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D-base: interactive digital fashion catalogue

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Rochester Institute of Technology

A Thesis submitted to the Faculty of the
College of Imaging Arts and Sciences
in candidacy for the degree of
Master of Fine Arts

Thesis Title: D-base: Interactive Digital Fashion Catalogue

Submitted by: Mei-Ling Chen

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Abstract / Thesis Problem / Target Audience / Design Research / Design Considerations / Technical Issues / Conclusion / Bibliography

Abstract

<http://www.mei-ling.blastohosting.com/dbase.swf>

There is no doubt development of digital media has had a great impact on the way that people create and view art. Some of the most innovative advances in digital media and graphic design have been developed for advertising and sales through the Internet. The exponential growth in availability of broadband cable Internet access for private residences is providing an opportunity to attract consumers in new and engaging ways. This fact combined with a general perception of a scarcity of free time and a desire to purchase unique goods that may not be readily available in ones local area has made shopping online more popular than ever before. Many retailers have attempted to target this growing audience by providing online shopping features to consumers but most have failed to provide an engaging user-friendly online store.

I made an attempt to address what I see as a deficiency in interactivity and creativity in online fashion websites by developing a site that is uniquely navigated and fun to view. The motivation for developing an Interactive Digital Fashion Catalogue originates from my long-time passion for both fashion design and interior design. I used my computer graphic design skills as a “spring board” to allow me explore and develop my interests in these different fields of design. Pop-up books have always fascinated me and I sought to develop some of these complex geometrical art form attributes into my digital catalogue.

By employing current design software Digital Media Artists are able to create new and innovative ways for people to experience art. In developing my site I employed several programs, Adobe Flash CS3, Adobe Photoshop CS3, and Autodesk Maya 2008, were employed to achieve the desired results. The site was developed primarily with Adobe Flash and the 3D objects and animations were created with Autodesk Maya.

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Thesis Problem

The D-base: Interactive Digital Fashion Catalogue thesis project deals with the question of how a graphic designer can utilize digital media to develop a site that integrates pop-up art methods. I have always been fascinated duality of pop-up books; on the one hand they are technically complex to design while on the other hand they are easy to use and incredibly entertaining. I also wanted to explore examples of pop-up art styling that have already been developed for online advertising.

In considering how to best translate the essence of a tangible paper constructed pop-up book into a digital form I felt it was necessary to expose myself to a variety of pop-up books. These pop-up books were very revealing and educational, presenting numerous approaches in regards to content layout, physical construction, art design, and user interaction. Functionality and ease of use is always a main focus of design for me. I knew that I wanted my project site to be easy to interact with; I wanted users to get to the products and I wanted them to enjoy the act of navigating the site. I strove to create a project that was minimalist in site design layout and interior design, very basic but with a bit of a modernist flavor. In doing so I felt that there was a risk that the site might be boring to view and navigate. I chose to employ pop-up features to give users an interesting way to view and navigate the site. I felt that the best way to develop the 3D architecture for this project was using Autodesk Maya to create the digital paper forms that would makeup the basic pop-up structural design. I have found that digital pop-up features are sort of niche genre, while these attributes may have been seen in a few television ads or even a few websites, the pop-up art form has not been widely developed; nor has its spirit of fun and its mentally stimulating user interactivity reached its potential.

There were two major problems in the completion of my D-base thesis project. The first issue was familiarizing myself with pop-up art resources; both the general construction and interactivity.

The second challenge was using current technology to develop both the visual pop-up features as well as the engaging interaction components, which define pop-up styling.

Abstract / **Thesis Problem** / Target Audience / Design Research / Design Considerations / Technical Issues / Conclusion / Bibliography

Thesis Problem: Continued

My first task in this thesis project was finding a research topic and thesis question. Researching what was currently available in terms of pop-up book and pop-up related digital media became my second task. What websites have effectively integrated pop-up features? What do they do well? What are they lacking? I found that there really are not many digital representations of pop-up works online. I also noticed that those sites that are out there seem to focus on just the artistic representations of pop-up art styling rather than user interactivity. "The Eco Zoo" at <http://www.ecodazoo.com/> for example has a very creative and fun design. Pop-up visuals are present but user interaction within the 3D digital pop-up book is nonexistent. It became the goal of this thesis project to develop a website that integrated both pop-up art styling and pop-up interaction functions using Autodesk Maya and Adobe Flash.

