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## The optimization and exploration for the clothing design model under the integrated thought

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### ABSTRACT

With the integration of the world economy, competition in the domestic apparel market has become brutally tough. Efficient fashion design and the diversification of clothing style have become a basic requirement for clothing design. Whether clothing brands has a competitive or not in the market, which depends on a variety of factors in fashion design, therefore, this paper introduces the design of integrated thought model in fashion design, integrating a variety of factors of costume design together, the first consideration is the integration to shorten the design cycle in fashion design, and the second is designed by integrate recycled fabric, and the third is the integrated use of design tools, the fourth is the integrated development of design thought, the fifth is integrated optimization of design costs, so as to make clothing design model has been further optimized, the present study fashion design process model optimization has become a key of modern fashion design management activities.

### KEYWORDS

Costume design model; Integration; Optimization.



## INTRODUCTION

Costume design process is the use of a variety of clothing knowledge, tailoring and sewing skills, many factors of considering such as the arts and the economy and so on, that were conceived in accordance with the requirements of design objects, and draw out the renderings, floor plans, according to the drawings for production, to complete the entire design process. It is thus clear that it would not be design without conceiving; it is impossible to produce good design without having a good idea, the application of aesthetic principles is essential in clothing design.

The aesthetic principles for costume design in the design of integrated thinking can be introduced. The so-called "integrated" thought is also called the whole idea, refers to use the vision of "integrate" regarding some clothing design model or graphics as a whole, grasping the relationship between the known and the seeking, and resolving the problem by the way of conducting purposefully and consciously, which is starting from the overall approach, reflects a focus on the overall situation and take into consideration of the overall concept. About Integrated thinking is reflected in the clothing design, domestic scholars Jun Wang, whose paper, "Costume Design Process Model and Its Application Under the Integrated Environment" in January 2009, the paper proposes a new integrated thought in the process of costume design to replace the traditional design methods, the article also exemplifies the efficiency in the development process of integrated apparel design from the practice.

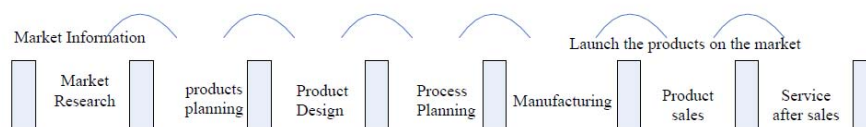
On the basis of previous studies, in addition to using the integrated design approach to shorten the design cycle of fashion design, but also considering other integrated factors of optimizing the costume design model, and expecting to provide the appropriate advice for optimizing China's fashion design model through this research.

### OPTIMIZATION OF COSTUME DESIGN MODEL UNDER THE INTEGRATED THINKING

Costume design model allows further optimization of integrated thinking can be reflected in the following aspects: the first is the use of integrated design approach to shorten the design cycle of fashion design, reflecting the basic requirements of costume design's efficiency, in order to seize the clothing market to win opportunities; The second is the integrated recycle of design fabric, fabric is the foundation of costume design, meeting the market demand for the new trend by selecting appropriate fabrics to make secondary design is in line with the aesthetic principles of costume design; third is the integrated use of design tool, with the continuous development of modern computer technology, the efficiency of the costume design has a substantial increase by means of computer technology in the field of costume design, and promote the continuous development of the garment industry. The costume design model can be further fully optimized by making full use of modern computer technology in the costume design; The fourth is the integrated development of design concepts, which can draw on collective wisdom and absorb outstanding costume culture and thought, make fashion design model become more vigorously and vitalizingly; The fifth is the integrated optimization of design costs, which can reduce the cost of design.

