Fashion Design and Innovation

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ABSTRACT

The textile and fashion industries are the second largest industrial sector in the world. As in any high volume sector, the textile and fashion industries include a large variety of sub sectors ranging from elite fashion designers in Europe and the United States to mass production sewing workshops in India and China, from exclusive car upholstery designers to budding products manufacturers etc. Given the fact that a mere 30% of textile and fashion designers and manufacturers use computer aided design (CAD) software for the design process, these sectors hold substantial market growth potential in coming years. Keeping in mind that the other 70% still work in a completely manual process using scissors and cardboards, there is a great deal of operational and production effectiveness this industry still has to achieve in order to catch up to its complementary industries (car, aircraft, elite fashion etc).

Key words: CAD, Innovation, Design, Software, Pattern, Fashion Industry

INTRODUCTION

There are a few fashion design software firms who have picked up that flag, and now make software solutions that are easier to implement. Hopefully the way in which fashion design software companies have made a step towards the development of computer aided design in the fashion and textile industries will provide an easier and faster solution[1].

Over the decades computers and fashion have developed gradually, changed with time, taste and trend. But nobody knew that a time will come when both these fields will complement each other so well. Today fashion design has reached new heights by computer aided methods of design. As a result of which, computer industry has got its new customer. Computer technology is making waves in the fashion design zone. From determining textile weaves to

sizing designs; computers are a vital component of the fashion industry. Computer aided design (CAD) programs reduce the demand for manual sketches, thus saving time and human efforts. New software programs continue to replace old manual skills. Going by the wayside are "old fashioned" flat pattern construction, pencil sketching and traditional math-based pattern sizing. Those who lag in math and falter at sketching can now breathe a little easier[2].

Although most designers initially sketch designs by hand, a growing number also translate these hand sketches by means of computer aided design. CAD allows designers to view designs of clothing on virtual models and in various colors and shapes, thus saving time by requiring fewer adjustments of prototypes and samples later.

The clothing industry has always been characterized by change and variety, but never so much as today. Until recent times, changes in styles of dress were very gradual and a popular fashion could have a very long life, at the same time, the variety and types of clothing produced were limited by the life-styles and conventions of the day.

This scenario is changing since last and the changes in today's fashion changes are dramatic and frequent and they are coupled to an unending variety of clothes for every occasion and activity. As a result the clothing producer has to reconcile the conflicting requirements of the market and of his manufacturing facilities in order to stay in business.

The key to optimize this conflict of interest's lies in the ability of management to maximize the productivity and to decrease response time. This can only be achieved by increasing the effectiveness of the operational performance levels of every department with updated technologies within the company.

For solving all the present problems there has been advancements made in the field of garment manufacturing. One vital example being the integrated use of CAD in garment making from designing to production process[3].

The design management of a CAD is a dynamic system which is updated regularly, for instance by the addition of new tools or design flows. The persons creating and updating the design are referred to as design developers. This thesis proposes a method to efficiently develop such innovative design.

For a long time there has been a lot of confusion regarding **what innovative design is?**

Innovation implies newness. The growing importance of innovation to entrepreneurship is reflected in a dramatic increase in literature that addresses the role and nature of innovation (Drazin and Schoonhoven, 1996)[4] and (Drucker, 1985)[5]. Additionally, without a good working

definition, we still lack good measures of innovation. (Kotabe and Swan 1995)[6] argue that one of the greatest obstacles to understand innovation has been the lack of a meaningful measure. Without adequate measures, theory development is impeded and it becomes difficult to suggest appropriate interventions for firms seeking to pursue innovations. To address these issues, the overarching research question considered in the present study is, what is innovation and how should it be operationalized?

As a starting point, we note that nearly every definition of innovation focuses on the concept of newness. Slappendel (1996) argues that the perception of newness is essential to the concept of innovation as it serves to differentiate innovation from change[7]. Damanpour defined innovation as "the generation, development, and adaption of novel ideas on the part of the firm" (1991)[8], and Zaltman et al. defined it as "any idea, practice, or material artifact perceived to be new by the relevant unit of adoption" (Zaltman, G, Duncan, 1973, p. 10)[9].

Like designers, CAD designers produce lots of data and use a variety of tools while creating their designs. Therefore, the support provided by the design softwares to developers should include management of their data, tools and flows.

The time required for the development of a CAD design is almost entirely consumed by the construction and maintenance of its central component, i.e., the design management system. Therefore, the efficiency of CAD designs development can be greatly improved by providing better assistance to the design developers. Currently design developers implement their design systems using specific software and often they do not have special features for the creation of a design which can be very time consuming task. Moreover, the resulting system can be difficult to maintain and extend with new functionality. Therefore, the design development time can be greatly reduced if it is designed using a dedicated design software. Using such software, the design under development can be represented at a higher level of abstraction. In this thesis it is demonstrated how such softwares can be utilized to design new garment according to modern fashion needs.

