Softness Metric for Furniture Virtual Shopping

by

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Dissertation submitted in partial fulfillment of

the requirements for the

Bachelor of Technology (Hons)

(Business Information System)

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CERTIFICATION OF APPROVAL

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A project dissertation submitted to the
Business Information System Programme
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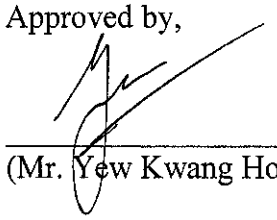
Approved by,



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December 2008

CERTIFICATION OF ORIGINALITY

This is to certify that I am responsible for the work submitted in this project, that the original work is my own except as specified in the references and acknowledgements, and that the original work contained herein have not been undertaken or done by unspecified sources or persons.

VU PHUONG ANH

ABSTRACT

The report performs as the preface of Final Year Project namely Softness Metric for Furniture Virtual Shopping (SMFFVS). The project will be developed XML, Flash CS3 Professional language which will be based on several crucial issues identified from the affected industries.

The system looks at Human Computer Interaction aspect and use of reality haptic device as the possible solution.

In this project, I want to introduce an e-commerce application that is designed and developed by XML and flash of virtual shopping mall on fabric softness of furniture. Moreover, the system will describe the softness of each part of item. A metric system will be built logically to let users imagine about the softness of each section.

ACKNOWLEDGEMENT

This project is the outcome after three years and a half of my study in Universiti Teknologi PETRONAS, with valuable knowledge and guidance from all lecturers as well as friends. Therefore, it is difficult to call the name of all people who assisted me. However, there are some special people to whom I would make to honor their great efforts that have contributed to this project.

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Furthermore, I would like to take this opportunity to thank UTP for equipping me knowledge and giving me a chance to challenge this final year project so that I have experienced project management and development and be ready to pursue my career.

Last but not obviously least; I would like to dedicate my efforts over fours years to my loving and supportive family. Volumes cannot hold all that they have taught, shared and

protected me. My family always is a solid moral support so that I can have strengths to overcome all obstacles on my way.

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CHAPTER 1
INTRODUCTION

1.1 Background of Study

The main reason that I chose this topic is I am really interested in researching on softness metric for furniture. My course is Business Information System. And I had been studied many programming languages such as Internet Programming, Visual Basic, Object Oriented Program, Structure Programming C...With the basic knowledge of programming, the hard-working in researching information about my topic, I hope that I can do it as far as possible. I really know that, this topic is quite hard. It requires me to do research; design and development work in each discipline, especially on real-world problems which would motivate me to produce practical solutions. But, it is an opportunity for me to use the tools and techniques of problem solving to solve the problems they have encountered. With this approach, the learning process is gained through 'by -doing' experience. Management concepts which provide for me with skills required for managing a project are also incorporated. Thus, I hope that I will do it well by mastering various useful disciplines, which will enable them to participate and prepare for my near future employment.

1.2 Industry of E-commerce

This topic aims at designing and implementing to provide information on fabric softness of furniture for an e-commerce application.

Existing electronic ecommerce applications only provide the user with the relatively simple browser-based interface to access the available products. Buyer, however, are not provided with the same shopping experience, as they would have in an actual shopping or shopping mall. With the creation of a virtual shopping mall, simulations of most of the actual shopping environments and user interactions can be achieved. The virtual shopping mall brings together the services and inventories of various vendors, adding items in a virtual shopping card, or performs intelligent searches.

1.3 Problem statement

As of the background of study discussed in previous section, majority e-commerce sites are not or slow in making the switch due o several serious drawbacks of softness metric for furniture virtual shopping relative to the traditional digital catalog.

Customers who make up the biggest group by accounting two-third of the total online buyers will not visit the site for the second time if navigation is time consuming despite its virtual appeal. In this respect, the 2D digital catalogue seems to be more practical in is better categorization and search of product information.

These are some problems and difficulties as:

i) The shape and the softness of products limit to display. Being to able to show the design and products are important to attract new customers and to keep them moving

ii) It is hard to explain to customers about the intangible softness of furniture on the website. Customers can not tough; they also can not image the real shape and material of items that they want to buy.

These problems can be solved by applying new technology and tools instead of manually processing.

1.4 Objectives

This work is a hybrid application design that addresses the shortcomings of the conventional virtual shopping mall on fabric softness of furniture.
In this application design, student uses the furniture industry as the theme because it poses bigger marketing challenges over e-commerce.

1.5 Scope of Study

The main scope of this project is to concentrate on the process of how to describe the softness of furniture on the website. The new proposed system will computerized and automated existing manually process. The topics to study on are as follow:

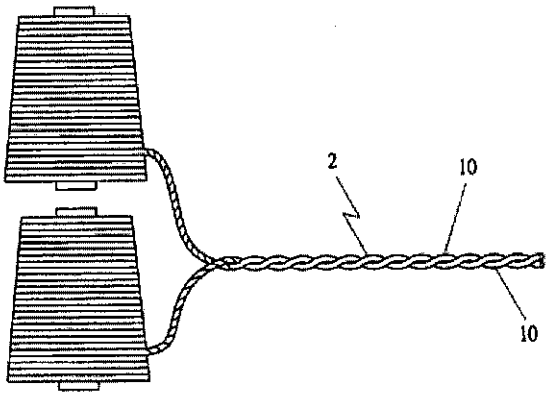
i) Using XML, flash to design and develop a website
ii) Concentrate on the process of how to describe the softness metric for sofa

CHAPTER 2
LITERATURE REVIEW

2. Fabric softness

2.1 Furniture fabric and a manufacturing method for yarn of furniture fabric

Furniture fabric is made by weaving plural single-ply warp and fill, plural two-ply twisted warps and fills, plural warps and fills mixed with single-ply and two-ply, or two-ply warps and fills in the number of proportion X to Y, having multiple structures, various colors, stronger supportive force to bear heavy weight, and superior strength tension. And the manufacturing method of yarn of the furniture fabric includes the first step of making single-ply yarn, and the second step of twisting plural-ply yarn of the same material or single-ply yarn of different material into two-way-twisted compound yarn for producing such a furniture fabric, and the third step of weaving warp and fill by using such a yarn into various kinds of furniture fabric.



Claims:

- A manufacturing method of yarn of furniture fabric, comprising: making single-ply twisted yarn in a right or a left direction with a single-ply yarn by means of twisting equipment; and, making the two-way-twisted compound yarn with two or more of said single-ply twisted yarn by means of compound twisting equipment, obtaining said the two-way-twisted compound yarn for furniture fabric.

- The manufacturing method of yarn of furniture fabric as claimed in claim 1, wherein said single-ply yarn is made of acrylic fiber.
- The manufacturing method of yarn of furniture fabric as claimed in claim 1, wherein said single-ply yarn is made of polypropylene yarn.
- The manufacturing method of yarn of furniture fabric as claimed in claim 1, wherein said single-ply yarn is made of polyethylene.
- The manufacturing method of yarn of furniture fabric as claimed in claim 1, wherein said single-ply yarn is made of polyester.
- The manufacturing method of yarn of furniture fabric as claimed in claim 1, wherein said single-ply yarn is made of polyvinylchloride.
- A furniture fabric woven with warp and fill, wherein said warp and said fill are made of compound twisted yarn or a compound woven yarn.
- A furniture fabric woven with warp and fill, wherein said warp and said fill are made of single-ply yarn and two-way-twisted compound yarn or of a single-ply yarn and a compound woven yarn.
- A furniture fabric woven with warp and fill, wherein said warp and said fill are both woven with single-ply yarn, two-way-twisted compound yarn and compound woven yarn.
- A furniture fabric woven with warp and fill wherein said warp and said fill are both woven with parallels merged yarn.

Summary of the invention

- The purpose of the invention is to offer a new furniture fabric which provides superior supportive force for heavy weight and tension strength and still good softness, and a manufacturing method of such furniture fabric.
- The features of the invention are described as below:
- 1. The twisting technique of the furniture fabric in this invention is performed according to the physical principle that twisting with positive and negative force thus can prevent the flaw of curling and tangling of common yarn after twisting. The first step of making such yarn is to twist material into single-ply yarn, and the second step is to twist two or more single-ply yarns of the same or the different material into compound plural-ply yarn, therefore can

overcome a drawback of common yarn that thermal shaping is mandatory prior to weaving.

- 2. The furniture fabric is woven, in a certain ratio, of compound yarns twisted by single-ply warp and fill.
- 3. The furniture fabric is made, by weaving either the compound yarns twisted by double-ply warp and fill in both ways, or that twisted by single-ply warp and fill with double-ply warp and fill, or that twisted by single-ply warp and fill with the compound woven warp and fill, or the parallelly merged yarns according to preset ratios, which enables to have good variety of colors, better supportive force for heavy weight, and stronger tension strength.

2.2 Low solvent rinse-added fabric softeners' having increased softness benefits

The present invention relates to rinse-added fabric softening compositions, including translucent or clear liquid compositions. The compositions of the present invention comprise a polyoxyalkylene alkyl amide surface active agent which provides increased softness to fabrics, increased stability and formulatability to dispersed phase liquids, and provide for a reduced level of principal solvent when formulated into translucent or clear liquid compositions. In the most basic form, the compositions of the present invention comprise: a) from about 1% to about 80% by weight, of a fabric softening active; b) less than about 15% by weight, of a principal solvent, said principal solvent having a ClogP of from about 0.15 to about 1; c) from about 0.5% to about 10% by weight, of a polyoxyalkylene alkyl amide surface active agent; and d) the balance carriers and adjunct ingredients.