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Target Audience

As a result of the subject matter and themes associated with the content of this site the target users of this Interactive Digital Fashion Catalogue are women aged 14-45. These users possess basic computer skills; they are familiar with surfing the Internet and navigating a variety of websites. The target audience's fast paced lifestyle has made them accustomed to having information and entertainment available at any time via various digital media devices.

Profile of a typical user:

Age Range: Roughly those aged 14-45

Economic Status: General

Education: Literate in English, basic Internet proficiency, interactivity and web navigation

Interest Hobbies: Fashion, art

Gender/Ethnicity: Primary females, any ethnicity

The main purpose of the website is to offer a new experience to online shoppers providing customers with an enjoyable and convenient experience. In order to grasp a better idea of what my target audience would want in such a website and how they would like to experience this content online I interviewed several individuals that met my target audience criteria and learned a little more about them. This information was valuable in that it gave me insight into the reasons why users choose to experience online digital content and what they value in those experiences.

Target Audience: Continued

Fang-Ju Lin	Eunie, Hung
1.) Interior Designer	1.) Events Planner
2.) Likes to shop online	2.) Likes to shop online
3.) Mostly indoor activities	3.) Mostly outdoor activities
4.) Enjoys reading magazines	4.) Hanging out with friends
5.) Unisex clothing	5.) Girly clothing
6.) Classical	6.) High fashion

Fang-Ju Lin: She is an interior designer; she likes to read magazines on her spare time. She does not like to go out often, if she does go out, she spends most of her time in malls to avoid hot weather and get some leisurely exercise. She likes to shop for unisex classic clothing due to her profession. She does not want to think about website navigation she just wants it to “flow naturally.”

Eunie Hung: She is an event planner for a mass media Inc, she likes to hang out with friends but also likes to shop after work by herself. She enjoys shopping in the mall but also enjoys shopping online to compare variety of styles and best pricing. She dresses in high fashion clothing, wearing mainly mini-skirts and dresses. She uses virtual shopping and modeling magazine websites to help her narrow her “hunt” for clothing thus maximizing her time in regards to her real life shopping experiences.

Technical note:

The audience will need to have a computer with broadband internet access and the latest version of Flash in order to properly view and interact with the website. Designed content is accessible through various internet browsers such as Safari, Internet Explorer, and Firefox; a plug-in link is provided for users to download the necessary Flash application viewer via the Adobe website at no cost.

Design Research

My project's design was inspired greatly by my shopping experiences in Taiwan, Japan and France. I was also influenced by various published paper pop-up books and several digital media works that have integrated pop-up design features. The project title, D-base, was inspired from the French word "*debase*" meaning basic. More than anything I think the spirit of this project is tied most closely to my belief that form and function should guide a graphic designers inspiration, leading to design that is at its core interesting, fun and imaginative but most importantly user-centric. I find it so fantastic that pop-up books take something so ordinary as flat paper and through an artist's creative passion a works is developed that induces curiosity, brings wonder and in the best examples fosters user interaction.

I felt that I needed to develop an understanding of how pop-up books are physically designed and crafted. Luckily I found a very helpful book by David Carter and James Diaz titled The Elements of Pop-Up A Pop-Up Book for Aspiring Paper Engineers that provided me with a clear understanding of the different varieties of pop-up elements and their construction. This was an important step for me in this thesis development as I wanted the pop-up actions within my project to be true to form and function rather generic tributes to the pop-up genre.

Next I felt it was important to study the history of moveable books and experience "excellent" examples of pop-up book design. I discovered that "moveable books" have been dated back as far as the 1300s, much longer than I had realized, and that their intended audience was adults rather than children [Carter 1]. According to paper engineer, illustrator and author David Carter the term "pop-up" was first used in 1932 by the American Publisher Blue Ribbon books [1]. Knowing that I would have a wealth of resources to gain insight from I began my research looking online, in libraries and in bookstores; several notable artists and titles were persistently cited as most notable.