#### Integrated shorten the design cycle

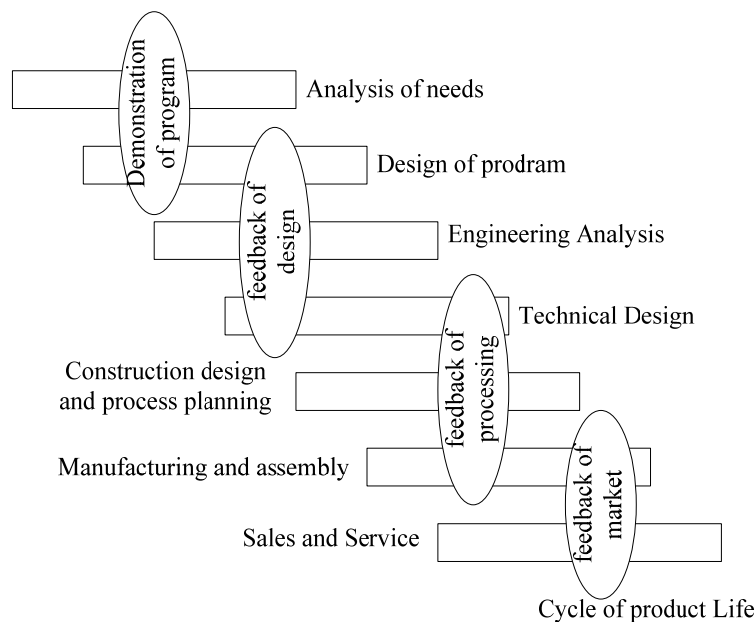
With the accelerated integration of the global economy, costume markets have tendencies of a wide variety, high quality requirements, short lead times. Due to the rapid speed of development of computer networks and communications technology, making the clothing and fashion trends' speed of propagation becomes faster and faster, while clothing fashion cycles continue to shorten, and consumer tastes and demands in clothing continue to raise more to be higher. On the other hand, China has joined the WTO, it is not only have an opportunity, but also be confronted with a challenge. China's textile and garment industry will be confronted with unprecedented fierce competition in domestic and international markets intense environment. Multi-species, multi-color, high-quality and technological content of foreign products have brought a great impact on China's textile and garment industry, these fierce market competition and changes in the numerous textile design, production and management have put forward on how to adapt the problems quickly, therefore, resulting in a clear and effective strategic approach of "rapid response". As early as January 2009. Domestic scholars, such as Jun Wang etc. have proposed a new model for optimizing garment design process in "Costume Design Process Model and Its Application Under the Integrated Environment", which is means that the upcoming integrated design instead of traditional serial design methods, so that the garment design process can be effectively shortened. Jun Wang and other person's experiments also verified the practical value for the development process of integrated costume design, they found clothing design time under the concurrent design of the new model is significantly less than in the traditional serial design model. The following Figure 1 is an illustration of two design development process.



**Figure 1: The development process of traditional serial design**

The development process of traditional serial design is dividing the whole development process of entire costume product into many sequences, the various departments and individuals are simply only doing their own part of job, and is implemented in a relatively independent manner, the last department hands the results to the next department after the work is completed. The development process of costume design are processing in sequence between the various departments step by step, which affected the considering of the overall product development process. And if any one link is breaking down, it must be traced back to the beginning of a link up again, resulting in the design cycle is too long.

Specifically development process engineering of concurrent design (shown as Figure 2) is that: in the early product development, organizing the collaborative project team to work with a variety of functions, so that the staffs can understand the requirements and information apparel product design from the outset, actively researching involved in the business of the department, and to provide the necessary requirements to designers, many prone problems can be resolved early in the development of apparel products, thus ensuring the quality of fashion design, to avoid wasting a lot of rework, during product design and development, making the clothing concept design, the structure design of fabric, costume design process, customer demand eventually integrate as a whole to consider, complete the costume design with the fastest speed by the quality required. Each job is done by the related project group. Team members arrange their own work in the process of apparel design process, but can feedback the information regular or timely and solve the problems with coordination by comprehensive considering.



**Figure 2: The development process of concurrent design**

From the above Figure 2, there are many drawbacks in serial product development process. The primary issue is sector-based organization has seriously hampered the speed and quality of product development. Product designers is difficult to take into account the needs of customers, manufacturing engineering, quality control and other constraints in the design process, it is likely to cause reactions lag between fashion design and clothing manufacture; The design of costume products' manufacturing and collocation are poor, make clothing product development process into the cycle changes of design, processing, testing, repeat, leading into design changes too much, resulting in apparel product development cycle is too long, the high cost of clothing, and can not meet the demand of the apparel market. Concurrent design is Focusing on the concept of overall situation, mainly focusing on the system integration and overall optimization in the process of design development. In traditional serial design and development process, the assessment of the various departments' work just look at the various departments to complete their tasks whether good or not, and lacking the global thinking, therefore, there are a lot of limitations. As for the concurrent design, the design work is mainly to see if there are new ideas, whether creative, whether products have excellent quality and practical performance. It does not fully pursue the best single department, the local process and individual components of clothing, but pursuing the overall optimization in the process of design development, and craving overall competitiveness of costume products.