A rinse-added fabric softening composition comprising:

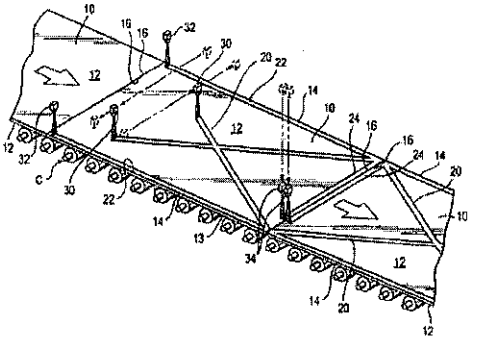
- From about 1% to about 80% by weight, of a fabric softening active;
- From 2% to about 15% by weight, of a principal solvent, said principal solvent having a ClogP of from about 0.15 to about 1, and said principal solvent is selected from the group consisting of C_6 diols, C_7 diols, the isomers of octanediol, derivatives of butanediol, the isomers of trimethylpentanediol,

the isomers of ethylmethylpentanediol, the isomers of propylpentanediol, the isomers of dimethylhexanediol, the isomers of ethylhexanediol, the isomers of methylheptanediol, the isomers of octanediol, the isomers of nonanediol, alkyl glyceryl ethers, di(hydroxy alkyl) ethers, aryl glyceryl ethers, the derivatives of alicyclic diols, derivatives of alkoxylated C_3 -C_7 diols, aryl diols, and mixtures thereof;

- From about 0.5% to about 10% by weight, of a polyoxyalkylene alkyl amide surface active agent

2.3 Method to reinforce cellulosic fiberboard panels via reinforcing bands on expansive surface

Reinforce a panel made of cellulosic fiberboard, bands of a reinforcing material, which is cementitious, are applied via spraying, as the panel is being conveyed, so as to cover a minor portion of the overall area of a given one of the expansive surfaces, and the panel is devoid of the reinforcing material except at the bands. The bands include two diagonal bands, each of which extends between diagonally opposite corners of the given one of the expansive surfaces, two longitudinal bands, each of which extends along a respective one of the longitudinal edges of the given one of the expansive surfaces, and two transverse bands, each of which extends along a respective one of the transverse edges of the given one of the expansive surfaces.



A method to reinforce a building construction panel made of cellulosic fiberboard and having two expansive surfaces, two longitudinal edges, and two transverse edges, each expansive surface having four corners and each expansive surface having an overall area, the method comprising a step of applying a slurry of a reinforcing material containing an inorganic binder enveloping particles so as to cover a minor

portion of the overall area of a given one of the expansive surfaces with plural bands of said material, wherein the panel is devoid of the reinforcing material except at the bands.

The method of claim 1 wherein the applying step includes applying two diagonal bands of the reinforcing material so that each of the diagonal bands extends between diagonally opposite ones of said corners of the given one of the expansive surfaces.

The method of claim 1 wherein the applying step includes applying two longitudinal bands of the reinforcing material so that each of the longitudinal bands extends along a respective one of the longitudinal edges of the given one of the expansive surfaces.

The method of claim 1 wherein the applying step includes applying two transverse bands of the reinforcing material so that each of the transverse bands extends along a respective one of the transverse edges of the given one of the expansive surfaces.

The method of claim 1 herein the applying step includes applying two diagonal bands of the reinforcing material so that each of the diagonal bands extends between diagonally opposite ones of said corners of the given one of the expansive surfaces, applying two longitudinal bands of the reinforcing material so that each of the longitudinal bands extends along a respective one of the longitudinal edges of the given one of the expansive surfaces, and applying two transverse bands of the reinforcing material so that each of the transverse bands extends along a respective one of the transverse edges of the given one of the expansive surfaces.

A method to reinforce a building construction panel made of cellulosic fiberboard and having two expansive surfaces, two longitudinal edges, and two transverse edges, each expansive surface having four corners and each expansive surface having an overall area, the method comprising a step of applying a slurry of a cementitious material containing an inorganic binder enveloping particles so as to cover a minor portion of the overall area of a given one of the expansive surfaces with plural bands of said material, wherein the panel is devoid of the cementitious material except at the bands.

The method of claim 6 wherein the applying step includes applying two diagonal bands of the cementitious material so that each of the diagonal bands extends between diagonally opposite ones of said corners of the given one of the expansive surfaces.

The method of claim 6 wherein the applying step includes applying two longitudinal bands of the cementitious material so that each of the longitudinal bands extends along a respective one of the longitudinal edges of the given one of the expansive surfaces.

The method of claim 6 wherein the applying step includes applying two transverse bands of the cementitious material so that each of the transverse bands extends along a respective one of the transverse edges of the given one of the expansive surfaces.

The method of claim 6 wherein the applying step includes applying two diagonal bands of the cementitious material so that each of the diagonal bands extends between diagonally opposite ones of said corners of the given one of the expansive surfaces, applying two longitudinal bands of the cementitious material so that each of the longitudinal bands extends along a respective one of the longitudinal edges of the given one of the expansive surfaces, and applying two transverse bands of the cementitious material so that each of the transverse bands extends along a respective one of the transverse edges of the given one of the expansive surfaces.

Summary of the invention

In a panel made of cellulosic fiberboard and having two expansive surfaces, two longitudinal edges, and two transverse edges, each expansive surface having four corners and each expansive surface having an overall area, this invention provides an improvement wherein the panel has bands of a reinforcing material, for which a cementitious material is preferred. The bands cover a minor portion of the overall area of a given one of the expansive surfaces. The panel is devoid of the reinforcing material except at the bands.

The bands may include two diagonal bands, each of which extends between diagonally opposite ones of said corners of the given one of the expansive surfaces. The bands may include two longitudinal bands, each of which extends along a respective one of the longitudinal edges of the given one of the expansive surfaces. The bands may include two transverse bands, each of which extends along a respective one of the transverse edges of the given one of the expansive surfaces. Preferably, the bands include such diagonal, longitudinal, and transverse bands.

As a method to reinforce a panel made of cellulosic fiberboard and having two expansive surfaces, two longitudinal edges, and two transverse edges, each expansive surface having four corners and each expansive surface having an overall area, this invention provides a step of wherein applying bands of a reinforcing material, for which a cementitious material is preferred, so as to cover a minor portion of the overall area of a given one of the expansive surfaces, wherein the panel is devoid of the reinforcing material except at the bands.

Two diagonal bands of the reinforcing material may be thus applied so that each of the diagonal bands extends between diagonally opposite ones of said corners of the given one of the expansive surfaces. Two longitudinal bands of the reinforcing material may be thus applied so that each of the longitudinal bands extends along a respective one of the longitudinal edges of the given one of the expansive surfaces. Two transverse bands of the reinforcing material may be thus applied so that each of the transverse bands extends along a respective one of the transverse edges of the given one of the expansive surfaces. Preferably, such diagonal, longitudinal, and transverse bands are applied so as to extend as noted.

2.4 Method for producing a nonwoven fabric with enhanced characteristics

Method For Producing A Nonwoven Fabric With Enhanced Characteristics Background of the Invention This invention relates to specific, improved spun-bonded nonwoven fabrics comprised of continuous multi-component longitudinally splittable fibers. The resulting nonwoven fabrics exhibit enhanced flexibility, drape, softness, thickness, moisture absorption capacity, moisture vapor transmission rate, and cleanliness in comparison with other nonwovens of the same fiber construction. These improved aesthetic and performance characteristics permit expansion of high-

strength nonwoven fabric materials into other markets and industries currently dominated by woven and knit fabrics that exhibit such properties themselves, but at high cost and requiring greater manufacturing complexity.

Such enhanced fabrics are subjected to certain air impingement procedures, for instance through directing low-pressure gaseous fluids at high velocity to the surface of the targeted nonwoven fabric. Also encompassed within this invention is the method of treating such a specific nonwoven fabric with this air impingement procedure.

Nonwoven textile articles have historically possessed many desirable attributes that led to their use for many items of commerce, such as within air filters, furniture linings, and automotive parts, such as vehicle floorcoverings, side panels, and molded trunk linings.

Such nonwovens have proven to be lightweight, inexpensive, and uncomplicated to manufacture, among various other advantages.

Recently, technological advances in the field of nonwovens, such as improved abrasion resistance and wash durability, have expanded the markets for such materials. For example, U. S. Patent Nos. 5,899, 785 and 5,970, 583, both assigned to Firma Carl Freudenberg, describe a nonwoven lap of very fine continuous filament and the process for making such nonwoven lap using traditional nonwoven manufacturing techniques. Such references disclose, as important raw materials, spun-bonded composite, or multi- component, fibers that are longitudinally splittable by mechanical or chemical action.

Furthermore, patentees indicate the ability to subject a nonwoven lap, or fabric, formed from such materials to high-pressure water jets (i. e., hydroentanglement). This further treatment causes the composite fibers (which are typically microdenier in size) to partially separate along their lengths and become entangled with one another, thereby imparting strength to the final product. As an example, Freudenberg currently commercializes at least one product, Evolon0, made by this process, and it is available in standard or point-bonded variations. (The standard variation has not been subjected to further bonding processes, such as point bonding. Point-bonding is

the process of binding thermoplastic fibers into a nonwoven fabric by applying heat and pressure so that a discrete pattern of fiber bonds is formed.) Additionally, U. S. Patent No. 6,200, 669, assigned to Kimberly-Clark Worldwide, Inc., describes yet another process for fabricating spun-bonded nonwoven webs from continuous multi-component fibers that are longitudinally splittable by the process of hydroentanglement.

These manufacturing techniques permit efficient and inexpensive production of nonwoven fabrics having characteristics and properties, such as, for example, mechanical resistance, equal to those of woven or knitted fabrics. As a result, such nonwovens have penetrated markets, such as apparel, cleaning cloths, and artificial leather, which historically have been dominated by woven and knit products.