Austrian architect and artist Vojtěch Kubašta created his first pop-up book in 1956 and is widely regarded for his artistic style and imaginative presentation. His 1960's published Goldilocks

Design Research: Continued

and the Three Bears ; The Three Little Pigs presents two timeless fairytales in one colorful pop-up presentation. One thing I really liked about this book, apart from Kubašta's artistic styling which I find endearing, is how he built in user interaction through pull tabs and sliders. What I found somewhat



[Pigs1]



[Pigs2]

under employed in Kubašta's works was a creative harnessing of kinetic energy via large fold outs.

One of the best examples of effective and creative use of kinetic energy in a pop-up book can be found in Robert Sabuda's adaptation of Lewis Carroll's Alice's Adventures in Wonderland. Kinetic energy is energy that is a result of motion, Sabuda's works make efficient and creative use of a variety of kinetic forces but particularly impressive is his harnessing of page opening energy. A sample picture here labeled "Alice" demonstrates the intricacies of his design; when opened by a user the cards seemingly spring from 2D to 3D; the mini-book visible at the bottom of the picture contains other movables.



[Alice]

Design Research: Continued

Now that I had gained a sense of how I wanted my project to physically move and how to make it happen I needed to develop my artistic vision of how I wanted D-base to look. As I began to formulate the concept for this thesis I sharpened my understanding of modernist architectural design and sought to discover architectural structures that were both modern in structural design and visually imaginative. Many times when brainstorming for a project I find it useful to take note of what I do not want to do. In regards to this, I knew that I did not want “modernist drab”; I wanted to avoid an industrial feel. I wanted to produce a modern minimalism that was clean and bright; lots of white but not cold. This was done so that the interior design would act as a canvas per se; and when pops of color were introduced in accessories and clothing items the overall impact would be heightened.

The Italian fashion company Prada has stores in New York City and Tokyo that were of inspiration in my brainstorming phase. Both the NYC store designed by Rem Koolhaas and the Tokyo store designed by Herzog and de Meuron convey a modernist flair with brightness, openness and fluidity. I wanted to emulate this airiness by creating a bright space with a sense of openness. I have visited both stores; as a customer in these spaces I felt a sense of peace. For me the



[Prada Store NYC]



[Prada Store Tokyo]

Design Research: Continued

experience is to like walking through a botanical garden. The clothing is displayed in a manner almost like a museum; you walk up to the clothing areas like they are works of art; this feeling is what I wanted to convey in my project site.

A Target store television commercial caught my eye and the movement of the camera was a source of great inspiration and influence. While it lacked any interactivity, due to the nature of the content, it was visually clever. It is one of the best digital representations of a pop-up book and a pop-up book's movements that I have seen. I really liked the way that the camera flew down from almost a 90° angle, then arced and tilted around as the pop-up animation took place. This ad gave me fuel for thought on how to plan my fly-in animation that is viewed when users first enter the site.



[Target]

Finally as mentioned earlier in my "Thesis Problems" conclusion there really are not many digital representations of pop-up works online. The examples that I have discovered seem to be heavy on artistic design but light on user interactivity. "The Eco Zoo" presents a very creative and fun designed website with pop-up inspired visuals but user interaction within the 3D digital pop-up book is nonexistent. This site was inspirational but I made a decision after viewing this site that I did not want to necessarily have a pop-up "book" website. Instead I wanted to develop a website that provided users with an opportunity to interact in a manner congruent with traditional pop-up texts.



[ECO ZOO]

Design Considerations

At the conclusion of my brainstorming and research I possessed a much more informed understanding about how pop-ups are designed and how they work. I had experienced excellent examples of pop-up books and had seen the shortcomings of the digital representations of pop-up works currently on the web. I set out to develop D-base, a fashion catalogue website that would include both pop-up visuals and pop-up interactivity.

