designed functions are not suitable for daily application. Secondly, lack of talents operating the system. Traditional and experienced designers cannot skillfully use fashion CAD, which cases function “waste”. Although students majored in clothing just graduated from colleges and universities can skillfully use the software, they have no experience in applying it in practices. Therefore, many enterprises are reluctant to employ inexperienced students, and there are less and less opportunities for students to improve themselves. This vicious circle causes extreme talent scarcity.

Analysis on Development and Application Strategy of Domestic Fashion CAD Technology

(1) Fashion CAD enterprises improve their R&D level

Key points of developing fashion CAD technology lies in enterprises inputting more energy and money to improve R&D level. Currently, the market is still in an initial stage, it can gain ground in the market by improving the system functions as soon as possible. Therefore, the clothing enterprises shall actively invest in R&D.

Currently, automation and intellectualization of fashion CAD system are immature, which become a breakthrough to improve the software. Clothing enterprises shall refer to successful experience in foreign countries, which will better facilitate the R&D. If they refuse to improve system functions as soon as possible, foreign fashion CAD system will dominate Chinese market, and then it will be hard to replace the conventional, highly automatic and intelligent system even
though they develop the software suitable for usage and operation of Chinese people.

(2) Intensify talent calculation

Our final objective lies in cultivating talents in technology R&D and technology application. It needs to start from colleges and universities for cultivation of technology R&D, and the colleges and universities should cooperated with clothing enterprises and establish talent cultivation team and cultivation mechanism. Besides, they need to reform and innovate their teaching mode, cultivation scheme, course system and frameworks, etc., and only by this way, can they be able to cultivate talents meeting fashion CAD technology R&D demands.

It is equally important to cultivate technology application talents. In the above, it has mentioned that it is more difficult for experienced designers to master advanced technology, while graduated fashion-majored students are lack of experience, which makes relevant enterprises reluctant to hire them. Therefore, we need to solve these problems from two aspects. Firstly, clothing enterprises shall conduct centralized training to “older employees” and regularly organize training classes and courses to enable them to gradually accept, get familiar with and master this technology. Secondly, besides teaching of professional knowledge, colleges and universities need to arrange some practice courses to enable students to apply the learned knowledge into practice and accumulate experience, which can avoid the awkward situation due to insufficient experience after taking a job. The two different talent cultivation modes are formulated for different groups. However, it can be seen that the combination of technology and experience is the standard to evaluate talents. Therefore, they are both the key objects for us to cultivate technical and applied talents, no matter he is an experienced designer, or a student representing new emerging power of fashion industry.

(3) Intensify clothing enterprises’ management awareness of fashion CAD technology

Fashion CAD technology has been updating constantly, and there are plenty of technology data and materials which can be used for multiple times. If they can be put into orderly management, it would be able to conveniently use them in the following design. Therefore, clothing enterprises need specially-assigned people or special department to manage these data and materials and timely update the technology. Meanwhile, there will be some damages of some peripheral equipment of fashion CAD after being used for many years, which also need special department to manage and maintain them.

Conclusion

Although fashion CAD technology has been developing in China for a shorter time, currently, it is developing rapidly. I believe that this technology will be widely applied in fashion industry in China and promote advancement and development of the industry in the near future.

References