

California State University, San Bernardino

CSUSB ScholarWorks

Theses Digitization Project

John M. Pfau Library

2008

Web templates: Unifying the Web presence of California State University San Bernardino

Angela Marie Gillespie

Follow this and additional works at: <https://scholarworks.lib.csusb.edu/etd-project>



Part of the [Communication Technology and New Media Commons](#)

Recommended Citation

Gillespie, Angela Marie, "Web templates: Unifying the Web presence of California State University San Bernardino" (2008). *Theses Digitization Project*. 148.

<https://scholarworks.lib.csusb.edu/etd-project/148>

This Project is brought to you for free and open access by the John M. Pfau Library at CSUSB ScholarWorks. It has been accepted for inclusion in Theses Digitization Project by an authorized administrator of CSUSB ScholarWorks. For more information, please contact scholarworks@csusb.edu.

WEB TEMPLATES: UNIFYING THE WEB PRESENCE OF
CALIFORNIA STATE UNIVERSITY, SAN BERNARDINO

A Project
Presented to the
Faculty of
California State University,
San Bernardino

In Partial Fulfillment
of the Requirements for the Degree
Master of Arts
in
Communication Studies:
Integrated Marketing Communication Track

by
Angela Marie Gillespie

December 2008


WEB TEMPLATES: UNIFYING THE WEB PRESENCE OF
CALIFORNIA STATE UNIVERSITY, SAN BERNARDINO

A Project
Presented to the
Faculty of
California State University,
San Bernardino

by
Angela Marie Gillespie

December 2008

Approved by:




Ahlam Muhtaseb, Chair, Communication Studies

12/2/08
Date



Jo Ann Grant, Communication Studies



Victoria Seitz, Marketing

© 2008 Angela Marie Gillespie

ABSTRACT

Like many universities, California State University, San Bernardino (CSUSB) faces challenges communicating a unified brand identity over the internet. The distribution of Web site design responsibilities throughout the university has lead to a disjointed Web presence with varying use of navigation, design themes, and logos. The inability to communicate consistent messages hinders the university's ability to compete for students, faculty, and funding. There is a need to communicate a consistent brand identity across all Web sites within a university.

Through the research of current Web design standards and techniques, this project designed standardized resources for webmasters at CSUSB that will allow them to implement the brand identity of the university. Particular considerations were given to providing consistent navigational structures, design themes, and brand identity.

The templates use XHTML for semantic content structure and CSS for presentation of the content and layout design. The goal of the project was to create university branded ready-to-use templates that meet all accessibility standards as outlined in Section 508, and meet current university identity and Web standards.

ACKNOWLEDGEMENTS

First, I praise God for all of the challenges and blessings that He has bestowed upon me. With each challenge, I grow and am brought closer to Him through the experience. "I can do all things through Christ who strengthens me" Philippians 4:13, NKJV. He has also placed wonderful people in my life who provided me with support and encouragement throughout the duration of this project.

I wish to thank my husband and two children who especially provided understanding, motivation, and prayers during the duration of this endeavor. I am grateful for their understanding and acceptance of the challenges faced in balancing my time between my family, work and education. Their support has been instrumental to my success.

Furthermore, I express sincere appreciation to my committee Chair, Dr. Ahlam Muhtaseb, for her advice, patience, and support during the creation of this project. All of her tree saving edits were most appreciated. I also thank my committee members, Dr. Jo Anna Grant and Dr. Victoria Seitz for their valuable input during this project and my graduate courses.

TABLE OF CONTENTS

ABSTRACT	iii
ACKNOWLEDGEMENTS	iv
LIST OF TABLES	vii
LIST OF FIGURES	viii
CHAPTER ONE: BACKGROUND	
Introduction	1
Statement of the Problem	2
Purpose of the Project	7
CHAPTER TWO: LITERATURE REVIEW	
Branding	9
Corporate Branding	10
Corporate Identity	12
Brand Identity Management	15
Branding Higher Education	18
Brand Identity Web Sites	24
Web Standards	31
Web Design Tools	39
Templates	39
Table-Based Layouts	41
Cascading Style Sheets (CSS)	44
CHAPTER THREE: METHOD	
Procedure	51

Template Design	53
Template Development	63
CHAPTER FOUR: DISSUSSION AND RECOMMENDATIONS	
Discussion	66
Evaluation	70
Limitations of the Project	75
Future Research and Recommendations	77
Conclusion	78
APPENDIX A: TEMPLATE CODE	80
APPENDIX B: SECTION 508: 1194.22	82
APPENDIX C: TEMPLATE DESIGN SAMPLES	84
REFERENCES	91

LIST OF TABLES

Table 1. Name and Description of Dreamweaver
Template 65

LIST OF FIGURES

Figure 1. Template - Official University Banner	55
Figure 2. Template - Customized Image Banner Area	57
Figure 3. Template - Page Content Highlights	59
Figure 4. Admissions and Student Recruitment Web Page	61
Figure 5. About Cal State San Bernardino Web Page	62
Figure 6. News.csusb.edu Home Page	73
Figure 7. News.csusb.edu Inside Page	74

CHAPTER ONE

BACKGROUND

Introduction

Universities, similar to other institutions and companies, must compete in their own markets. Universities compete for students, faculty, and funding. They need to personalize their institutions with an identity and a distinguishable image that allows them to rise above other institutions, and make a connection with their audiences. This can be accomplished through consistent branding of a university.

Since the internet is a major communication channel for universities, it makes sense to insure that a Web presence of a university is representative of the university's brand and is consistent throughout all Web sites within the university. This challenge needs to be addressed at many higher education institutions around the country.

This project researches and develops Web design tools that can provide standardized resources to Web designers specifically for California State University, San Bernardino (CSUSB). Particular considerations are given to

providing consistent navigational structures, design themes, and brand identity for the Web presence of CSUSB.

Statement of the Problem

CSUSB is one of the 23 campuses of the California State University system. The university is comprised of five colleges, and a large selection of programs and departments. With over 17,000 students (Quick Coyote Facts, 2007), 450 full-time faculty members (Faculty Profile 2006/2007, n.d.), and 1,600 staff members (CSU profiles, 2004), CSUSB has numerous Web sites located through the initial interface of its homepage. As visitors explore the CSUSB Web site, they will quickly discover the look and feel of the Web site changes as they move away from the first level of navigation and venture deeper into the various CSUSB sites. From a quick observation of a handful of CSUSB sites, it appears that there are no concrete design standards set forth for webmasters to follow.