I experimented with several interface designs. At first I thought about going with an interface with a brushed aluminum, black, white, and glass look. I thought this a little too masculine and industrial for a site that was intended user base was females. I considered something more feminine using baby blue, pastel pink and white ribbon. Was this too soft and not fashion forward enough? I knew that I wanted to keep the palette minimal; I knew that I wanted a lot of white and I wanted the geometry of the 3D space to provide interest but not distraction from the “main thing” which would be the 3D clothing items. I planned to make clothing items vibrant so that they would stand out against a mostly white interior design.

I was always thinking about how I could integrate more tributes to pop-up interactivity. D-base is intended to be a sophisticated and elegant fashion boutique. Because of this I did not want to “over do” the pop-up functions and turn the site into something silly or childlike. The pop-up functions that users interact with are designed to be “functional,” meaning they are there for purpose not as gimmicks. When a user selects a clothing item a brief animation plays that shows the object 360°. After this the user is given the control over item rotation. This type of interaction is useful and fun for users as they have a simple yet meaningful way to interact. As previously stated this site is intended to provide customers with a simple and enjoyable shopping experience. I did not want to distract users from navigating the site by building in a bunch of unnecessary and potentially tiresome pull-tabs.

Design Considerations: Continued

I wanted to provide users with information about the products that they selected in a way that would not interrupt the simplicity of the site. I also wanted to stay with the modern minimalist theme. I decided to go with a transparent information window that would only appear when a user selected an item. I decided to make the information window transparent so that the user never feels as if they are leaving the current page; there is a sense of preservation of location with information coming to the user rather than the user transitioning somewhere else to view the information. I think that there is an important distinction between the two.

After a user selects a footwear item and a clothing item adding them to their favorites list the user can then view the items in a suggested layout with other accessories. There are five clothing items and five footwear items in the D-base showroom; this means that there are twenty-five potential combinations for users to view. I had to be aware of the complexities of adding new products as I needed to manage my time effectively.



Design Considerations: User Testing

User Testing

I tested my project with two different groups of people. The first group I tested with was a small group of teenage women and the main area of concern for me was site navigation. As the testers navigated the website I observed their navigation and asked them questions. One thing that stood out immediately as a concern was the large amount of mouse input that was required to navigate the site due to the layout of several tab buttons. The users needed to make large movements with their mouse to navigate some buttons. One of my advisors, Dan Deluna, had also stated that this was a design concern. This was a result of a menu design in which I had placed tabs at the four different corners of the exterior frame with the goal of creating a visual balance. As with any project I knew there were going to be a number of revisions that had to be made, this was an instance where visual aesthetics needed to be reconsidered in order to make room for improvement to usability. A couple of the users seemed to have difficulty navigating some areas of the site and asked me for help. This led me to believe that it was necessary to add brief instructional cues for users to assist with some of the navigation areas that my test group struggled with.

I tested with a second group of college-aged women after making revisions to address the areas of concern found with the first group. The main revisions made were the rearranging the tabs to one side of the exterior frame so that not as much mouse movement was required by the users in navigation of the main menu interface and adding brief navigational instructions in several places. This second round of testing went very well. The instructions that I had added worked well but they needed some simple rewording. I felt that the directions were a visual distraction so I worked them in as either transparent frames that disappear up a user click or as a roll-overs to minimize the impact on the visual cleanliness of my project.

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Design Considerations: User Feedback

User Feedback

I received some pretty positive feedback at the thesis show. Many of the users were drawn into the project because they liked the ability to mix and match items to see 25 different outfits put together. Some users though still seemed a bit lost in the project; they were not sure what to do but this was mainly do to the fact that they did not read the directions I provided. Overall I think my project was successful. I realize the topic and style does not fit everyone's interests or tastes but I was glad that I was able to entertain most of the users and stay true to my original proposal. I wish I had more time to create this project in a few more languages, for the users whose first language is not English. Navigating the site takes more time for non-native English speakers and it is more challenge for them; by providing more languages options D-base could become more user-friendly. I also realize that I could provide a skip button for users to skip the shoe or clothing animations if they just want to change their outfits after moving between departments. D-base was not intended to be an online selling site, time was not the main concern, I wanted users to take their time and enjoy the animations that I created rather than skipping them so they could "get it over with."