2.5 Nonwoven fabric having three-dimensional printed surface and method for producing the same

The present invention relates to a nonwoven fabric having a three-dimensional printed surface which is achieved by screen printing the fabric with a puff pigment to create an inexpensive, textured fabric. The fabric is preferably printed with a puff pigment of constrasting color, when compared with the color of the base fabric, so that an aesthetically pleasing two-tone fabric is produced. The fabric is primarily composed of continuous multi-component fibers that are at least partially split along their length. The fabric may be manufactured into such end-use products as automotive interior fabric, apparel, drapery, cleaning cloths, upholstery, and office panels. Also encompassed within this invention is a method for producing a nonwoven fabric having a three-dimensional printed surface.

A method for providing a spun-bonded nonwoven fabric comprised of continuous multi-component fibers that are at least partially split along their length into individual filament fibers by mechanical or chemical action, wherein the spun-bonded nonwoven fabric has a three-dimensional printed surface, the method comprising the sequential steps of: (a) providing a spun-bonded nonwoven fabric comprised of continuous multi-component fibers which have been at least partially split along their length; (b) screen printing the spun-bonded nonwoven fabric with pigment containing a puffing agent to provide a printed spun-bonded nonwoven

fabric; (c) drying the printed spun-bonded nonwoven fabric; (d) curing the printed spun-bonded nonwoven fabric; and (e) optionally, subjecting the printed spun-bonded nonwoven fabric to further chemical or mechanical finishing processes.

Claims:

- The method of claim 1, wherein the spun-bonded nonwoven fabric is dyed.
- The method of claim 1, wherein the spun-bonded nonwoven fabric is undyed.
- The method of claim 1, wherein the spun-bonded nonwoven fabric is comprised of multi-component fibers, end wherein the multi-component fibers are characterized by having a fiber size of less than 5 denier.
- The method of claim 1, wherein the multi-component fibers are at least partially split along their length into individual filament fibers by mechanical or chemical action, and wherein the individual filament fibers are characterized by having a fiber size of less than 1 denier.
- The method of claim 1, wherein the spun-bonded nonwoven fabric is comprised of fibers selected from the group consisting of polyester, polyamide, polyolefin, polyaramide, polyurethane, polylactic acid, and combinations thereof.
- The method of claim 6, wherein the fiber is polyester, and wherein the polyester is selected from the group consisting of polyethylene terephthalate, polytriphenylene terephthalate, polybutylene terephthalate, and combinations thereof.
- The method of claim 6, wherein the fiber is polyolefin, and wherein the polyolefin is selected from the group consisting of polypropylene, polyethylene, and combinations thereof.
- The method of claim 6, wherein the fiber is polyamide, and wherein the polyamide is selected from the group consisting of nylon 6, nylon 6,6, and combinations thereof.

- The method of claim 9, wherein the spun-bonded nonwoven fabric is comprised of polyester and nylon 6,6.

- The method of claim 10, wherein the spun-bonded nonwoven fabric is comprised of polyester and nylon 6,6, wherein the polyester comprises approximately 65% by weight of the spun-bonded nonwoven fabric, and wherein the nylon 6,6 comprises approximately 35% by weight of the spun-bonded nonwoven fabric.

- The method of claim 1, wherein the puffing agent produces a gas during the drying step which raises the pigment containing a puffing agent and creates a three-dimensional printed surface on the spun-bonded nonwoven fabric.

- The method of claim 1, wherein the pigment containing a puffing agent also includes a binding agent.

- The method of claim 13, wherein the binding agent is activated during the curing step which enhances the adhesion between the pigment containing a puffing agent and the spun-bonded nonwoven fabric.

- The method of claim 1, wherein the three-dimensional printed surface imparts between about 2 and about 60 percent print coverage on the surface of the printed spun-bonded nonwoven fabric.

- The method of claim 1, wherein the three-dimensional printed surface imparts between about 5 and about 30 percent print coverage on the surface of the printed spun-bonded nonwoven fabric.

- The method of claim 1, wherein the three-dimensional printed surface imparts less than about 2 percent print coverage on the surface of the printed spun-bonded nonwoven fabric.

- The method or claim 1, wherein the three-dimensional printed surface imparts more than 60 percent print coverage on the surface of the printed spun-bonded nonwoven fabric.

Summary of the invention

In light of the foregoing discussion, it is one object of the current invention to achieve a nonwoven fabric having a three-dimensional printed surface. The three-dimensional printed surface is most preferably achieved by screen printing the fabric with a puff pigment, wherein the puff pigment most preferably includes a puffing agent and a binding agent. The nonwoven fabric may be printed with various patterns, which are selected to preferably optimize the aesthetic appearance of the fabric and/or to optimize the performance characteristics of the printed fabric. The resulting textured fabric may perform well in end-use applications such as cleaning cloths wherein the textured surface may assist in the removal of dirt from soiled surfaces; alternatively, the fabric may be well suited for use as automotive interior fabric such as, for example, headliner fabric.

A second object of the current invention is to achieve a nonwoven fabric having a three-dimensional printed surface, wherein the printed surface comprises colored pigment that is decorative and aesthetically pleasing. The combination of texture, depth, and color enhances the appearance and feel of the fabric such that it may be ideal for use in products such as, for example, automotive interior fabric, apparel, drapery, cleaning cloths, upholstery, and office panels.

A further object of the current invention is to achieve a composite material, wherein the composite material is comprised of at least one layer of nonwoven fabric having a three-dimensional printed surface. Other layers in the composite material may be comprised of additional nonwoven fabrics, woven or knitted fabrics, various types of foam materials such as polyurethane, polystyrene, polyether, and polyester foams, films, adhesives, and combinations thereof. The composite material may be used, for example, in automobile interiors, for items such as door panels, arm rests, and headliners, as well as in various other applications.

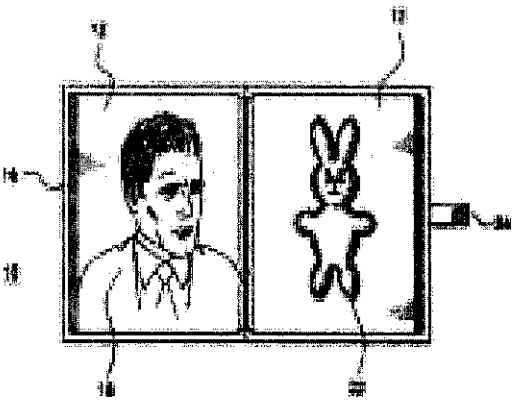
It is also an object of the current invention to achieve a method for producing a nonwoven fabric having a three-dimensional printed surface. The method generally comprises the steps of providing a nonwoven textile fabric, screen printing the fabric with a puff pigment, and drying and curing the fabric. The fabric may then be

manufactured into its final product for consumer use without having to sew or further finish its cut edges, thereby saving time and expense.

Other objects, advantages, and features of the current invention will occur to those skilled in the art. Thus, while the invention will be described and disclosed in connection with certain preferred embodiments and procedures, such embodiments and procedures are not intended to limit the scope of the current invention. Rather, it is intended that all such alternative embodiments, procedures, and modifications are included within the scope and spirit of the disclosed invention and limited only by the appended claims and their equivalents.

2.6 Soft fabric book with high-resolution image and method of making same

The invention encompasses a fabric book with high resolution sublimation printed images and a method of making such a fabric book. The fabric book of the invention has a plurality of fabric pages. The fabric pages are made of a synthetic material with an original softness corresponding to the synthetic material. At least one fabric page has a high resolution sublimation printed image imprinted using the method of the invention. The fabric page with the high resolution image substantially retains the original softness, even after printing. The preferred method of creating the high resolution images in the fabric books begins with selecting an appropriate original object. A digital rendition of the original object is created. The digital rendition is edited to create an edited image with optimum print resolution. A color separation is performed on the edited image to create a color separated image. Optimal sublimation inks are prepared and suitable sublimation paper is selected. Using the optimal sublimation inks, the color separated image is printed onto film or directly onto a plate. The image is then offset printed onto the suitable sublimation paper. The image is sublimated from the sublimation paper to a fabric sheet creating a fabric sheet with a high resolution image. To create the high resolution on the fabric sheet, the imprinted portion of the fabric sheet may be polyester, nylon, and polyester/cotton blend fabrics (no more than 5 % cotton), and the like, but not cotton or other naturally occurring fabrics. The fabric sheet with the high resolution image may then be combined with other fabric sheets (with or without high resolution images) to form a fabric book.



2.7 Soft tactile coating for multi-filament woven fabric

A polyolefin woven fabric extrusion coating with superior soft tactile characteristic is disclosed comprising ethylenic elastomer and thermoplastic vulcanizate. The combination performs in a synergistic fashion to obtain more pleasing soft tactile characteristic than is available with either elastomer or thermoplastic vulcanizate alone. The inclusion of additives may enhance properties and include plastomer, UV stabilizers, flame retardant, antiblock, colorant, printable additives and polar additives.

Claims

- The method of forming a coated polyolefin fabric comprising: weaving a polyolefin fabric of multi-filament polyolefin yarn; extrusion coating the lower surface of the polyolefin fabric with a polyolefin woven fabric extrusion coating; extrusion coating the upper surface of the polyolefin fabric with a polyolefin woven fabric extrusion coating; and cooling the coated polyolefin fabric; wherein the polyolefin woven fabric extrusion coatings comprise from 30 to 50% by weight thermoplastic vulcanizate wherein the thermoplastic vulcanizate has a Shore A hardness grade of 30 to 80; from 30 to 50% by weight of polyolefin elastomer wherein the polyolefin elastomer has a melt index of less than or equal 5.0; and from 5 to 15% by weight of plastomer.

- The method of claim 1 wherein the thermoplastic vulcanizate has a Shore A hardness grade of 54 to 80.