Fashion designing software greatly aids the work of a fashion designer and help in more effective performance. They help in saving a lot of a time, money and energy. These software packages help the designer in experimenting with a number of textures, colors and patterns for producing the perfect design. They provide a variety of sketch backgrounds, tools for

designing and repeating patterns and texture mapping.

There are various fashion design software packages available in the market today, such as Adobe Photoshop, Adobe Illustrator and CorelDraw among others. Fashion designers have often been observed to use customized software according to their own individual requirements. They aid the designer right from the stage of designing to the production of apparel. Perfectly fitting garments can be created. The process of creating a design or a pattern as well as cutting has become easier with the help of software. Designs can be made faster and more accurately. There are a number of basic designs incorporated in the software, which the designer can make use of. The designers can make modifications in the basic designs and personalize them. Even 2D and 3D formats of a design can be created. These designs can be printed or sent to others through e-mail. Such software helps the designer in creating a number of patterns and also in the repetition of patterns. They also help the designer in selecting the right texture for the garment. The designer can choose the right color for the garment from the various colors available and can even customize them. It helps in the easy management of production. The efficiency and productivity of the designer increases with the use of designing software. The fabric drapery module in such software allows the designer to drape a design on a model by dragging and dropping the design on the model. Patterns can be created and applied on the design.

CAD, or computer aided design, is often used in the fashion industry to create garments efficiently. Various programs help designers create their own textile patterns, see their fashions in three dimensions and create designs on the computer in less time than traditional sketching. It is possible to fix mistakes, alter designs, add details without start designing from beginning are some of the silent features of CAD systems. Nowadays, machine embroidery has grown by leaps and bounds. Computers have added another twist into this sewing technique making the process easier for mass production of embroidered designs. At present, machines are available in the market which can embroider designs. Specially designed machines can even read a computerized design and stitch it[10].

The garments industry in India has been a pioneer industry. India has a 3.28% share in world clothing trade. Over 40% of India's textile export consists of apparel. Globalization and increasing purchasing power within the country have seen the

fashion industry's growth at 35% per annum. Among the various segments, women's wear has witnessed the fastest growth, reflecting the changing consumer base[11]. Garment and fashion industry both are dependent to each other. India is a fashionable land and the country spread its fashion colors on various aspects. Indian garments are in great demand in the world.

CAD software streamlines the entire design cycle, resulting in a better quality and cost effective final product. CAD software also extends beyond just the design process. Designers utilize CAD software to create final marketing presentations for merchandisers so their finished designs can be sold.

Basically, there are two types of fashion software one is vector-based software and other is raster-based software[12]. Vector images are also referred to as object-oriented drawings. Vector images provide greater resolution and quality as compared to raster images. These images can be resized without degrading the quality of the image. They are much smaller than raster images. Raster images are more realistic than vector images. They can be used to create a natural picture by providing a number of special effects. It is for the designer to decide whether to use vector-based software or raster-based software. The right fashion designing

software helps the designer in expanding his creativity by allowing him to experiment with a wide range of designs, patterns, textures and colors. More work can be achieved in less time with the help of such software, which helps in increasing productivity.

CAD programs help designers work more efficiently[13]. It is often used in the fashion industry to create garments efficiently. Various software help fashion designers to create textile patterns, see their designs in three dimensions and create designs on the computer in less time than traditional sketching.

CAD software aids in the storyboard creation for fashion collections during the design or pre-production phase. The fashion storyboard showcases each piece of a collection in different views such as fashion illustrations and technical sketches. Illustrations are used to show how several fashion pieces work together to create a fashion look or style. Technical or flat sketches of each individual garment are displayed with the specifications for each garment listed next to them.

Designers can create a fabric print on fashion software and have it printed on the fabric of their choosing. Historically, prints and fabric weaves that required a lot of manual attention during construction such as jacquard were

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expensive. The magazine Fashion Era advises that CAD software has automated textile weaving for jacquards and similar fabrics via the software instructing the fabric loom when to move threads into new positions. This is important for fashion design because this automated weave construction lowers production costs.

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Major brands, producers and retailers are evolving in a competitive environment where speed, quality and price are the main criteria. In choosing an industrial partner, in the same way as in building client loyalty, players in the fashion world must be flexible, quick-reacting and productive. Time and distance can no longer be obstacles for collaboration when creating a collection. To concentrate their energy on issues of brand image, renewal and costs optimization, fashion industrialists need to be able to have complete confidence in the solutions they choose[13].

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