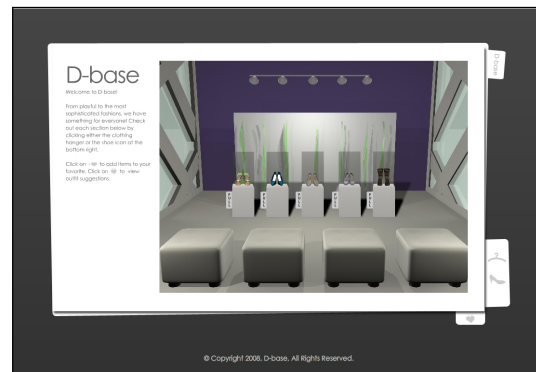
Technical Issues

The physical appearance of the exterior and interior designs were sketched in Adobe Photoshop and later modeled in Autodesk Maya. The movie clips were imported into Adobe Flash in order to create the interactive features for the users. I found it more efficient to break the clips up and render them in smaller pieces on multiple computers. Merging the movie clips in Adobe After Effects saved me a great deal of time in rendering for this project. The main reason for using Flash was to take advantage of its features in support of vectoring and rasterizing graphics; it was also easier to manipulate models in Flash. Vectoring was particularly useful in developing the pull-tabs for the display cases. The pull-tabs could be made, modified, and manipulated so that they would not become pixilated and take away from the aesthetics of the 3D clips. The published format for these movie clips is swf format for Flash Player. The swf format is widely used and the designed content is accessible through various Internet browsers such as Safari, Internet Explorer, and Firefox. A plug-in link will be provided for target audiences to download the necessary application via the Adobe website at no cost.

As with any project there were a number of revisions that had to be made in the development of D-base. For my main menu user interface, I originally had the exterior frame tabs spread out at the different corners of the page. With consideration to developing a user-friendlier site I decided to rearrange the tabs so that there is not as much mouse movement required by users in navigation of the main menu interface. See below.



(First tab layout)



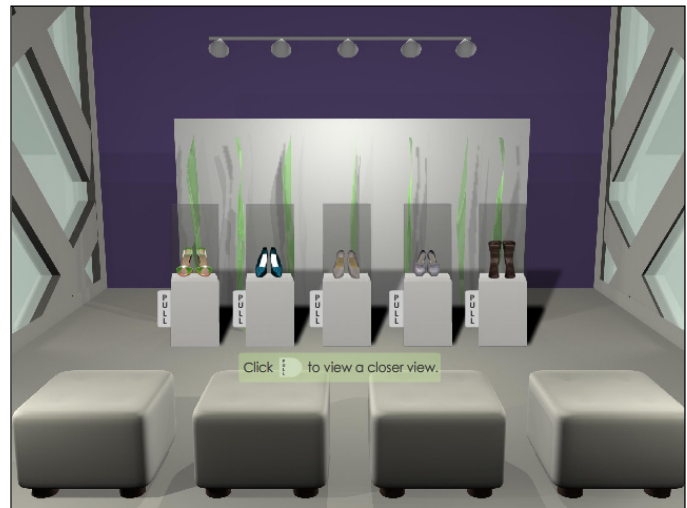
(Revised tab layout)

Technical Issues: Continued

My shoe menu interface design was originally intended to display five shoes with a front and side view. Upon opening the page the user would be presented a front view of the shoes but when the user “rolled over” a shoe image a side view would appear. I felt that this was too traditional and kind of expected. I wanted to increase user interaction and utilize pop-up features so I rethought this interface. I introduced a pull-tab at the side of each shoe display case that users could pull, just like in a tangible pop-up book, to initiate the side view of the shoes in the display cases. I did not like the way that the shoes view just changed from front view to the side view; I wanted there to be a transition between the views. I made the shoes into 3D objects and made it so that when a user pulls the pull-tab the selected shoe will rotate around twice providing the user with a good look at all sides of the shoe and then stop on the side view. At this point I also made it so the user could rotate the selected shoe on their own so they can see whatever view of the shoe they desire.