- A coated polyolefin fabric comprising: an inner polyolefin woven fabric of multi-filament polyolefin yam; one or more lower coating layers of polyolefin woven fabric extrusion coating; one or more upper coating layers of polyolefin woven fabric extrusion coating; wherein the polyolefin woven fabric extrusion coatings comprise from 30 to 50% by weight thermoplastic vulcanizate wherein the thermoplastic vulcanizate has a Shore A hardness grade of 30 to 80; from 30 to 50% by weight of polyolefin elastomer wherein the polyolefin elastomer has a melt index of less than or equal 5.0; and from 5 to 15% by weight of plastomer.

- The coated polyolefin fabric of claim 3 wherein the thermoplastic vulcanizate has a Shore A hardness grade of 54 to 80.

- The coated polyolefin fabric of claim 3 wherein the inner polyolefin woven fabric further comprises polypropylene multi-filament yarn.

- The coated polyolefin fabric of claim 5 wherein the thermoplastic vulcanizate has a Shore A hardness grade of 54 to 80.

- The coated polyolefin fabric of claim 5 wherein the inner polyolefin woven fabric comprises 1000 denier polypropylene yarn on a nominal 16×16 ppi weave.

- The coated polyolefin fabric of claim 7 wherein the thermoplastic vulcanizate has a Shore A hardness grade of 54 to 80.

- The coated polyolefin fabric of claim 3 wherein the lower coating layers comprise a total coating thickness of from 1 to 10.0 mil.

- The coated polyolefin fabric of claim 9 wherein the thermoplastic vulcanizate has a Shore A hardness grade of 54 to 80.

- The coated polyolefin fabric of claim 3 wherein the upper coating layers comprise a total coating thickness of from 1 to 10.0 mil.
- The coated polyolefin fabric of claim 11 wherein the thermoplastic vulcanizate has a Shore A hardness grade of 54 to 80.

Summary of the invention

It is the object of this invention to provide superior soft tactile characteristics in coatings for polyolefin woven fabrics of multi-filament yarns.

Coatings of the present invention comprise from 30 to 50% by weight thermoplastic vulcanizate wherein the thermoplastic vulcanizate has a Shore A hardness grade of 55 to 80 and from 30 to 50% by weight of polyolefin elastomer wherein the polyolefin elastomer has a melt index of less than or equal 5.0. These coatings may also include amounts of plastomer, UV stabilizers, flame retardant, antiblock, colorant, printable additives and polar additives.

Coated fabrics of the present invention have an inner polyolefin woven fabric coated top and bottom with superior soft tactile characteristic coatings. Polypropylene woven fabric is preferred for the inner woven fabric.

2.8 Furniture and fabric facts

2.8.1 Glossary of Fabric Terms

- **Backing:** A coating that is applied/sprayed onto the back of fabric to prevent seam slippage and excess wear.v
- **Brocade:** Rich jacquard-woven fabric with all-over interwoven design of raised figures or flowers.
- **Chambray:** Popular variety of cotton fabric that combines colored warp and white filling yarns in plain weave.
- **Chenille:** A fuzzy yarn whose pile resembles a caterpillar.

- **Cotton:** A soft vegetable fiber obtained from the seedpod of the cotton plant.
- **Damask:** Firm, glossy jacquard-patterned fabric. Similar to brocade but flatter and reversible.
- **Denim:** Basic cotton cloth that is rugged, tough and serviceable. It is easily recognized by its traditional indigo blue color warp and gray or mottled white filling with a left hand twill on the face. Denim today comes in all the colors of the rainbow.
  Dry Cleanable: Materials that can be cleaned only through a cleansing process that applies organic solvents to remove dirt, soil, spots and stains. This means fabrics have to go to the dry cleaner.
- **Duck:** A closely woven heavy durable material.
- **Dye Lot:** Because fabrics are dyed in varying quantities of yardage, consistency of color will vary. Therefore there will be differences in color from bolt to bolt.
- **Grade:** The evaluation of fabrics by price. This evaluation involves labor, supply of goods and demand. A higher grade does not necessarily mean a higher quality.
- **Jacquard:** Intricate method of weaving in which a head-motion at the top of the loom holds and operates a set of punched cards according to a motif desired. Jacquard fabrics include brocades, damask, and brocatelle.
- **Linen:** Fabric woven from the natural fine fiber derived from the flax plant. Some properties of linen are rapid moisture absorption, no fuzziness, does not soil easily, a natural luster and stiffness.
- **Matelasse:** A soft double cloth or compound fabric that has a quilted surface effect. It gives effects such as blistered, puckered, quilted or wadded.
- **Mohair:** The long, lustrous and strong hair of the Angora goat, which is spun into yarns for knitting and fabrics.

- **Muslin:** A firmly woven cotton fabric that has been given a pure starched or backfilled finish to provide a dull "clothy" effect.

- **Railroaded:** Maximum yield of pattern per width. **Toile:** A fabric with scenic designs printed in one color or woven into the fabric.

- **Up the Bolt:** Maximum yield of pattern per length. This fabric is subject to seaming and piecing.

- **Velvet:** A cloth in which a succession of rows of short cut pile stand so close together as to give an even uniform surface.

- **Washable:** Materials that have been prewashed and preshrunk to insure that machine washing will not unreasonably fade or shrink during cold water washing or dry cleaning

2.8.2 Glossary of Furniture Terms

- **1.8 High Density:** The weight of on a cubic foot of foam is its density. The higher the density the better surface softness and deep down support the foam will have. Do not be fooled by some high-density foams, they may be weighed with sand and are not quality foam cores. Mitchell Gold + Bob Williams foam is pure and not sand weighted.

- **Corner Bracing:** A wooden brace that is screwed into a frame where right angles occur. This bracing adds to the strength of the frame.

- **High Resiliency Foam:** A pure foam with a cell structure different from conventional foam, which results in more durable and more supportive material. This foam will retain its shape longer.

- **Kiln Drying:** This process removes moisture from the wood. It ensures that the frames will not wrap, split, crack or mildew.

- **Polyester Batting:** A synthetic fiber wadded into rolls or sheets used for stuffing furniture and mattresses.

- **Sinuous Spring:** An "S" curved piece of metal wire that is secured to the front and back rails of chairs and sofas for support.
- **Slipcovered Upholstery:** Fabric that is sewn as a removable cover to place over a muslin covered furniture base.
- **Tailored Upholstery:** A furniture frame that has fabric fitted and permanently attached.

2.8.3 Choosing a Fabric

Suede - Our suede products are faux suede made from easy care polyester fabric, they are rated for domestic usage, soft to the touch with a stain and water repellant finish. The fabric which is fire retardant and is machine washable.

Rio- an easy care woven polyester chenille (cotton and polyester mix) which is soft to the touch, Rio is a hard wearing fabric that is rated for domestic usage . The fabric is fire retardant and is machine washable.

Dundee - a woven polyester fabric which is soft to the touch and has a grain, the fabric is hard wearing and rated for domestic usage. The fabric is machine washable at 40C using washing powders that do not contain brightening agents, after washing the fabric should be dried naturally without tumble drying.

Canberra - a hard wearing polyester fabric with a linen like appearance and feel. This fabric will be attractive to customers looking for a natural linen look.

Faux Leather - This fabric can be wiped clean using a damp cloth, do not soak the fabric. The fabric should be protected from direct sunlight, excessive heat and sharp objects.

Chenille Selection - A selection of polyester cotton mix chenille fabrics. These fabrics have a variety of different textures, grain and colours and their are colours and textures to suit most peoples tastes.

Studio - an easy care woven polyester (cotton and polyester mix) fabric which is soft to the touch with a feel similar to cotton, Studio is hard wearing and is covered with a stain repellant finish. Studio is machine washable at 40C using washing powders that do not contain brightening agents, after washing the fabric should be dried naturally without tumble drying.

Max - a polyester fabric with a unique and pleasing texture that is soft to the touch. Max has a severe domestic usage rating is fire retardant and is machine washable.

Viscosity - a polyester viscose mix fabric with a soft luxuriant texture and an appearance that is similar to velvet. This fabric is dry clean only and suitable for domestic use. The viscosity range of fabrics are certainly very striking and whilst they work really well in their own right they are also great as accents for two tone fabric combinations and as scatter cushions to complement our other products.

2.9 Sensing the fabric

This part describes initial investigation of ideas for developing and refining current haptic parameters and interfaces for use in the textiles and related industries. A simple force-feedback mouse has been programmed to represent some of the more obvious tactile issues in fabrics. An evaluation study has been made of five different fabrics, and numerical values have been assessed for tactile parameters according to a new set of semi-quantitative descriptors. The results are discussed, and are displayed as a demonstration.

Introduction

The Textiles, Fashion and Interior industries have become increasingly aware of the need to enhance the sensory experience for the potential customer when observing highly tactile images, using the Internet or other technological means. In order to engage this creative sector in fully utilising such technologies as a tool for viewing and marketing of textiles, and for general communication within the industry of textile trends, fabrics, and related imagery, both for clothing and for interiors, we

need to introduce other senses, notably the sense of touch, to the overall experience.1, 2

This will also help to reduce visual overload in a highly visual and tactile industry! 3, 4

The aim of this project is to develop an intuitive visual and haptic communication system using the standards and expectations of the textile and related industries with particular regard to professional aesthetic, and psychological perspectives, and the working methods of the industry.

The creative, unpredictable and seductive working methods and minds of textile professionals offer a challenge to engineering and programming expertise. In particular, it is necessary to put quantitative evaluations on various parameters which are widely understood in the textile industries, but which are at present mainly qualitative. The development of a textiles industry focussed virtual multi-modal system is thus a stimulating problem. It also invites refinement of texture simulations, which at present are often too crude to be convincing.

Method

One of a fashion designer's most important skills is to understand the relationship between garment cut and fabric behavior and performance, as well as making correct commercial choices, responding to current trends in shape and fabric types, all determined by market level. There are five integral factors that are essential in fabric selection process, they are weight, thickness, shearness, drape and stretch. A fabric's aesthetic quality is also obviously as important.

These integral factors will all need to be considered in developing a supporting multi-modal system.