The lack of consistency is not surprising considering the number of employees across campus in various departments maintaining sites that make up the Web presence of CSUSB. The Department of Academic Computing & Media (ACM) maintains an unofficial Web development contact list

online listing 224 different Web sites and 116 individuals responsible for Web site development, design, and/or content (Web Development: Contact List, 2007). This unofficial list is an accumulation of contact information from ACM workshops and campus Web sites. ACM provides a variety of Web services to the campus community ranging from design, development, Web accessibility, to hosting sites (Web Development: General Information, 2007); however, they do not have the resources to assist all campus units in all of these areas in a timely manner due to staffing limitations.

This decentralized method of Web development without any design standards has facilitated the creation of a disjointed Web presence. The university is aware of this problem and is taking steps toward change with the development of a new identity and usage guidelines. The university's logo committee spent over two years researching and redesigning a new logo. The process is underway and close to a full release of a new campus identity. The undertaking will be considered fully launched once the visual identity standards have been published in print and online (S. Robinson, personal communications, October 15, 2008). During the initial launch phase of

releasing the new identity, the Office of Public Affairs allowed the new logo to be released for limited print use. During this time, public affairs discouraged the use of the new logo on Web sites until Web design standards could be developed and approved (A. Gillespie, personal communications, July 30, 2007). After the announcement of the release of the official new logo made by Al Karnig, president of CSUSB, during the Fall 2007 convocation ceremony to faculty and staff, it became necessary for public affairs to allow the logo to be released for limited Web use with the understanding that all uses needed to be approved prior to being published online. It is expected that in fall of 2008, a full version of visual identity standards will be released and all versions of the logo will be available to the campus community through a visual identity standards Web site (S. Robinson, personal communications, August 13, 2008).

In addition to the new identity, Karnig has taken steps to initiate change in the overall marketing of the university. At his request, a peer review of the image of CSUSB was conducted to address how changes in marketing and advertising efforts could affect long-term student enrollment. Five CSU administrators, with experience in

public affairs and admission/enrollment management, outlined several recommendations that CSUSB could follow in an effort to enhance its identity and image, while developing a long term branding program in a special report released in 2007 (Keith, Volkert, Maraviglia, Whitlatch, & Blackburn, 2007). One low-cost option proposed to increase awareness of CSUSB would be to "redesign and reorganize its homepage to create a more distinctive first impression" (p. 6). A more vibrant and enticing Web site would be beneficial to the incoming students. The review team also recommended cosmetic changes such as making the logo stand out more instead of allowing it to be a blue logo on a blue background. They recommended including the *Come Here, Go Anywhere* slogan, which was incorporated into student recruitment activities starting in 2006, on the homepage of CSUSB with graphics. Additional visuals, such as supporting profile features, that would support the concept of coming to CSUSB for an education and taking that education to go anywhere where recommended as well (Keith et al.). The administrators stated, "In the longer term, CSUSB should give some thought to redesigning their entire site perhaps taking the visuals and theme of the new brochure ... and bring it to life on the website" (p. 7). Revitalization of

the CSUSB homepage provides a strategic opportunity to introduce a new Web presence and guidelines to the entire campus community, while addressing all of the above recommendations.

CSUSB acted on the advice of the peer review committee and launched a new Web site in January 2008. The new look extended from the homepage through most of the first level of navigation. The following overall goals were established during the development of this new Web site:

- 1) Use the Web site to help market the university;
- 2) Make the site more visually appealing;
- 3) Help to 'brand' the university;
- 4) Create consistency throughout the Web site so visitors understand they are at CSUSB site;
- 5) Provide dynamic content that is updated daily;
- 6) Promote university events and activities;
- 7) Create simple and clear navigation;
- 8) Organize navigation links into logical categories;
- 9) Accommodate special needs/requests;
- 10) Meet accessibility standards;
- and 11) Meet federal, state and CSU mandates (S. Robinson, personal communication, June 25, 2007).

The university continues to work on other Web sites within the university and bring them inline with identity

standards and Web standards; however, due to the large number of Web sites in need of realignment, ACM cannot complete the redesigns of every site in a timely fashion. A consistent image of the university can be reached much faster through the implementation of ready-to-use templates by individual webmasters. These templates can provide a unified image of the university and maintain a consistent Web presence for the university.

Purpose of the Project

The purpose of this project was to create a Web development tool that would encourage webmasters to create Web sites that adhere to the design standards set forth by the university. Conducting this project involved researching current Web design practices and designing ready-to-use templates. The resulting templates visualize the university brand conveyed in the new homepage design, allowing webmasters to support a unified visual identity with minimal design efforts on their end.

This project was significant on several levels; on a professional development level, the research and creation of the templates enhanced and expanded the author's Web design skills. On a production level, the templates were

made available for immediate use in the Office of Public Affairs, which has eased the workload and time involved in creating Web sites for this office.

The ultimate objective of this project is to facilitate a consistent brand image that can be communicated from all departments at the university. The ready-to-use templates provide an invaluable tool for webmasters to implement the university brand without having to recreate the wheel each time they develop a new site. Upon the completion of this project, the templates will be presented in November 2008 to the director of Academic Computing and Media (ACM) for consideration as a tool for campus webmasters to utilize in the creation of Web sites that meet all university standards and contribute to a unified Web presence for the university.

CHAPTER TWO

LITERATURE REVIEW

CSUSB is faced with the challenge of unifying their Web presence. President Karnig has expressed the urgency of updating the image of the Web site of the university in an effort to recruit and retain students (A. Karnig, personal communication, September 24, 2007; A. Karnig, personal communication, September 25, 2007; A. Karnig, personal communication, January 9, 2008). To further examine the topic of presenting an online image, branding literature will be reviewed in the next section examining specifically brand identity, brand identity management, branding higher education, and branding a Web site. Additionally, Web standards and Web design tools will be examined to address the actual design methods of building a traditional Web site.

Branding

Shifts in industrialization and technology have created the need for branding. Schultz (1993) presents the idea of a "massive market surplus." Marketing professionals have seen a change in the American society through the

introduction of technology. Technology has advanced so quickly that it allowed more products onto the market than can be consumed due to increasing imports and competition. The market is saturated with products, many of which virtually have no differences. Research asserts this has produced a shift from mass marketing toward a more individualized marketing concept which tends to rely on branding to make distinctions from one product to another (Shultz, 1993; Shultz & Shultz, 2004).