[Original 2D Shoe Menu with rollover]



[Revised 3D Shoe Menu with pull-tabs]

Technical Issues: Continued

I wanted showcase the various clothing and shoe designs as they might appear in a shops display window to create a more virtual feeling. When a user selects a clothing item and a pair of shoes they are given the opportunity to view the items in a display window with suggested accessories. D-base contains five clothing items and five shoe items, this meant that there were twenty-five potential combinations for users to view. At first these different outfits were created with Adobe Photoshop in a two-dimensional format. After thinking about it and considering feedback received at my defense, I really began to feel that the 2D was not meshing very well with the 3D environment that I was developing. I addressed this by recreating all the outfits using Autodesk Maya to develop the twenty-five layouts in 3D form. When building the clothing models I learned that when using polygons the clothing pieces appeared too boxy or too smooth, and they seemed to loose a lot of detail. I ended up using a new feature in Maya, nCloth for softer more realistic looking clothing. The change from 2D to 3D clothing layouts really established a seamless blend between the 3D background environment and the 3D store objects.



In developing the animations and movements of the 3D pop-up book environment I originally experimented with the “Skeleton” setup. While the “Skeleton” setup works very well in hinging limbs on

Technical Issues: Continued

a representation of an animal or human being it was overly complex for my projects needs and my early attempts did not seem to move correctly for a book. I had read about deforming meshes with Maya's "Lattice Deformer", I found it easier to use than "Skeleton" and the finished results were exactly what I was looking for.

Creating a 3D project takes a lot of time but making sure that the site run smoothly is very important. The biggest advantage of Flash is its abilities in regards to interactivity. In developing the video clip content I had to relied on Maya for its advantages with vivid lighting, realistic and accurate perspective objects. To make sure that I took advantage of both pieces of software's strengths and keep file sizes smaller, I rendered my still objects and the background as still images. The rest I rendered separately into small movie clips that were later imported as .flv files into Flash. All the buttons and their functions were then created in Flash. It was very clear and simple; when a button is clicked it leads to its movie clip. The major problem I had with Flash was transferring from AS2 to AS3. Since AS3 was new at the time I developed this project and since AS3 removed some of the features of AS2, I found AS3 to be more cumbersome and time consuming. Several specific aspects of AS3 that were quite frustrating at times include:

1. Creating simple interactivity is more difficult with the removal of `on()`/`onClipEvent()`
2. Controlling parent movie clips is more difficult as a result of casting `DisplayObject.parent`.
3. Loading .swf files and images is more difficult with the removal of `loadMovie()`.

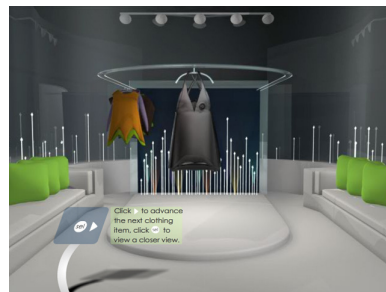
A technical issue that was a persistent bother and one that slowed me down was the fact that I was developing this project with software that I was not highly proficient with; mainly Flash Actionscript 3.0 and Maya. As previously mentioned Flash Actionscript 3.0 was just switched to a new version of the software at the time I was developing this thesis and it was not easy to find resources to assist me in developing my project. I was also mostly unfamiliar with Maya before

Technical Issues: Continued

working on this project. Getting the lighting right took a lot of patience due to my limited experience; a lot of my objects tended to look flat and dark.



Early going, too many lights
dark shadows, flat looking.



Revised. Fewer lights, fuller
more realistic environment.

I had added too many unnecessary lighting elements to my scenes and missed the rim light for that extra hint on my objects. I discovered that all I really needed to do was to follow the 3-point light rule. After deleting some lights that were adding a lot of unwanted effects on my scenes the lighting looked better and the render time for my scenes also sped up quite a bit.