### **Integrated recycling of design fabrics**

In modern fashion design, an excellent designer must fully grasp the fabric of performance and features, such as the understanding of the characteristics of woven cotton fabric and silk knitting fabrics, as well as the characteristics and applicative fields of ultra-fine high-tech functional fabrics, and also can be applied by many design factors such as colors, structure and fabric etc. Comprehensively, only in this way can design a good work in line with the market trend clothing.

Designer can use a variety of techniques according to their own design ideas to integrate recycled fabric, and express their design ideas. For example, by a variety of new ways to make fabrics wrinkle or deform grinding etc., make the original fabric be creatively integrated to process, so that the fabric properties and appearance presented unexpected style change, in order to meet the apparel market trend changes. For example, some clothing utilize a large number of decoration, such as three-dimensional design of cut flowers, bright beads pieces, feathers and various synthetic gemstones. Another example, in order to create a warm cultural customs, some of the fashion designers who are deliberately attempt to make every effort to explore a variety of an exotic atmosphere and art materials of ethnic characteristics, persuing the integrated dependencies between high-tech materials and cultural integration of ethnic. In the costume design and development process, designers use a variety of distinctive artistic ways to carry out the special treatment for costume fabric, such as: scattered pins, three-dimensional stitching or floating yarn etc. These all can be as the created methods and means in the process of design. For the young people those who seek extraordinary personality and experience the cultural charm, the unique charm is possessed by these garments will lead to a new clothing trends. (Figure 3 shows the integrated recycling of fabric and national cultural)



**Figure3: The integrated recycling of fabric and national cultural**

Thus, the integrated recycling of fabric broaden the fabric of space position of artistic creation in the clothing, enrich people's design ideas, it is not only embodied the designer's imagination, it is even a great form of visual fabric performance by clothing itself impact, it can be said that a new design methods. This design approach through specific fabric processing techniques, so that spatial form of materials, organizational structure, mechanism of the effect and other changes. which is achieving a fabric integrated recycling capabilities, thereby forming a primitive, strange, humorous, sharp, grotesque and other innovative visual arts effect, making the costume design model get a new optimization, and then making the costume designs become more lively and interesting, gives a unique sense of art for people.

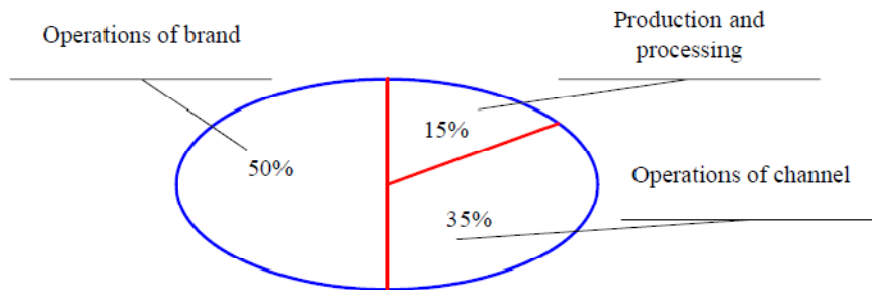
### **Integrated using of design tools**

Currently, CAD design is making costume design efficiency have greatly improved by using a variety of advantages of modern computer technology. Compared to manual drawing, the application of garment CAD drawing has many advantages: firstly, saving time and effort. CAD as a product of scientific and technological progress, there is a strong advantage and vitality, it replaces the processes and steps which are cumbersome and uneasy to do in the manual drawing by people, such as the process of the arc, the transfer of provincial way, and the applications of prototype ; Secondly, to reduce the error. In the hand drawing, due to the precision value of measurement tools, human errors, the errors which can not be resisted etc. are all bringing a certain degree of deviation for plate, It may be able to reduce this error if it is an experienced master worker of hitting the board, however, handmade work is difficult if someone wants to produce high standard, classic type of plate, instead, the computer software can be easily to do that; Thirdly, reduce overall costs. Use the drafting which is designed by computer-aided, although investment of technology is so high, but at the same time reducing the human and material resources, those same old manual methods will be eliminated, and reducing the total cost. By practical system of computer CAD that allows designers to design clothing styles and clothes on screen tablets. The computer can store a large number of styles and patterns for designers to select and modify, so that the design process can be greatly shortened. Meanwhile, the combination of integrated thinking in the design process of concurrent design, making full use of the original garment technology, and to absorb the current rapid development of computer technology, outstanding achievement in information technology, making it be the foundation of the advanced clothing design and manufacture of technology. In addition, due to the mutual integration of Internet and garment technology of computer CAD, greatly enriching the design ideas and costume's artistic creativity of designer, the designer can not only search for the desired clothing style and design

information on the Internet, but also discussing the style of clothing patterns with the customer on the computer screen, and timely modificating the costume design which is based on customer requirements, it can also display the effect by trying-on the clothing on the computer screen. Use this method to design better clothing model is further fully optimized, and will surely warmly welcomed by the market.