This concept relates to corporate brands as well. Differentiation is needed at the corporate level to distinguish one company from the other. "In an era when companies can no longer base their strategy on a predictable market or a stable preferential product range, the ground rules for competition change. Differentiation requires positioning, not products, but the whole corporation" (Hatch & Shultz, 2003, p. 1041). Companies need to give a more holistic look at their branding practices to insure that they are presenting a desirable and believable brand.

Corporate Branding

Knox and Bickerton (2003) identify through an extensive literature review how the customer focus on a

marketing perspective and the organizational focus on a multidisciplinary perspective have converged towards an academic thinking of corporate branding. Marketing research can be followed through the years with an emphasis on brand image (Boulding, 1956), brand positioning (Ries & Trout, 1982), brand identity (de Chernatony, 1999; Kapferer, 1997; Macrea, 1999; Urde, 1999), corporate association (Ind, 1998; Keller & Aaker, 1998; Tilley, 1999) and corporate branding (Hatch & Schultz, 2003; Knox & Bickerton, 2003).

When companies shift from product to corporate branding, many marketing strategies must be altered to accommodate the broader aspect of the entire company. Hatch and Schultz (2003) outline how corporate branding differs from product branding in several ways: (1) focus is shifted from the product to the company; (2) the organizational behaviors/culture become more visible and scrutinized; (3) the attention to consumer images of the brand is expanded to develop all audience images of the brand; (4) more complex, strategic practices are required to gain organizational-wide support of the brand; (5) the temporal base of the brand is much broader, drawing on the heritage of the company and the vision of the future; and (6) a strategic function is needed to create an internal

organizational culture that will support the vision of the corporate brand.

Wheeler (2006) describes a brand as "the promise, the big idea, and the expectations that reside in each customer's mind about a product, service or company. People fall in love with brands, trust them, develop strong loyalties to them..." (p. 4). Knox and Bickerton (2003) view "a corporate brand [as] the visual, verbal and behavioural expression of an organization's unique business model" (p. 1013). Corporate branding relies on the successful intercorrelation between a company's strategic vision, organizational culture, and corporate images (Hatch & Schultz, 2003). Knox and Bickerton (2003) add variable of competitive landscape to this context to help anticipate future changes to the corporate vision, culture and image.

Corporate Identity

The corporate identity framework used by many graphic designers parallels changes seen in the marketing field of corporate branding. The graphic design lens has been expanded and massaged throughout the years. Corporate identity is often misunderstood and simplified down to a logo and other visual cues that represent a company. Balmer and Greyser (2003) explain, "many assume that the graphic

design lens reflects the dominant viewpoint within marketing" (p. 41). This is understandable when considering the roots of corporate identity. Early corporate identity practitioners were graphic designers advocating corporate image solutions and the use of symbolism to increase company visibility (van Riel & Balmer, 1997). In the defense of graphic design, most people do not see or understand what goes into a good design. Margulies (1977) stated, "Even the most modest identity programs must include extensive preliminary research and extensive implementation efforts for successful corporate repositioning" (p. 71). Corporate identity is much more than a logo and a company color. Like personal identities, corporate identities provide deeper distinguishable characteristics that set the company apart from other companies and these characteristics must be fully investigated to accurately articulate the essence of the company into a visual design. Markwick and Fill (1997) summarize Olins and Topalian by stating, "Corporate identity is the articulation of what the organization is, what it does and how it does it and is linked to the way an organization goes about its business and the strategies it adopts" (p. 397).

Corporate identity scholars have advanced the *graphic design lens* from narrowly focusing on a logo and supporting graphics to be a broad, strategic management process (Balmer, 2001; Balmer & Soenen, 1999; van Riel, 1995). Corporate identity starts from within a company, starting from top management and moving all the way down to the front lines of a company. It manifests all aspects of a company: visible symbolism, physical locations, company culture and personality, strategic planning, etc. These presented elements are the corporate identity and provide a framework for how the company is known or distinguished from other companies. This definition of corporate identity corresponds to that of corporate branding. It has been argued that not all companies need a corporate brand, but they all have a corporate identity (Balmer & Gray, 2003). This view refers to markets without any competition, which is unrealistic in capitalist markets. Ultimately, corporate branding and corporate identity essentially boil down to the same goals that were presented from a marketing and graphic design perspective. The goals include: to identify the company; to promote a distinguishable image that can stand out among the competition; and to create a connection that can resonate with all company audiences.

A key element of the branding process is the visual aspect of an organization's collateral. Wheeler (2006) indicates that:

While brands speak to the mind and heart, brand identity is tangible and appeals to the senses. Brand identity is the visual and verbal expression of a brand. Identity supports, expresses, communicates, synthesizes, and visualizes the brand.... It begins with a brand name and a landmark and evolves into a matrix of tools and communications. (p. 6)

CSUSB established an updated brand identity through the introduction of a new logo, a Web site redesign and other promotional materials that address recruitment efforts. The challenge ahead of them involves managing and consistently positioning that identity throughout all of their communication channels.

Brand Identity Management

The process of building a brand is a strategic process that requires the participation from all divisions of an organization in an integrated approach. The idea of integrated marketing communication arose from mass production and the need to brand products to distinguish them from those of the competition. Schultz and Schultz

(2004) define integrated marketing communication as "a strategic business process used to plan, develop, execute, and evaluate coordinated, measurable, persuasive brand communication programs over time with consumers, customers, prospects, and other targeted, relevant external and internal audiences" (p. 43). It is a holistic approach that requires input from all divisions of an organization and does not limit the strategy to only one division of that organization. Belch and Belch (2004) point out that "the integrated marketing communications approach seeks to have all of a company's marketing and promotional activities project a consistent, unified image to the marketplace" (pp. 9-10). Research confirms the benefits of having a truly standardized integrated program. Low (2000) reports in an empirical integrated marketing communication study that successfully integrated programs are directed by managers with more experience than managers with less integrated programs and their companies are increasing in market share. Interestingly, Low indicates that only 12% of the respondents had a fully integrated program, which leaves a tremendous amount of improvement needed within companies in the United States. Melewar and Saunders (1998) found additional benefits in an identity standardization

study. They found that standardized identity programs positively influence sales, consumer goodwill, brand recall, advertising awareness, market share, executive recruitment, and company reputation for locals. They affirmed that higher degrees of identity control would lead to higher degrees of standardization. The researchers found that the more involved chief executives were in the process, the more successful the company was at attaining high degrees of visual identity standardization.