Another look. Again early
going, too many lights
dark shadows, flat looking.



Again revised look. Fewer
lights, fuller more realistic
environment.

While it was frustrating at times and it slowed me down I know that I learned a great deal in completing this thesis and I believe that the skills that developed and sharpened will be of great benefit to me as I reenter the career field.

Conclusion

D-base turned into a labor of love and I am very proud of what I have created. No matter how technology develops I believe pop-up books will always exist. I believe this mainly because of that undeniable "Wow!" factor; the fascination that comes with the turning of each page and the user interaction that can take place. Multimedia developers have yet to capture the form and functionality of pop-up books. D-base has advanced this cause.

I believe that the time is now for development of digital media that references the functional design features of pop-up books. With the growing popularity of touch based devices like cell phones, computer monitors, mobile media devices like the iPod Touch and academic tools like Smartboards such multimedia applications would take full advantage of the touch based user input feature and make user interaction more natural and simple. In the near future electronics manufacturers will be selling touch displays that act as coffee tables or office desktops. Many users will look to shed their input devices and expect touch-based interaction to be available, easy and entertaining. A little bit further down the road we may see 3D hologram displays in homes and I am certain that pop-up forms and functions would transition well with this technology.

In the meantime, it is my hope that this thesis project will serve to entertain and inspire my classmates and all who view D-base to consider how users view and navigate websites. I believe that designers need to think and design from the user's perspective and consider interactivity rather than just focusing on outward appearances of the product. As graphic designer and author Donald Norman professes, "Beauty and brains, pleasure and usability - they should go hand in hand."

Bibliography

Image Sources

ENJIN Inc. The ECO ZOO [Untitled Screen Capture, Labeled "ECO ZOO"]. Retrieved April 10, 2008.

<http://www.ecodazoo.com/>

Glynn, Simon. [Photographer] ["prada04.jpg", Labeled "Prada Store NYC"]. Designed by Rem Koolhaas

2001. Retrieved March 8, 2008. <http://www.galinsky.com/buildings/prada/>

Glynn, Simon. [Photographer] ["pradatokyov1.jpg", Labeled "Prada Store Tokyo"]. Designed by Herzog and de Meuron

2003. Retrieved March 8, 2008. <http://www.galinsky.com/buildings/pradatokyo/>

Vojtěch Kubašta. [Artist]. [Untitled Illustration Labeled "Pigs1"], Retrieved February 12, 2008, from

<http://digilab.browardlibrary.org/cdm4/document.php?CISOROOT=/kubasta&CISOPTR=3794&REC=2>

Kubašta, Vojtěch. [Artist]. [Untitled Illustration Labeled "Pigs2"], Retrieved February 12, 2008, from

<http://digilab.browardlibrary.org/cdm4/document.php?CISOROOT=/kubasta&CISOPTR=3794&REC=2>

Sabuda, Robert. [Artist]. ["gift_bk-alice-ex3.jpg", Labeled "Alice"]. Retrieved February 12, 2008, from

http://www.robertsabuda.com/store/images/gift_bk-alice-ex3.jpg

Target Corporation. [Unknown Artist, Unknown Design Firm]. [Composition of Untitled Screen Captures Labeled "Target"].

Internet Sources

Artcyclopedia. [2008]. Retrieved February 10, 2008, from <http://www.artcyclopedia.com/>

ECO ZOO. [2008]. Retrieved April 10, 2008, from <http://www.ecodazoo.com/>

Galinsky. [2008]. Retrieved March 8, 2008, from <http://www.galinsky.com/>

Norman, Donald. [2008] Ubiquity, Volume 4, Issue 45, January 13, 2004 - Jan. 19, 2004. Retrieved March 8, 2008, from http://www.acm.org/ubiquity/views/v4i45_norman.html

Robert Sabuda. [2008]. Retrieved March 12, 2008, from <http://www.robertsabuda.com/>

Bibliography: Continued

Text Sources and Brief Survey

Carter, David A., and James Diaz. The Elements of Pop-Up A Pop-Up Book for Aspiring Paper Engineers. New York: Little Simon, 1999.