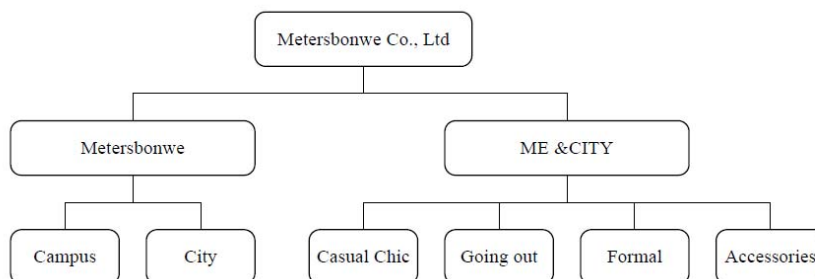
**Integrated development of design conception**

Conceiving, refers to stopping a series of ideological activities in the process of writing article or creating literary works by author, including certain theme, select the theme, discuss and explore proper planning construction of expression and so on. "In the field of arts, Generally speaking, conceiving is the physical state before the abstraction becoming the material objects, that is the process of which eyes of the FT is transformed into" the hearts of the S ", that is the process of the abstraction is gradually becoming clear, whether in life or in arts, and all the design needs to stop, when we are talking about the design, it is inseparable from human activities in a series of thought, and it is inseparable from conceiving, some people often feel poor in costume design ideas, and do not know how to start, or the gap of conceiving is so large between the final work and the original idea that the effect can not be reached in their expectation. Therefore, in the process of costume design, integrated development of design conception becomes very important, for example, Metersbonwe is one of the leading brand in retail industry of casual wearing, firstly adopting the opeating model which is combined with outsourcing the production and using the franchisee's business league to process the production and sales of the brand casual clothing and apparel, the company focused on brand building, product design, channels and management of supply chain and so on. Metersbonwe's success comes from its operating model which is taking the unusual way, that is asset-light business model, the company has paid attention to product design, brand maintenance and upgrading as well as information systems, internal management of supply chain management-based, according to authoritative statistics, the value in the form of clothing, typically processing sectors accounted for about 10% -20%; commercial channel operations accounted for 30% -40%; and brand operations accounted for 40% -50% the last two together accounting for up to 70% -90%. It is thus clear that brands and channels is the lifeblood of the development of the apparel industry (as shown in Figure 4: Configuration diagram of apparel value).



**Figure 4: Configuration diagram of apparel value**

In terms of brand building, Metersbonwe is going through a full range of brand building carefully, strengthening the system of brand promotion and brand marketing, so Metersbonwe is not only becoming one of the leading brand in domestic casual apparel, but also had achieved the title of "Famous Chinese Trademark" in 2006. In the aspect of the product design, Metersbonwe's costume design company with more than a hundred people and technology experts, they formed a very strong team for product design of clothing, its clothing product design's capabilities is in the lead to the other similar domestic apparel companies, keeping balance for the nastic requirements of domestic and foreign fashion products as well as the rational requirements of domestic sales channels and other objective conditions, in order to meet the pursuit of individual goals for younger generation of Chinese consumer's demand, providing a full range of "fashion consultant" type of casual apparel products design, while also focusing on internationalization and Chinese roots of product design. (Figure 5: Metersbonwe brand map).



**Figure 5: Metersbonwe brand map**



From product design of Metersbonwe's costumes, you can see the integration of its pioneering design concept, its costume design is not only incorporates outstanding costume's cultural traditions from domestic and abroad, and they are fully considering various demands in product design which includes: fashion, different regional consumer demand as well as past sales of different products and so on, Metersbonwe will be annually organized core designers to France, Japan, China, Hong Kong and South Korea and other international markets to inspect; Assemble the various regions' agents together to solicit the advice of product development twice a year ; Developed the new models about 1000 on the basis of fully grasping the market information each year, of which 50% officially put into market. Meanwhile, Metersbonwe's headquarters also houses a collection of more than 8,000 pieces of various types of ancient China clothing, unique Chinese style elements is not only giving the inspiration for company's designers, but also enhance consumer's acceptance of the brand. (as shown in TABLE 1: Metersbonwe brand value).