Integrated marketing communication programs provide strategic program design that unifies the brand identity message presented. "The best identity programs embody and advance the company's brand by supporting desired perceptions. Identity expresses itself in every touchpoint of the brand and becomes intrinsic to a company's culture—a constant reminder of its core values and its heritage." (Wheeler, 2006, p. 14). While it is important to address every touchpoint, this project is addressing Web sites as one step of an integrated marketing communication program. Web sites provide a key front to present a unified brand identity to various publics in today's digital mindset. At CSUSB, Karnig has lead the push to unify Web sites at CSUSB through the creation of cross-divisional committees which

are charged with establishing visual identity standards and Web development standards for the university.

Branding Higher Education

As more and more products and services with comparable features are introduced to the market, branding is essential to making a distinction and being remembered. "The need for effective branding cuts across public and private sectors, from new companies, to merger organizations, to businesses that need reposition" (Wheeler, 2006, p. 6). Higher education must compete on several aspects including student and faculty recruitment, and fundraising contributions (Myers, 2001; Tan, 2001; Twitchell, 2004). The identity of the university is essential to the perception their audiences hold.

Branding at higher education institutions is not a new concept; however, it is being more openly accepted as a standard business practice of running a university. Twitchell (2004) explains that universities faced the need for branding back in the middle of the 20th century when the Carnegie Corporation categorized them into funding groups. He further points out that due to these generalized categorizes, universities were grouped together forcing

them to compete and make attempts to distinguish themselves from other universities. He explains that well-known universities, like Harvard and Yale, do fine based on their prestige and brand recognition, but middle level universities, like most state universities, have to continually work on their brand. "The intense innovation and attention to customer satisfaction occurs as schools follow luxury retails in realizing that it is in their self-interest to continually push to the upper edge of their niche lest they become subsumed in the interchangeable world of middle-or worse, fall into the land of the no-names" (p. 136). Higher education has not moved away from the process of categorization. Universities today await the list of top universities released by *U.S. News & World Report* each year as a measuring point of reaching the top (Myers, 2001; Twitchell, 2004).

Tan (2001) summarizes the reasons branding has increased at universities well in her commentary on university branding:

The benefits of solid branding are as apparent in the educational arena as they are in business.

Universities cost a lot of money to run, and research costs even more. Government funding, moreover, is

declining. Raising money for operating costs and endowment enhancement is thus more important than ever. Every revenue stream - alumni contributions, corporate partnerships, long-distance learning opportunities, and merchandising - must be conscientiously cultivated. In many cases, this means exploiting the core assets of the organization. Like many successful brands, universities have learned that the brand is one such core asset that can transcend categories to sell almost anything. (para. 3)

Universities are facing many struggles with their budgets and declining student enrollment, so they are placing more emphasis on their branding efforts (Twitchell, 2004).

A university needs to come together and present itself with one clear and coherent voice (Tan, 2001). This presentation is presumably easier said than done when considering the structure of the university with students identifying specifically with the college or department they are majoring in as opposed to the university as a whole. Once a student enrolls in a university and starts attending classes, it is possible for that student to only have face-to-face relationships with professors. A strong unified front for the university allows the student to

obtain a stronger association with the university as a whole.

Universities are embracing branding through their communication practices and online presence. Universities are paying attention to the image they present online. In October of 2005, Montana State University, released branded Web site templates for the use of all units and encouraged the process of redesigning and conversion to start immediately. In August of 2006, the university reported that branding conversion was not complete, but was very successful in converting academic, administrative and other units either completely or the top level of the sites (MSU Web communications, 2006). In 2006, the president of the University of Utah stressed the importance of branding for the entire university. The request included:

The singular use of the University's approved logos to identify colleges, departments, and programs; higher visibility of the University's name and affiliation on publications and printed material; a more organized approach to communicating with University constituents; greater infusion of key University messages and themes throughout all communications and publications; and a consistent visual image for

University web sites. (The University of Utah brand identity Web site compliance, para. 1)

The University of Utah is not alone in their efforts at branding. The University of Wisconsin Oshkosh has an integrated marketing and communications team who manage the online brand of the university in an effort to advance their online presence and communication strategies (Hunt, 2008).

In countries other than the US, universities are grasping onto the necessity for branding as well. Imperial College in London has established a *brand shop* Web site which provides logos, content and style advice, and a library of images in an effort to provide everything that is necessary to be inline with the brand of the institution (Colyer, 2005). While concern was expressed that the essence of providing resources such as a *brand shop* was not truly getting to the core of branding, Tom Longden, director of marketing and communications at Nottingham University, indicated that universities are seriously addressing marketing issues and moving in the right direction (Colyer, 2005).

Myers (2001) expresses concern for the university branding in an editorial in the *The New York Times*:

And as the public is well aware, colleges and universities are now in conscious and deliberate competition with one another. We 'bid for student talent,' as the new language would put it, because we know that 'star value' in the student body affects the 'brand value' of the university's name: its prestige, its rankings, its desirability... I think we must be very careful that in the race to become wealthier, more prestigious, and to be ranked Number One, we don't lose sight of the real purpose of education, which is to make people free - to give them the grounding they need to think for themselves and participate as intelligent members of a free society.

(p. 189)

While university branding is a common practice today, academics remind practitioners that the core value should lead back to the education received. Universities are unique in the sense that they are not simply selling a product or providing a service. Tan (2001) explains, "By building strong emotional bonds between disparate groups of independent-minded students and professors, universities transform themselves into universes of unmistakable loyalty. The spirit transcends the individual product of

the organization - the educational experiences and degree" (para. 13). It is this experience that must be integrated into the brand identity. The faculty, staff, and administrators must project through their actions and communications the same brand identity that is being marketed for the university. The brand must resonate from the university culture so that it is believed and not mere marketing hype that falls short of student expectations.

Brand Identity Web Sites

Web sites are paramount to an educational institution's brand identity. They are the face of the university and often the first thing prospective students and other key publics see when they investigate a university. Web sites are prominent communication tools for universities that allow interaction to take place 24 hours a day. Browsing university Web sites allow students to interact with the university in a variety of ways. A few of the things they can do on most university Web sites include applying for admission, registering for classes, paying fees, participating in online courses, accessing grades, and conducting library research. University Web sites "are now an important learning tool for the entire campus.

community and the primary communication tool for current students, parents, alumni, the community, donors, and funding organizations" (Peterson, 2006, p. 217). Because university Web sites are an effective communication tool with various stakeholders, they are a dominant channel for communicating the university's name, image, and brand, which are all contributing elements to the identity of the university.