The first phase of the work has concentrated on setting up representations of simple mechanical variables using existing hardware and established software tools7. Logitech's Wingman mouse has been chosen as a low-cost haptic interface device. It can be programmed to simulate the surface properties of highly directional fabrics such as corduroy and velvet, which have relatively large-scale texture.

Sensory evaluation studies of products are often used in the industry to gain an understanding of consumer products and find ways to improve or market them. In the present work a small-scale Touch Evaluation Study of five different fabrics has been

developed for the Wingman Mouse. Measurements were primarily based on how the mouse is used for touching, i.e. touchstroke. 5, 6, 7

Touch evaluation

A procedure was developed to allow a restricted form of tactile evaluation which would simulate as closely as possible the conditions under which the Wingman mouse would be used. This procedure is summarized below. It is important to note that the evaluator has previous experience with fabrics, and also that she is female, as both of these issues may affect the tactile perception:

- Swatch samples laid out flat on a table and taped down.
- Evaluated using clean washed hands.
- Evaluation consisted of visual and touch, blindfolded and visual evaluations.
- Contact with fabric: up, down, left and right directions, except for some stretch evaluation.
- Contact was made using all five fingers of right hand, primarily the three middle fingers due to their longer length, and therefore longer contact time with the fabric, contact being made primarily at the distal to the finger tip region of the fingers.

Parameters to be addressed are summarized in Figure1. It should be noted that the numerical value, though
intended to be systematic and quantitative, is on an arbitrary scale of value from 1 to 15. Results are shown in Figure's 2, 3, 4, 5, and 6.

FIGURE 1: Touch Evaluation Study for Wingman Mouse

Definitions and Scales for Handfeel Properties					
Property	Key		Reference		Physical Parameters
Stiffness *3	S	Pliable	← →	stiff	Shear Modulus
Depression Depth	DD	high	← →	low	Bulk Modulus
Depression Resilience/Springiness	R	slow	← →	fast/springy	Young's Modulus, Damping
Tensile Stretch *1*3	TS	no stretch	← →	high stretch	Shear Modulus
Tensile Extension speed recovery *1*3	TES	slow	← →	quick	Damping
Hand Friction/Slipperiness	HF	slip/no drag	← →	drag/slippy	Coefficient of Friction
Roughness (overall surface)	R	smooth	← →	rough	Small-scale Surface Texture
Gritty	G	smooth	← →	gritty	Medium-scale Surface Texture
Lumpy [, i.e. Overall: bumpy, embossed, fiber bundles]	L	smooth/not lumpy	← →	lumpy	Large-scale Surface Texture
Grainy	G	smooth	← →	fuzzy/nappy	Medium-scale Surface Texture
Softness of surface	S	soft	← →	hard	Reciprocal of Modulus
Ribbed/Ridges (length	R	small	← →	large	Dimensions
Fuzziness	FZ	bald	← →	fuzzy/nappy	Force Displacement Graph
Furriness	FR	light	← →	heavy	Force Displacement Graph
Temperature *3	T	cold	← →	warm	Thermal Diffusivity
Thickness *3	TH	thin	← →	thick	Dimension
Moistness *3	M	dry	← →	wet	Water Absorption, Thermal Diffusivity
Weight *3	W	light	← →	heavy	Mass Per Unit Area
Noise Intensity *3	NI	soft	← →	loud	Sound Frequency/Intensity when Touched
Noise Pitch *3	NP	low/bass	← →	high/sharp	Sound Frequency/Intensity when Touched
Shearness *3	S	transparent	← →	non-transparent	Optical Properties
Drape *2*3	D	high	← →	low	Modulus

*1 Measurements based on two-handed evaluation ; *2 Measurements based on two-handed evaluation of holding fabric up to a light source where considerations for use would then be made, whether it is a fashion or interior fabric; *3 Properties which will require visual/other support to any Wingman.

FIGURE 2: Corduroy -Small Barrel (100% cotton), Colour: Brown
End use: Clothing, Furniture Covering

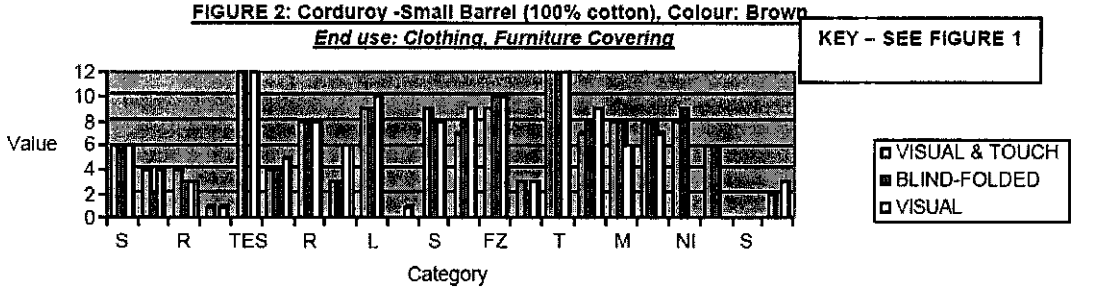


FIGURE 3: Corduroy -Large Barrel (100% Cotton), Colour: Silver grey and cream
End use: Furniture covering, Clothing

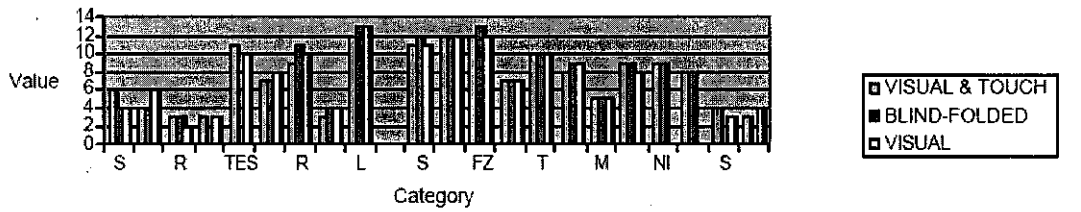


FIGURE 3: Corduroy -Large Barrel (100% Cotton), Colour: Silver grey and cream
End use: Furniture covering, Clothing

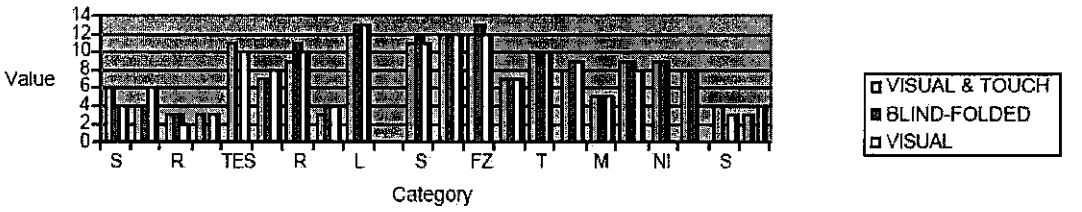
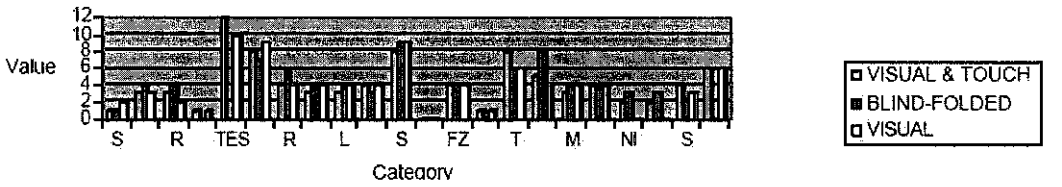


FIGURE 4: Velvet (100% Viscose), Colour: Bottle Green
End use: Clothing, Interiors



Category

FIGURE 5: Random Patterned Velvet (37% Viscose, 63% Acetate), Colour: Silver grey and golden brown
End use: Interior, Furniture covering

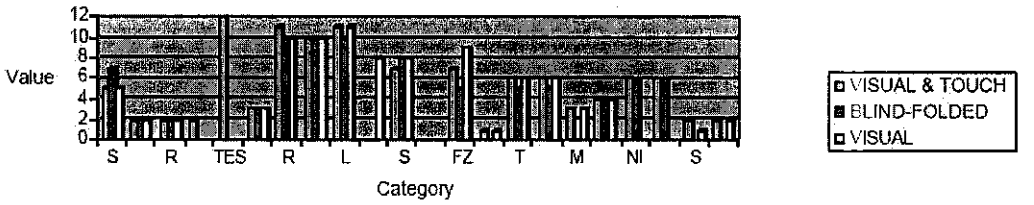
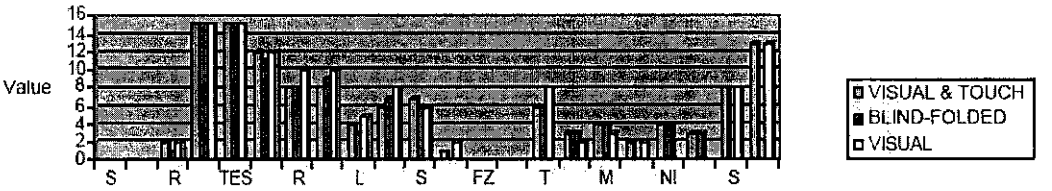


FIGURE 6: Stretch Fabric (57% Tactel, 31% Polyester, 12% Lycra)
End use: Clothing



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CHAPTER 3
METHODOLOGY

3.1 Introduction

The system will be implementing several methodologies for system analysis, information gathering and data testing. All the predicted result will be show the design and the system architecture in data visualization techniques.

3.2 System Development Life Cycle (SDLC)

The development of this project is carried out according to several phases such as requirement analysis, design and implementation, testing (validation), integration and maintenance.