David Carter has written this as a reference book for those interested in creating pop-up works. Carter gives many suggestions about pop-up design concerning energy and motion. Carter also provides a useful collection of good pop-up design examples. This book has aided me in brainstorming the design of my digital pop-up feature.

Freeman, Michael. Space: Japanese Design Solutions for Compact Living. New York, N.Y.: Universe, 2004.

Michael Freeman's Space: Japanese Design Solutions for Compact Living is a great showcase for creative living in small spaces. It has assisted me in developing concepts for the appearance of this online retail store.

Heller, Steven, Paul Rand, and Jessica Helfand. Paul Rand. London: Phaidon, 1999.

This book is an essential read for every graphic designer; it explores the works and professional perspectives of famous graphic designer Paul Rand. This book provides tons of great ideas and graphics examples and has helped me to evaluate the purpose and functions of my designs; it is a great reference for all designers.

Johnson, Jeff. GUI Bloopers: Don'ts and Do's for Software Developers and Web Designers. Morgan Kaufmann, San Francisco 2000.

Jeff Johnson has done a great job of deconstructing real world Graphic User Interfaces. This book is designed to aid designers in the development and implementation of GUI's. It provides real world examples of GUI oversights and blunders and offers remedies and suggestions for design. I really support the author's central ideal that designers need to think and design from the user's perspective and consider interactivity and function ability rather than just focusing on outward appearances of the product.

Krug, Steve. Don't Make Me Think!: A Common Sense Approach to Web Usability. Circle.com library. Indianapolis, Ind: Que, 2000.

Steve Krug's Don't Make Me Think!: A Common Sense Approach to Web Usability is a great guidebook for web designer, easy examples of how to make websites better and more functional. The author talks the process of designing a website, from the initial conceptualization to the execution the site, This book is an easy read, it lays out a process and model that is very easy to understand.

Bibliography: Continued

Kubašta, Vojtěch. Goldilocks and the Three Bears ; The Three Little Pigs. Westminster books, 327. London: Bancroft & Co, 1960s.

Two classic fairytales bound in one lovely pop-up book. I love his illustrations, his characters look timeless and iconic, colors are bright and saturated. While he does not make large use of fold outs he does implement a variety of user interaction tools imaginatively. Sure to bring a smile to your face.

Nielsen, Jakob. Designing Web Usability: The Practice of Simplicity. Indianapolis: New Riders, 1999.

While most of what Jakob Nielsen conveys in this book may be chalked up as "common sense" the fact is that these common sense mistakes are made by website designers again and again. Many designers design their sites focusing too narrowly on the artistic conveyance and this can result in awkward and painful experiences for end users.

Norman, Donald A. The Design of Everyday Things. London: MIT, 1998.

This is an excellent book! I highly recommend this read to all designers. This book is my biggest inspiration in this thesis project. The main idea is that designers need to create a user-friendly designs; my central theme in creating my online retail store. Donald Norman provides great examples, he reminds designers to use common sense and to focus their designing energies on function ability and usability.

Rand, Paul. From Lascaux to Brooklyn. New Haven: Yale University Press, 1996.

Paul Rand compares the ancient wall paintings contained in the Lascaux cave to modern graffiti in Brooklyn and asserts that "simplicity and geometry are the language of timelessness and universality." The idea is that good art is timeless and an artist does not need to be overly complex to have a lasting meaningful impact. I agree with this, I am most at home in my art when I am creating projects that reflect these concepts.

Sabuda, Robert, and Lewis Carroll. Alice's Adventures in Wonderland. A classic collectible pop-up. New York, NY: Little Simon, 2003.

Definitely without reservation my favorite pop-up book. The level of intricacy is just without parallel. Every turn of the page brings amazement and there are many little features to focus on once readers look away from the main object pop.

Tuck, Mike. "The Real History of the GUI" SitePoint. August 13, 2001.

This book helps to understand the "how and why" of the design of Paul Rand's work. The simplicity of design often is forgotten by designers nowadays, great looking design without a great conceptualization leads to meaningless works.