Brand identity on Web sites is particularly important when looking at research on the amount of time a viewer spends at a Web site before making a judgment. Lindgaard, Fernandes, Dudek, and Brown's (2006) research on initial reactions to Web sites indicates that visual appeal judgments can be determined in 50 milliseconds. Cocoran (2007) further comments on Lindgaard's research: "people can make an instinctive decisions as to whether a Web site is good or bad in 1/20th of a second.... [if] they end up unimpressed, they won't even look at a company's products and services, regardless of whether or not it's competitive" (p. 34). Design attention should also be given to where viewers enter a site. Schmitt (2008) explains the dwindling use of the home page to enter a site: "Search, social networks, blogs, and RSS (among a host of other

online sources) are driving more and more users deep into today's Web properties. Now, the majority of consumers bypass a site's home page completely" (p. 35). He further explains that:

Every page is now a home page, each of which will have a wider reach, a lasting shelf life, and the ability to attract a new audience like never before. To capitalize on this, ensure that every page has a strong, clear global navigation scheme and related content that is visibly promoted. (p. 36)

The process of being able to enter a site from any page conveys the importance of using unified branding efforts on all pages of a Web site. The sites that make up the entire university Web site are no different; they too should carry unified branding efforts to communicate to the viewers the brand identity.

For a Web site to be an effective brand identity communication channel, several design elements should be incorporated into the site, including the visual presentation of appropriate color, typography and image selections, a well structured navigation, and a consistent design layout (Cocoran, 2007; McIntire, 2008). When viewing the Web site, the brand identity needs to be immediately

identifiable. Naddaff (2003) stresses the importance of branding to be visual, feeling-based, and memorable; it is essential to convey the brand through good design that will improve the customers' experience.

Cocoran (2007) states that first impressions of Web sites are vital to deciding to continue viewing a Web site or visit in the future. He further explains that viewers immediately see color schemes, layout design and images which are impressionable to the brand image. These elements can either encourage or hinder the viewing experience.

McIntire (2008) reiterates the importance of the brand image:

Web content ... is influenced by presentation. Visual elements such as color, layout, typography, and image shape a site's personality, or voice. The voice gives a site a unique tone, ambiance, and attitude; generates emotional impact; and makes the site engaging. Every element on the site should contribute to its unique voice. (p. 2)

Shea and Holzschlag (2005) claim "a successful design delivers a message to the viewer that words alone can't. Design is capable of evoking atmosphere and emotion,

creating a tone, and soliciting a response from the viewer”
(p. 48).

Aside from aligning the brand identity through appropriate selection of color, typography, and images, navigation and consistency play a vital role in a successful Web site design. For a Web site to be a viable communication tool, it needs to communicate a desirable message to the receiver through a usable interface. It is important for users to have a strong sense of structure and navigational support when visiting a Web site, so users can identify where they are, where they came from, and where they are going next, even if they are unfamiliar with the Web site (Nielsen, 1999). Consistency plays a major role in site usability. Just as with print text design, Web design requires a layout and style to define a desired consistent structure to organize content and create a predictable pattern for users to follow. Basic design principles introduce the concept of rhythm, the repetition of a design element, to create organization and unity within a design (Cater, Day, & Meggs, 1993; Cullen, 2006; French, 2006; Wallschlaeger & Busic-Snyder, 1992; White, 2007). Rhythm is a form of structure used throughout an unlimited number of design applications. Structure is seen in various forms of

books, from the simplicity of chapter indicators, to the complexity of most college textbooks which give overviews, subheadings, terms, graphic cues, etc. Newspaper layouts use a similar form of structure. Most people in our society learn at some point in their life how to read a newspaper. Headlines, text, and photo captions are all placed in areas where readers expect to see them. Because newspapers have established a history of utilizing this general format consistently, readers unconsciously know where to find the caption of a photo—readers automatically look for it to be set aside from the main article in formatted areas adjacent to or below the photo.

This consistency sets up a structural pattern that users can identify and foresee (Krug, 2005). Structural components presented in a design prepare viewers for what to expect next. Unlike a brick and mortar store, which has a physical environment for shoppers to experience, the internet exists in a non-physical environment. There are no physical doors to walk through as one enters or exists a Web site, and Web sites can be entered into from any page with a direct URL link. It is the designer's job to create an environment that viewers will come to understand as unique to this one Web site. Koernig (2003) describes these

environments as e-scapes in relation to service-oriented Web sites. The e-scape provides an opportunity to set the tone for the organization with tangibility cues to increase positive responses and unaided recall. It is reasonable to expand this concept past service-oriented sites and into the non-physical environment of Web sites in general. Themes developed throughout a Web site's design with graphics and typography create a sense of unity and identity (Lynch & Horton, 2002), which can further the e-scape atmosphere and branding efforts. Consistencies in navigational tools enable users to process information and locate the information that they seek faster (Krug, 2005). A successful design will provide easy to understand navigation and other visuals that put the user at ease; thereby, enhancing brand value (Cocoran, 2007).

While CSUSB has taken steps to initiate a brand identity into the university homepage, much work is needed to implement it into all Web sites within the university. The brand value of the university will increase with each Web site that implements the university homepage design themes, a well-structured navigation, and a consistent design layout.

Web Standards

The Internet is a huge communication network with currently more than 1.26 billion users (Miniwatts Marketing Group, n.d.). Calongne (2001) estimates that the Internet increases by 10,000 pages a day. According to Zeldman (2007), most Web sites are designed for mainstream browsers specific to the time the site was published which results in incompatible Web sites in the future. There is a need for forward-compatible, standard compliant design processes that promote compatibility with future devices and browsers, instead of the backward-compatible design processes seen over the last decade, which become outdated if not constantly being updated to current browsers. Clark (2003) accurately captures the dilemma from a design and maintenance perspective:

A chief advantage of standards compliance is the realization of the long-cherished goal known as 'write once, ready anywhere.' Instead of the coding four different version of a page (for Netscape and Internet Explorer and Windows and Macintosh, respectively - a real life example), you write one page according to spec and each device displays the page accurately. Some differences, like the specific appearance of

fonts, will remain, but designs should be flexible enough not to be broken by such details. (p. 23)

The goal is to communicate intended messages to all users regardless of how they view the Web page.

Some basic internet history and terminology is covered to orient readers to the topic of Web site design and Web standards prior to reviewing Web site design tools including templates, table-based layouts, and CSS.