According to the phases, the developer is currently working on the requirement analysis which involve tremendous research though books, journals, web press, wikipedia and consultations. The developer is gathering information about virtual reality, virtual reality modeling language and its tools, X3D and anything related to the virtual walkthrough environment. The developer also needed to gather information such as the composition of rooms and the facilities provided and the lecturers' profile on the selected building which is to model for the project.

On the same time, the developer start to step on the design phase by drafting the scene graph for the project, a map and a sample design. Later in this stage, it would expected to have a fully design scene graph as an output which will guide through in development stage.

The developer will soon start off implementation when the design phase is finished. Afterwards the project will be continued with the consequent stages such as - the project will be tested to see how does it work in HTML, how does the VRML frame speed work out for user to interact through the system. Then based on testing, the

developer would see if there anything to integrate will be proceed in the integration stage. And last but not least, maintenance step will be taken to get the project working consistently and efficiently.

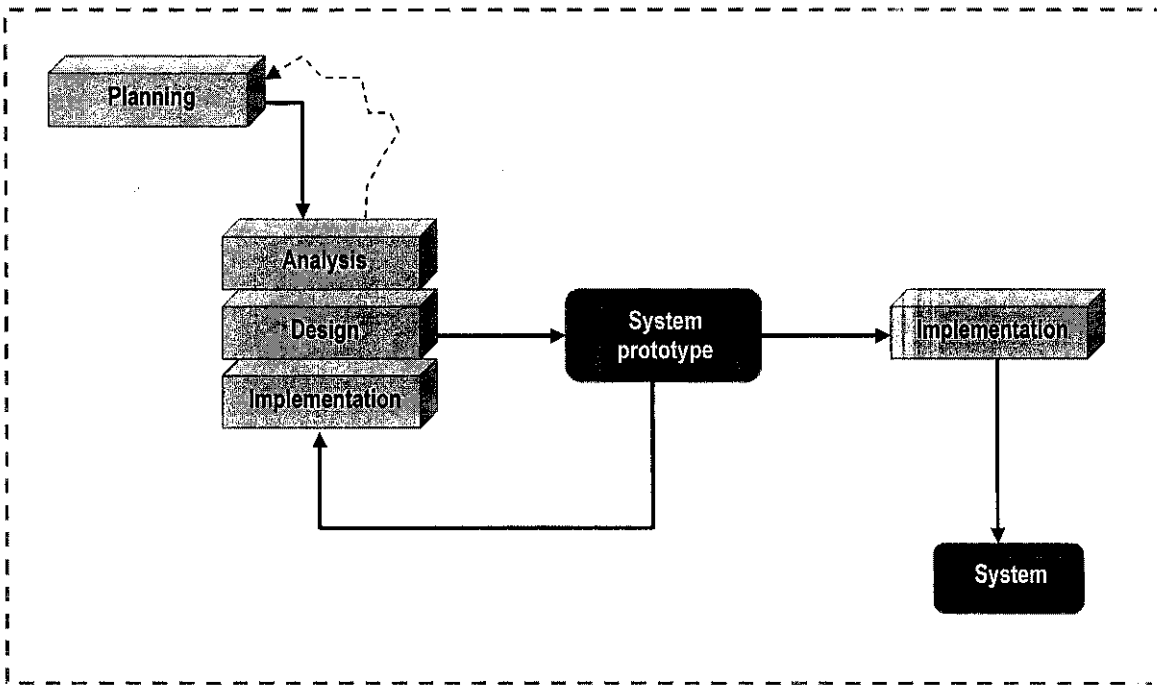

Figure 7: System Development Life Cycle (SDLC)

A prototyping-based methodology performs the analysis, design and implementation phases concurrently and all the 3 phases are performed repeatedly in a cycle until the system is completed. With these methodologies, the basics of analysis and design are performed and work immediately begins on a system prototype, a "quick-and-dirty" program that provides a minimal amount of features.

During planning phase for the project, the development began with information gathering and feedback from the users regarding current system and what they expected from to-be system. Based from the information gathered and observation of the current flow, the team led by project manager identified and came out with feasibility studies for project champion's review.

The programmers will complete the prototype during design phase before being tested by end user. All the feedback in improving the system from the end user will be recorded by system analyst for further justification. Based on the feedback, the full completed system will be build by the team before full testing and implementation at customer place. During installation, end users will try to run the system under project manager and system analyst inspection. The completed system will be run in users' environment as scheduled.

3.3 Tools Requirements

The tools that I am choosing for my project are *Flash CS3 Professional* and *XML*. Some reasons that I choose are:

XML

XML and relational databases are both *technologies* for structuring, cataloguing and processing data. If data has a regular and atomic structure, it is more appropriate and efficient to use a database than XML. In this case, why would you wish to go to the trouble of converting such data from a database into XML and vice versa? Reasons include:

- XML is easy to convert further into different formats as required: e.g HTML, PDF, and plain text. This gives a flexibility to web applications where data can be searched for and accessed from the database, and then formatted for output in different formats using e.g XSL.
- XML is already a standard for data interchange, so you may need to pass your data on to others as XML or take XML as input. There are advantages over competing technologies such as EDI. A feature of XML allows XML from different sources to be processed together to give a combined result.
- In Web applications, XML can theoretically be used to reduce *server* hits and load on the server for sorts etc, because some processing can be done by the client browser. However, in practice many browsers in use have no or limited XML capability.
- XML is a non-proprietary standard and is unlikely to become obsolete.

On the other hand text documents, which are usually irregularly structured, cannot be effectively stored in a relational database. In this case, you can only store them in the database as BLOBs, which cannot be searched or processed in the normal way. However, there are cases where this is still desirable: very large repositories of pre-existing XML/SGML documents. The database can be used for cataloguing and searching, and documents once extracted can be processed further using XSL/XSLT.

So there are two possibilities: perform backwards and forwards conversion of data between the database and XML, or store complete XML documents inside the database. Oracle terminology calls the former "generated XML", and the latter "authored XML".

And there are essentially two reasons for using XML and databases together: The first Oracle calls "content and *document management*" where the requirement is for data to be presented differently as required, the second "B2B messaging" where XML is used to communicate between different applications/sites/companies (cf EDI).

Flash CS3 Professional

Adobe Labs (previously *Macromedia Labs*), is a source for early looks at emerging products and technologies from Adobe-Macromedia, including downloads of the latest software and plugins. Flash 9, *Flex* 3, and ActionScript 3.0 are discussed on the labs.adobe.com website.

An important new development in Flash (as of 2007) is its increasing use in providing the presentation layer in handheld devices. Adobe is courting *cell phone* and *PDA* vendors, and partnering to deploy *Flash Lite* as the user interface.

As of November 2007 Adobe Labs is developing the *Adobe AIR Project* which is a cross-OS runtime that allows developers to reuse their existing web development skills (Flash, Flex, HTML, Ajax) to build and deploy desktop *Rich Internet Applications (RIAs).*

The next version of Flash will have two additional components designed for large scale implementation. Adobe is adding in the option to require an ad to be played in

full before the main video piece is played. This would be most useful for large scale video sites. Also, Adobe has announced plans to add *DRM* into the new version of Flash. This way Adobe can give companies the option to link an advertisement with content and make sure that both are played and that they not be changed.

3.4 Use Case Diagram

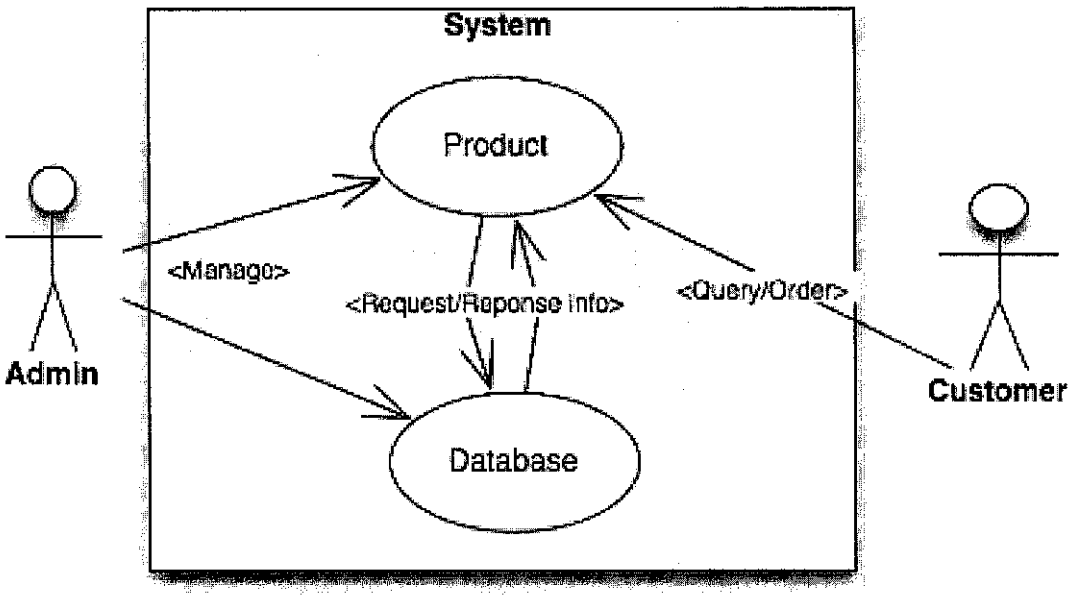

Figure 8: Use Case Diagram of Shopping Mall

In this Website, there are five (5) pages which are: Home, About Us, Collections, Services, and Contacts. Each page is linked to each other. Home page is the interface of the Website. In About Us, customers can find the "Company's profile" sub link, "How are your sofas made" sub link, "Ordering and delivery" sub link. In Services page, the "Online information" sub link is linked directly to Collections Page. The "Delivery and Order" sub link is linked directly to "Ordering and delivery" sub link of About Us page. The Contact has all the information for customers to contact.

The Collections page is the main page, the most important for this project. In this page, it has been described the details of sofa. Customers can find the softness

information by seeing the metric system that has been created for each particular part of sofa.