**TABLE 1: Metersbonwe brand value**

List name	Year	Brand Value (Yuan)	Rank
Hurun's private brand list	2009	6.5billion	31
	2010	8.3 billion	48
	2011	11.5 billion	43
	2012	7.8 billion	19

The body of costume design is the human, good design ideas is matching the people's consumer psychology and meeting people's consumption demand, prevalent clothing means that the changes of people's costume aesthetic psychology and aesthetic norms, screened that under the different periods and environmental conditions, people's balance and harmony between individual performance and design criteria, and then fashion designers to grasp the pulse of popular clothing, insighting into the prevailing trend of clothing, targeting on a layer of touching costume consumer's spending objects, hobbies, market demands for the design orientation when they are processing the conceptual design. Only in this way can they make design ideas comply with the tide, trend to mature, and achieving some inventions. The success of Metersbonwe product design is a clear example, which also shows the integrated development of design concept is in favor of the further optimization of costume design model.

**Integrated optimization of design cost**

Currently, there are some fashion designers are having the relatively vague understanding of design cost in the process of costume design, and also having the scanty understanding of the fabric costs construction. As a good designer, in addition to outstanding capabilities for costume design, but also need to have basic knowledge of fashion design cost, and requiring them to have a general framework of entire apparel design costs, so as to be qualified clothing designer. The design cost covers many aspects, the most basic is the initial valuation of the fabric, the fabric costs include many factors that can be summarized by the following formula:

$$\text{Fabric cost price} = \text{raw material of greige cloth costs (included weaving fees)} + \text{dyeing or printing expenses} + \text{tidy process fees} + \text{test after finishing playing volume packaging costs} + \text{tax} + \text{all aspects of loss} \tag{1}$$

We can explain the above formula by a simple example, such as fashion designers need to design casual clothing styles, they need to purchase cotton fabric. If they are considering that convenient tailoring and tangible benefits for costume, they can use wide fabric, such as if they are choosing to purchase conventional woven fabrics, finished width is 57", the yarn is 20X16, density is 128X60, then advance into consideration of which the greige cloth will have a shrink loss during the process of processing before dyeing fabric becomes into finished fabrics of dye, purchasing greige cloth's width should be 63. If 63", then the fabric price of 20X16 is 11 yuan per meter, then the estimate of dyeing processing fee is 3 yuan per meter, finishing the processing fee is \$ 1 per meter, while other cost estimates (including inspection and rolling packaging costs + taxes + all aspects of the loss of fees) are almost about 1 yuan per meter, the data into formula 1, then 57", 20X16, 128X60 finished fabric dyeing valuation is calculated as follows:

$$\text{Fabric cost price} = \text{raw greige cloth's costs (included weaving fees)} + \text{dyeing or printing expenses} + \text{tidy process fees} + \text{test after finishing playing volume packaging costs} + \text{tax} + \text{all aspects of loss}$$

$$\text{Woven fabrics dyed product price} = 11 \text{ yuan / m} + 3 \text{ yuan / m} + 1 \text{ yuan / m} + 1 \text{ yuan / m} = 16 \text{ yuan / m around}$$

Since the range of apparel fabrics' species is relatively broad, the above following is just the initial introduction of the basic fabric of accounting methods, specific and detailed costing of each fabric needs the designers to learn and ask more in terms of a selection of fabric, and learning from the market practice. Designer only to master the basic fabric integrated on the basis of accounting methods can make clothing design model be further optimized in terms of cost, its designed apparel products are having more competitive.

**CONCLUSION**

Costume design is a whole concept in itself, involving many disciplines, likewise, integrated thinking also reflects the overall scientific concept, and introducing integrated thinking in costume design, costume design model can be further

optimized, this study is based on the previous people's research, in addition to using the integrated design approach to shorten the design cycle of fashion design, considering other integrated factors in the multi-angle which are optimizing the clothing design model, including the integrated recycle of fabrics and integrated use of modern design tools, while the of integrated optimization of design costs in the process of costume design models, and focuses on the integrated pioneering of concept in clothing design, because the design concept is the soul of costume design. This study was to explore the integration of fashion design ideas, in order to initiate further inquiry.

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