In 1990, Tim Berners-Lee and Robert Cailliau worked together to invent the World Wide Web in an effort to originally communicate and share information between physics researchers around the world (Okin, 2005). As the Web migrated to a mass communication tool available to the public, no design or development standards were developed and internet browsers developed software the way they thought fit with no standards set between browsers. In 1994, the World Wide Web Consortium (WC3) was founded in an effort to bring standards to Web design (Jacobs, 2007). Web accessibility standards are an important consideration in how well a Web site communicates with potential viewers. In 1997, the WC3 launched the Web Accessibility Initiative (WAI) promoting the usability of the Internet for all users by advising accessibility strategies (Henry & Brewer,

2006). WAI created Web Content Accessibility Guidelines (WCAG) in 1999, which outlined 14 design principles that promote accessibility (Chisholm, Vanderheiden, & Jacobs, 1999). The U.S. government drafted Section 508 of the Rehabilitation Act of 1973 around the same time mandating that all government sites conform to accessibility standards (Electronic and Information Technology Accessibility Standards [Section 508], 1998). Section 508 outlines 16 accessibility requirements. California's state legislature added this requirement to the state's Government Code 11135 in 2002 (S. 105, Ca. 2002). The California State University (CSU) acknowledges its requirement to implement Section 508 on their Web site (Cheng, n.d.). "Section 508 requires all websites under its jurisdiction to provide 'equal or equivalent access to everyone,' including the visually impaired, the hearing impaired, the physically disabled, and people who have photosensitive epilepsy" (Zeldman, 2007, p. 340). These Web accessibility standards facilitate the use of content on Web sites for all users. For example, visually impaired Web viewers need to be able to use screen readers, and viewers with reduced motor skills need to be able to navigate a site with buttons that are large enough for them to click,

since small buttons can create problems for those with reduced motor skills (see Appendix B for a copy of the Section 508: 1194.22 Web-based intranet and internet information and applications retrieved from Electronic and Information Technology Accessibility Standards [Section 508], 1998). Not only does the implementation of these guidelines make Web sites more accessible to those with disabilities, but it also allows more access to handheld electronic devices (PDAs and smart phones), a wider range of browsers, and search engines (Zeldman, 2007).

Several technical terms need to be defined to give readers a better understanding of the terminology used in the creation of Web sites. These terms include HTML, XHTML, XML, and CSS. HyperText Markup Language (HTML) is a basic markup code used to create Web pages (Raggett, Le Hors, & Jacobs, 1999). This code functions as a language which Web browsers read to render pages on the internet. Like software programs, HTML has versions where specifications and standards evolve. These specifications are defined and recommended by the World Wide Web Consortium (W3C), an international consortium which focuses on Web standards and guidelines (Jacobs, 2007).

Pemberton et al. (2002) explain that HTML originally provided a "small set of structural and semantic tags suitable for authoring relatively simple documents" (sec. 1.1., para. 4). Further, they noted how quickly HTML outgrew the original designed structure as users modified it to handle new uses and push it into specialized markets. In other words, designers have used adaptations in HTML to create workarounds which provide the graphically intense internet viewers experience today (Shea & Holzschlag, 2005), and these workarounds have caused challenges, as they tend to be browser-version-specific and require modifications as technology evolves (Pemberton et al., 2002). This results in Web sites that are outdated and unusable on various platforms and browsers. HTML versions advanced to HTML 4, which is still widely used. However, the latest recommendation of the WC3 for Web authors is Extensible HyperText Markup Language (XHTML), which is the next generation of markup language (Raggett et al., 1999). To understand the need for XHTML, a brief look at Extensible Markup Language (XML) is necessary.

XML is a highly structured and flexible universal language that allows content to be displayed on the internet and other applications. It is a meta-language that

is used to define other languages. XML is used to create "a specific vocabulary (labels for elements and attributes) and a declared syntax (grammar defining the hierarchy and other features)" (Cover, 2002, para. 1). Programmers use XML to define the vocabulary and syntax that is used in other programming applications. This meta-language creates a very powerful, customized language that follows standards, which opens up endless uses for the present and future. Zeldman (2007) explains, "XML combines standardization with extensibility (the power to customize), transformability (the power to convert data from one format to another), and relatively seamless data exchange between one XML application or XML-aware software products and another" (p. 106). The power of XML was combined with the familiarity of HTML to create XHTML.

Pemberton et al. (2002) released a W3C recommendation for XHTML on January 26, 2000. They describe XHTML as "a family of current and future document types and modules that reproduce, subset, and extend HTML 4" (sec. 1, para. 1). XHTML stands for Extensible HTML making the HTML compatible with XML. XML has a wider application of use; thus allowing XHTML to be more future-orientated. The researchers also indicate that "by migrating to XHTML

today, content developers can enter the XML world with all of its attendant benefits, while still remaining confident in their content's backward and future compatibility" (sec. 1. para. 4). XHTML is compatible with internet applications of today and tomorrow, including Web browsers, accessibility devices (screen readers) and portable devices (PDAs and smart phones) (Zeldman, 2007).

Web pages need to be structured and stylized, and XHTML provides the semantic structure for internet pages. It is the markup language that organizes the data on the page by calling out headlines, secondary headlines, paragraphs, and other structural elements on a page (Zeldman, 2007).

Cascading Style Sheets (CSS) are commonly used to add style to Web pages. The WC3 defines CSS 2.1 as "a style sheet language that allows authors and users to attach style (e.g., fonts and spacing) to structured documents (e.g., HTML documents and XML applications)" (Bos, Çelik, Hickson, & Lie, 2007, para. 1). Maintaining the style of the page through CSS and keeping it separate from the structure of the page defined with HTML or XML creates cleaner code that is easier to maintain (Mao, Cordy, & Dean, 2007; Zeldman, 2007). The style of an entire site can

be modified in the CSS without touching an XHTML page. The Web site csszengarden.com provides an excellent example of this concept. This site allows viewers to change the CSS associated with the Web page, resulting in dramatically different views of the same content. It is a "powerful display of the flexibility CSS offers" (Shea & Holzchlang, 2005, p. 32). When using XHTML and CSS, designers want to ensure that they are not making any syntax errors that might cause problems in the browser's interpretation of the code (Zeldman, 2007).

Coded properly, XHTML and CSS are powerful tools for designing Web sites. When designing a site, it is useful to validate the code for XHTML and CSS to help ensure that the code meets the standards set forth by the WC3 and presumably ensures broad compatibility with various browsers and devices. The WC3 offers both XHTML and CSS validation services online. The tools allow the designer to upload a page and check for errors in coding. When errors are found, the services provide details on the error and possible solutions.