Each customer has each weight. So the subsidence of the sofa will be shown differently to each of them. In the subsidence board, there are five (5) lines that will be shown as the deepness of the sofa when customer sits at each particular part. Correlative with each line, I build the weight range of the customer. So there are five (5) weigh ranges as well. The purpose of the weight range is to help customers to key in their weight and then the system will show up exactly where the deepness of the sofa. The five weight ranges are below:

- 5 – 20 (kg)
- 21-35 (kg)
- 36-50 (kg)
- 51-65 (kg)
- 66-80 (kg)

In the same weight range, the deepness will be shown up equally, such as 5 – 20 (kg) weight range, the back deepness will be 2 (cm), and the bottom deepness will be 4 (cm). In the next weight range – the 21 – 35 (kg), the back deepness will plus one line and the bottom part deepness will plus one line as well. One line equals 2 (cm). So now in the 21-35 kg, the back deepness will be 2+2=4 (cm) and the bottom deepness will be 4+2=6(cm).

After seeing and considering the quality of the sofa, customers also can book their item that they want to buy. So they just click **Oder** button and choose quantity, then click **Buy Now** button to finish the transaction.

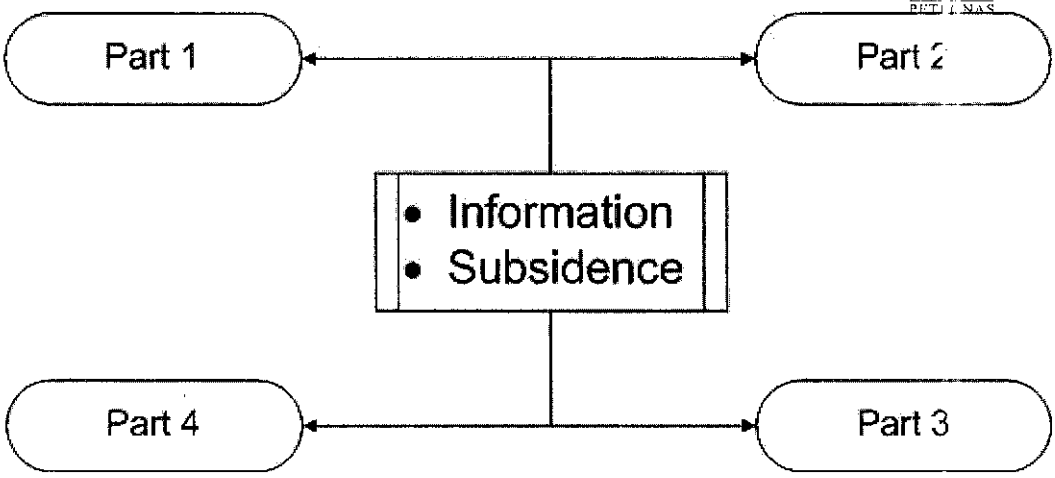

Figure 9: Use Case Diagram of Metric System

Thi use case diagram has displayed the aspect of each item (each sofa) in the website. One sofa has four parts to describe the softness, but most of them are symmetric. When the mouse touches each part, the database will show a description-board to describe the softness of each part. In the description-board, there are two (2) sub parts inside: information and the subsidence. The information part will provide the information of this particular part (material, comfort, etc...). In the subsidence part, it will provide to customers the subsidence of the sofa. The subsidence of each particular part will be measured by the metric system (cm). The metric system provides five (5) lines with two colors. The dark blue color symbolizes for the hardness while the white color symbolizes for the softness of the sofa.

The meaning of the Subsidence part is subsidence (the deepness) of the sofa when customers tough each par, so it will be deep and will be explained by metric system (centimeter)

3.5 Flow chart Diagram

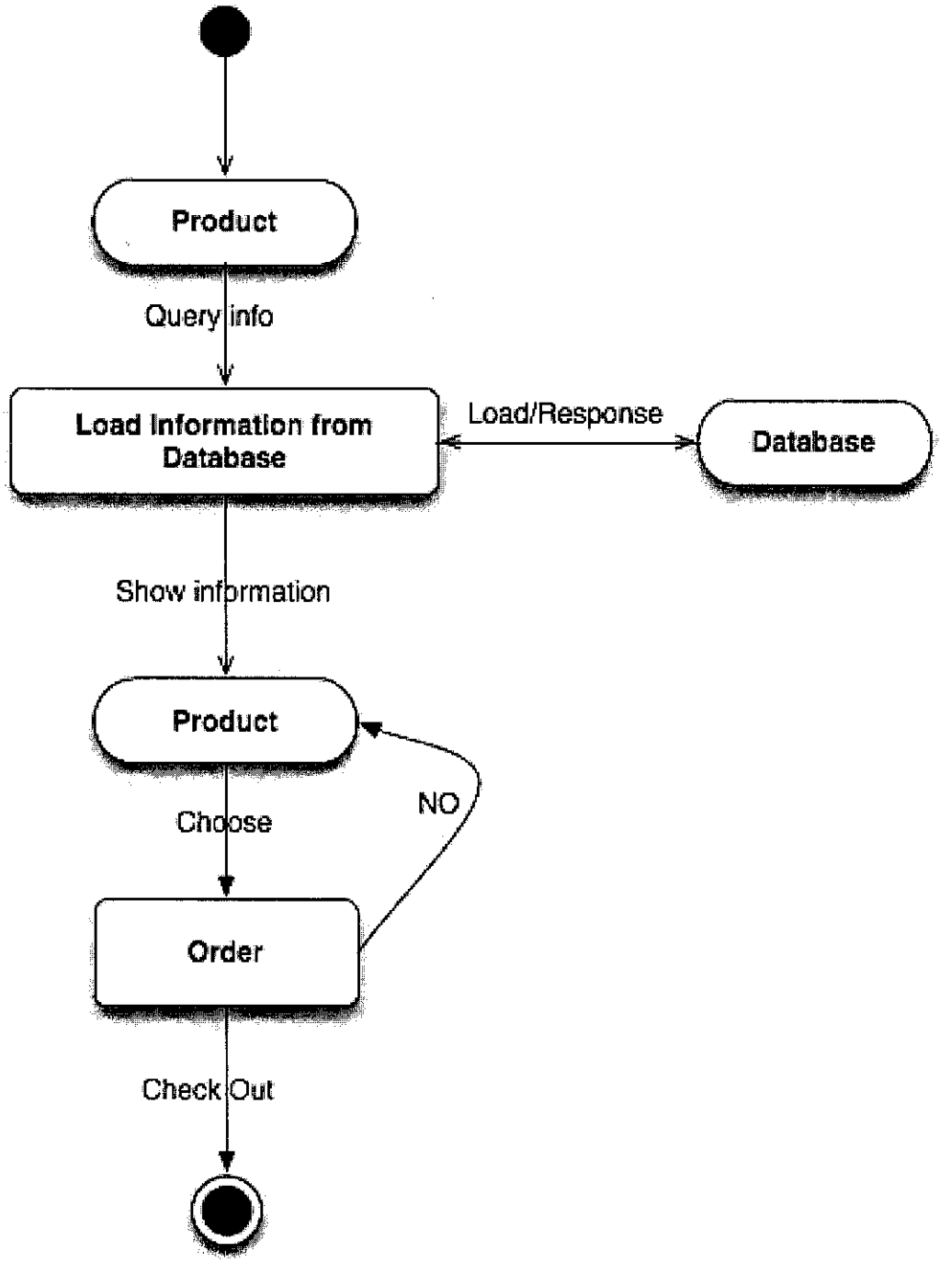

Figure 10: Flowchart diagram

This flow chart describes the flow of functions of this website. The information will be loaded from database. It will be stored in the XML file and will be displayed in the flash file.

3.6 Coding

Refer Appendix

CHAPTER 4
RESULTS AND DISCUSION

1. Preliminary Survey of Using Internet Prescription

After conducting the questionnaires as well as interviews Tun Hussein Onn Eyes Hospital in Kulur Lumpur, there are 38 physicians who received the questionnaire forms and only 30 of them who answer.

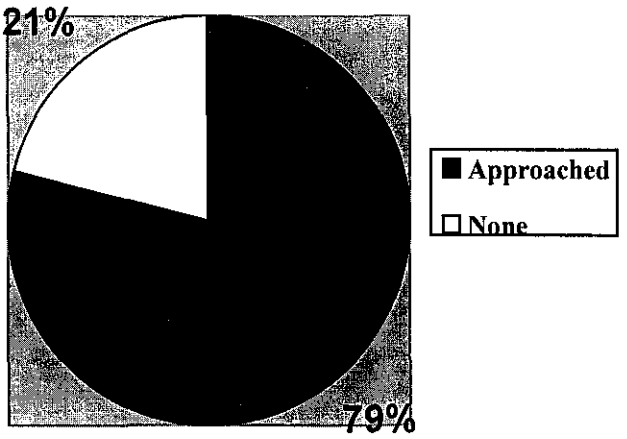

Figure 11 – The number of answers above the total interviewees approached

Based on the observation during interviews, not all interviewees are willing to use Internet (only 79%). They say that by using Internet for shopping, it is difficult to see the real items that they want to buy. More than that, they may be visited some unuseful websites that they do not want.