For the purpose of this project, further reference to XHTML will be reduced to HTML as not to migrate back and forth between the two terms. Both are markup codes used to

create Web pages, and XHTML is often simply referred to as HTML in common language. Now that these basic terms used in Web design are fully explained, it is time to move forward by reviewing tools that promote consistent Web design.

Web Design Tools

Templates

Zaner (2006) defines templates as "web pages or listing of web page code that contain the HTML code common to the pages used on a website and clearly identify where content unique to individual pages should go" (p. 16). The implementation of templates by universities for their entire Web presence is increasing in popularity. An online search by the author for "Web templates" at each of the 23 CSU campuses on October 17, 2008, indicated that 17 of these campuses use Web templates and offer varying degrees of support. Due to the size of many university Web sites, design and maintenance responsibilities are often broken up and dispersed through several departments. The personal experience through the author's employment at two CSU campuses confirms that the majority of individual colleges and departments maintain the content and design of their Web sites. While departmental sites are independently

designed and maintained, they come together and contribute to the make up of the entire Web site of the university. The use of common templates help unify the Web site as a whole. Zaner (2006) indicates that many organizations utilize collections of templates to provide page layouts to their employees along with instructions on proper use.

There are concerns to consider when implementing templates. One concern is how much space allotment the content area of the Web site receives. If the majority of the design space is tagged for branding and navigational features, then less space is left for the content, which is presumably the reason why a site is visited. For instance, libraries might have special needs when it comes to integrating outside database services into the content size constrictions of a template (Peterson, 2006). Navigational features such as site search tools can easily be confused with library database search tools. Presenting multiple search features within the same framework can confuse and frustrate the end users if what is being searched is unclear (Peterson).

Another major concern is the time and training involved in implementing templates university-wide. When dealing with the number of staff and faculty who maintain

Web pages on university campuses, extended efforts are needed to train them on the proper use of templates and the benefits of their implementation. However, university employees can benefit from the expertise and development efforts of the template designs because it saves time by providing a pre-designed compliant-ready layout to pour their Web content into. The following two sections present different methods of creating Web site templates.

Table-Based Layouts

As graphic designers began designing for the web, they quickly discovered the need for more control in the Web design process. This author's personal experience with a transition from print design into Web design lead to frustrations in the area of lack of design control. Software developments helped ease that transition. HTML was very different from print design because precise control over how design elements displayed on the page was difficult to achieve in the new design process of creating HTML pages. Popular Web design software emerged in the late 1990s with a WYSIWYG (what you see is what you get) interface that resembled applications designers were using for print design. Adobe GoLive introduced a grid system that allowed users to drag and drop design elements on a

page. The grid provided an exact location that anchored design elements in a fixed location. Adobe GoLive then automatically converted the grid into an HTML table holding the images and design of the page together. A table is similar to a spreadsheet that holds bits of data in cells. When all of the cells come together, the design of the page is pieced together. Other applications, such as Adobe Photoshop and Macromedia Fireworks, allowed designers to precisely layout Web pages in a familiar process as print design. These applications allowed designers to create an image of the Web page and then *slice* the image up into a table, referred to as a *table-based layout*. These applications then generate the HTML page for designers leaving little coding done by hand. Reed and Davies (2006) explained, "the design process changed to allow designers to move directly from a mocked-up design to a finished and coded layout with only a rudimentary understanding of the underlying code" (p. 182). This slicing process provided a level of control that designers appreciated and the table-based layout became the prominent way for designers to create Web sites. It allowed many print designers to transition into Web designers; however, the ease of use did not create a better solution.

Several problems exist with table generating software applications. The automated process generates a considerable amount of unnecessary HTML coding. Download time is increased due to the excess code that must be downloaded and processed by browsers, and potentially causing problems with the way the page is generated depending on the browser that is being used (Clark, 2003). Another problem with the slicing table generation process is that if changes are needed in the design, including navigational name changes, the original image must be updated, re-sliced and the table generated again. If table-based layouts are used, then the table needs to be recreated and all of the pages need to be updated and uploaded to the server. This process consumes time and resources, resulting in higher design and maintenance cost. Another problem with this process is a decrease in accessibility in the automated creation of table-based layouts. While software has improved over time, Hackett, Parmanto, and Zeng (2004) reported that between 1997 and 2002, Web sites have progressively reduced accessibility due to the increased use of various communication methods, such as tables, streaming video, and programming applets, to organize complex data. They reported that when the Web

was first introduced, text-to-speech software made the internet accessible for most users. Clark (2003) explained that table-based layouts can be made accessible by conforming to WAI standards of ensuring the content makes sense when run together with no structure. However, he also detailed the difficulty users of some screen readers can have with the understanding of tables used for layouts as they have to navigate through the structure of the table, which is invisible to sighted users. Some mobile devices have trouble rendering tables in a way that is truly functional. Table-based layouts do not always scale down to small browsing devices like PDAs and smart phones, which have varying screen resolutions and browsing software. When table-based layouts are used, users are required to scroll horizontally to see the full width of the page, but when CSS are used instead, this scrolling is eliminated (Germonprez, Avital, & Srinivasan, 2006). The table-based layout are time consuming to update and create usability problems for end users. Other techniques, such as CSS, provide a better solution for Web design and maintenance.

Cascading Style Sheets (CSS)

CSS have become the gold standard of Web site design. They can define the layout presentation of the pages as

well as the typographical styles of the content, while the content is kept separate in HTML. CSS are supported by modern browsers and accommodates wider Web accessibility standards outlined in Section 508 (Zeldman, 2007). By utilizing CSS throughout the entire site, a consistent implementation of a defined navigational and typographical structure ensures uniformity. Nielsen (1997) describes CSS as an extension of HTML allowing the designer to control the design of the site through the application of defined styles. The strength of CSS is that by applying them universally to an entire site through an external linking technique, the process of updating style changes in the future can be implemented by redefining the syntax without touching any of the HTML code. Once the revised style sheet uploads to the Web server, the format of the entire site is adapted to the new style sheet. Another benefit of the externally linked CSS are that they is downloaded by the browser once and remains in the cache to be remembered when accessed with the sequential Web site pages. This process reduces the time needed to load each page. The CSS are loaded once and then remembered for use during that visit.