Therefore, interviews find some others source to get more information regarding knowledge and internet. Figure below shows that Internet is the most preferable source of information for doctors. According to the results from the survey, 15 interviewees prefer Internet most (50%). Besides, interviewees also come to their

colleagues to learn more information (26.67%). It is a good sense of sharing knowledge. They also prefer special books to get information (23.33%)

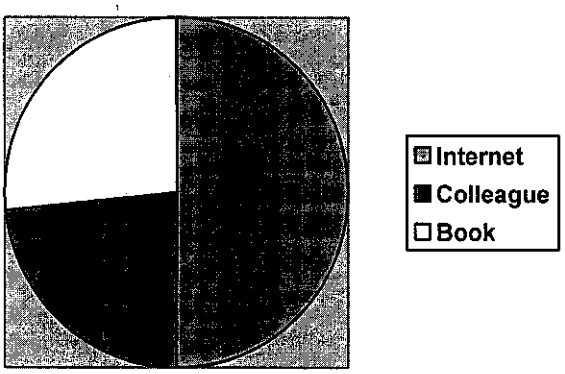

Figure 12 – Source of information that interviewees prefer to use

2. SWOT analysis

Strengths	***Weaknesses***
o Easy to understand and use o Not costly o The implementation time is not so long o Encourage the involvement of customers and readers professionals as well as patients.	o The effectiveness of the system depends on the users
Opportunities	***Threats***
o Other functions to be added: Community where members can join to share knowledge/experience with specific softness information.	o Security and Privacy: virus, hackers, information overload, transparency for confidential knowledge

CHAPTER 5
CONCLUSION AND RECOMONDATIONS

5.1 Conclusion

This project is met the objectives which I stated in the above session. This project is aimed to be beneficial for the future use of the online customers. For example, this project will satisfy viewers by providing as much information as viewers might need to know. On the other hand, it also hoped to meet my objectives which I would like to expose myself to the studies of flash environment and explore more on virtual modeling language.

The system is hoped to be benefited for online users when after all the objects are created. It will definitely give the visualization of material, design and the most important thing is provide with more information about the subsidence (cm). Moreover, this project will hope to persuade younger generation to get interested in Flash world and give courage to further step from the infancy stage.

5.2 Recommendation

This project is highly required the guidance and advices from respective supervisor together with the support from users in form of providing enough information and clear view of requirements. The next step of the project is to work on the information and knowledge obtained from the initial state.

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APPENDIX 1

Code XML (Database coding)

```
<?xml version="1.0" encoding="utf-8" ?>
<data>
<model modelname="Sofa number 1">
- <compInfo compname="Sofa1 Component1" subside="2">
- <![CDATA[
Material:<br>- Cotton<br>- Hard Cloth<br>- etc.<br><br>Bring comfort and style...<br>
 ]]>
 </compInfo>
- <compInfo compname="Sofa1 Component2" subside="4">
- <![CDATA[
Material:<br>- Cotton<br>- Soft Cloth<br>- etc.<br><br>Enjoy your life...
 ]]>
 </compInfo>
- <compInfo compname="Sofa1 Component3" subside="6">
- <![CDATA[
Material:<br>- Cotton<br>- Soft Cloth<br>- etc.<br><br>Stay at home with joy...
 ]]>
 </compInfo>
- <compInfo compname="Sofa1 Component3" subside="8">
- <![CDATA[
Material:<br>- Cotton<br>- Soft Cloth<br>- etc.<br><br>Time to take a good rest...
 ]]>
 </compInfo>
 </model>
<model modelname="Sofa number 2">
- <compInfo compname="Sofa2 Component1" subside="2">
- <![CDATA[
Material:<br>- Cotton<br>- Hard Cloth<br>- etc.<br><br>Gather round friends and chit
   chat...<br>
 ]]>
 </compInfo>
- <compInfo compname="Sofa2 Component2" subside="4">
- <![CDATA[
Material:<br>- Cotton<br>- Soft Cloth<br>- etc.<br><br>Best material and easy to wash
 ]]>
 </compInfo>
 </model>
<model modelname="Sofa number 3">
- <compInfo compname="Sofa3 Component1" subside="6">
- <![CDATA[
Material:<br>- Cotton<br>- Hard Cloth<br>- etc.<br><br>Relax your back, bring convenience to
   new level...<br>
```

]]>
</compInfo>
- <compInfo compname="**Sofa3 Component2**" subside="**8**">
- <![CDATA[
Material:
- Cotton
- Soft Cloth
- etc.
Enjoy your TV show...
]]>
</compInfo>
</model>
</data>

APPENDIX 2

Sofa_comp1

```
var metric:MovieClip = metricLine;
var importXML = new XML();
importXML.ignoreWhite = true;
importXML.load("details.xml");
importXML.onLoad = function(success)
{
    if (success)
    {
        infoText.html = true;
        var sofaData = importXML.firstChild.childNodes;
        var compData = sofaData[2].childNodes;
        var subsidence = compData[0].attributes.subside;
        infoText.htmlText = compData[0].firstChild.nodeValue;
        // Get weight from user
        var cusWeight:Number = 50;
        if(_root.weight != "" && _root.weight != undefined)
            cusWeight = Number(_root.weight);
        var numSub = calSubsideOnWeight(Number(subsidence),cusWeight );
        playSubside(String(numSub));
        metric.sub_text.text = String(numSub) + " cm";
```

```
        }
        else { trace("Error loading xml");}
}

function calSubsideOnWeight(subsidence:Number, weight:Number):Number
{
        var res:Number = 0;
        if(weight >= 5 && weight <= 20)
        {
                res = subsidence - 4;
        }
        else if (weight > 20 && weight <= 35)
        {
                res = subsidence - 2;
        }
        else if (weight > 35 && weight <= 50)
        {
                res = subsidence;
        }
        else if (weight > 50 && weight <= 65)
        {
                res = subsidence + 2;
        }
        else if (weight > 65 && weight <= 80)
```

```
        {
                res = subsidence + 4;
        }
        if(res < 0)
                res = 0;
        return res;
}

function playSubside(subside:String){
        switch(subside)
        {
                case "1":
                metric.gotoAndPlay(0);
                break;
                case "2":
                metric.gotoAndPlay(0);
                break;
                case "3":
                metric.gotoAndPlay(0);
                metric.gotoAndStop(11);
                break;
                case "4":
                metric.gotoAndPlay(0);
                metric.gotoAndPlay(11);
```

```
break;
case "5":
metric.gotoAndPlay(0);
metric.gotoAndPlay(11);
metric.gotoAndPlay(21);
break;
case "6":
metric.gotoAndPlay(0);
metric.gotoAndPlay(11);
metric.gotoAndPlay(21);
break;
case "7":
metric.gotoAndPlay(0);
metric.gotoAndPlay(11);
metric.gotoAndPlay(21);
metric.gotoAndPlay(31);
break;
case "8":
metric.gotoAndPlay(0);
metric.gotoAndPlay(11);
metric.gotoAndPlay(21);
metric.gotoAndPlay(31);
break;
case "9":
```

```
                metric.gotoAndPlay(0);
                metric.gotoAndPlay(11);
                metric.gotoAndPlay(21);
                metric.gotoAndPlay(31);
                metric.gotoAndPlay(41);
                break;
                case "10":
                metric.gotoAndPlay(0);
                metric.gotoAndPlay(11);
                metric.gotoAndPlay(21);
                metric.gotoAndPlay(31);
                metric.gotoAndPlay(41);
                break;
        }
}
stop();
```

Sofa_comp2

```
var metric:MovieClip = metricLine;
var importXML = new XML();
importXML.ignoreWhite = true;
importXML.load("details.xml");
importXML.onLoad = function(success)
{
```

```
        if (success)
        {
                infoText.html = true;
                var sofaData = importXML.firstChild.childNodes;
                var compData = sofaData[1].childNodes;
                var subsidence = compData[1].attributes.subside;
                infoText.htmlText = compData[1].firstChild.nodeValue;
                // Get weight from user
                var cusWeight:Number = 50;
                if(_root.weight != "" && _root.weight != undefined)
                        cusWeight = Number(_root.weight);
                var numSub = calSubsideOnWeight(Number(subsidence),cusWeight );
                playSubside(String(numSub));
                metric.sub_text.text = String(numSub) + " cm";
        }
        else { trace("Error loading xml");}
}

function calSubsideOnWeight(subsidence:Number, weight:Number):Number
{
        var res:Number = 0;
        if(weight >= 5 && weight <= 20)
        {
                res = subsidence - 4;
```

```
        }
        else if (weight > 20 && weight <= 35)
        {
                res = subsidence - 2;
        }
        else if (weight > 35 && weight <= 50)
        {
                res = subsidence;
        }
        else if (weight > 50 && weight <= 65)
        {
                res = subsidence + 2;
        }
        else if (weight > 65 && weight <= 80)
        {
                res = subsidence + 4;
        }
        if(res < 0)
                 res = 0;
        return res;
}

function playSubside(subside:String){
        switch(subside)
```

```
{
        case "1":
        metric.gotoAndPlay(0);
        break;
        case "2":
        metric.gotoAndPlay(0);
        break;
        case "3":
        metric.gotoAndPlay(0);
        metric.gotoAndStop(11);
        break;
        case "4":
        metric.gotoAndPlay(0);
        metric.gotoAndPlay(11);
        break;
        case "5":
        metric.gotoAndPlay(0);
        metric.gotoAndPlay(11);
        metric.gotoAndPlay(21);
        break;
        case "6":
        metric.gotoAndPlay(0);
        metric.gotoAndPlay(11);
        metric.gotoAndPlay(21);
```

```
break;
case "7":
metric.gotoAndPlay(0);
metric.gotoAndPlay(11);
metric.gotoAndPlay(21);
metric.gotoAndPlay(31);
break;
case "8":
metric.gotoAndPlay(0);
metric.gotoAndPlay(11);
metric.gotoAndPlay(21);
metric.gotoAndPlay(31);
break;
case "9":
metric.gotoAndPlay(0);
metric.gotoAndPlay(11);
metric.gotoAndPlay(21);
metric.gotoAndPlay(31);
metric.gotoAndPlay(41);
break;
case "10":
metric.gotoAndPlay(0);
metric.gotoAndPlay(11);
metric.gotoAndPlay(21);
```

```
                metric.gotoAndPlay(31);
                metric.gotoAndPlay(41);
                break;
        }
}
stop();
```