CSS provide increased network speeds over table-based layouts for several reasons. Germonprez et al. (2006) stated that "these advantages included lower bandwidth needed to deliver content (lowering page size), reduced CPU utilization (both client and server), and improved rendering times, all of which represent improvements in any computing domain" (p. 67). They further explain that CSS reduce the number of images, tables and repetitiveness of presentation rules. All of these extras that are used in table-based layouts require more time for the Web page to download and for the browsers to render. In 1997, Nielsen, Gettys, Baird-Smith, Prud'hommeaux, Lie, and Lilley indicated that style sheets provided promising performance improvements by reducing the bandwidth needed to download and display a Web page. Germonprez et al.'s (2006) study of CSS delivery speeds confirmed this previous researched report that "page sizes consistently were reduced by roughly 50%" (p. 61) and identified that CSS were a better tool to format content for mobile computing devices because they increased usability.

Separating the structure from the presentation also allows for "preservation of device independence, document searchability and information reuse in general" (Lie &

Saarela, 1999, p. 96). The best practice is to create one CSS file and not to create a CSS file for each browser. Browser-specific CSS files defeat the purpose of having one style sheet to update. Placing CSS inline with the HTML coding also defeats the purpose of utilizing style sheets. CSS placed into HTML requires it to be added to each Web page and does not provide the advantage of being able to update the style sheet in one central location to make changes to an entire site, nor does it take advantage of caching style sheets into browser memory. While CSS has much strength, it is not without weakness.

A potential problem with using CSS are the learning curve for the language; for a designer to fully utilize the benefits of CSS, it takes some time to learn the proper way to implement them. CSS are a formatting language that needs to be learned. This change can be challenging for some who have become accustomed to the familiarity of creating an image that is sliced into a table-based layout. Some turn to application tools found online which claim to convert table-based designs to CSS. Mao, et al. (2007) explain:

Existing tools for automating the transition to stylesheets provide little help, converting page-by-page using a flattened structure and local inline

style rather than a common CSS stylesheet. This approach ignores hierarchical structure and defeats the main purpose of moving to the new standards, losing all of the advantages. (p. 1)

It is much more advantageous to design a site from scratch using CSS, than to try to automate the process of converting an existing table-based site to CSS. Site designs must be rethought and approached from a new direction. The move to CSS has been a slow, gradual process mainly due to lack of browser support.

While CSS are highly supported in modern browsers, the implementation of full CSS has been limited. In 1997, 4.0 browsers, like Netscape Navigator and Microsoft Internet Explorer, began to support CSS (Lie & Saarela, 1999), but in a very limited way. This implementation was the beginning of a long road to browser support of CSS because each browser interpreted CSS slightly different and often not well enough to support institutional or public Web sites. As browsers evolved, the support for CSS improved. Clark (2003) explained, "there are now enough browsers available with reasonable standards compliance that real-world sites can finally get away with coding to those standards" (p. 43). The inconsistent CSS support in

browsers in the past was a common reason given for not using this standard compliant method to design Web sites; however, this excuse no longer holds valid (Zeldman, 2007). Internet Explorer 7, Internet Explorer 6, and FireFox captured over 90% of browser use in October 2007 (Refsnes Data, n.d.). It is time for all those holding onto the method of slicing table-based layouts to leave it behind and fully embrace CSS as a layout design process.

Zeldman (2001) describes the benefits of moving from tables to CSS for designing Web sites: "Those who think of the web primarily in terms of graphic design will need to enlarge their views, but they won't lose their talent or their vision in doing so, and they will gain tremendously in control and flexibility" (sec. 23, para. 2). He further goes on to say, "ultimately it is a better, less-frustrating, more powerful way to build websites" (sec. 23, para. 3). The benefits of CSS far outweigh the learning curve of fully implementing a CSS layout design. The site is easier to maintain and to change, renders faster for viewers, and is more accessible to those with disabilities and internet devices such as PDAs, smart phones, and Web search engines. Web design is a form of communication and

for those who want to open their communication up and be accessible to *all* types of users, CSS is the way to go.

Web accessibility for disabled users has increased awareness for the need to communicate with all users, including those with disabilities, mobile internet devices, and even internet search engines that provide access to all types of internet users. Web site design standards allow designers to communicate with more users, regardless of how they interact with the Internet. Designers need to migrate from using table-based layouts to designing with CSS in an effort to broaden their communication potential online. The use of standardized CSS templates creates consistency in navigational structure, design themes, and branding efforts, potentially resulting in a more effective communication tool.

The following chapter will address the methods used to promote a consistent brand identity for the Web presence of CSUSB through the creation of standardized ready-to-use Web templates.

CHAPTER THREE

METHOD

This project focused on the creation of templates using XHTML for semantic content structure and CSS for presentation of the content and layout design. These CSS layout-based templates can be utilized by the campus community to promote a unified visual identity for the online presence of the university. The goal of the project was to create university branded ready-to-use templates that meet all accessibility standards as outlined in Section 508, meet university identity standards that are under development by the Office of Public Affairs, and meet Web standards that are under development by ACM.

Procedure

The templates have been designed and constructed using a combination of software programs including Adobe Photoshop and Adobe Dreamweaver. These are industry standard design applications accessible to CSUSB through academic discounting. Along with this software, CSS coding defines the style and presentation of the pages, and XHTML defines the structure of the content. A combination of a

Dual 2.3 GHz PowerPC G5 Macintosh, a 2 x 2.8 Ghz Quad Core Intel Xeon Mac Pro, and a 2.8 GHz Intel Core 2 Duo iMac computer all running OSX (10.5) was used to create the templates. Basic functionality of the templates was tested on a PC using Internet Explorer 6, Internet Explorer 7, and Firefox and tested on Macintosh computers using Safari, and Mozilla. Generation three, four, and five browsers were not tested due to the low volume of users of those browsers as determined by Goggle Tracking, a tracking devise installed on the university's homepage (E. Kahuthu, personal communication, March 15, 2007).

The author of this project works for CSUSB in the Office of Public Affairs and serves on various committees that have impact on the identity of the university. The CSUSB Visual Identity Committee was charged with the creation of a new logo and visual identity for the university along with the authorship of a visual identity standards manual that will outline the proper use of the logo and identity standards in all communication channels for the university. The CSUSB Web site committee was a preliminary committee charged with outlining possible Web design standards and design solutions for the homepage of the university. Themes in the university homepage design

were carried over into this template design. Participation in these committees provided vital information on the needs of the campus and the guidelines under development.

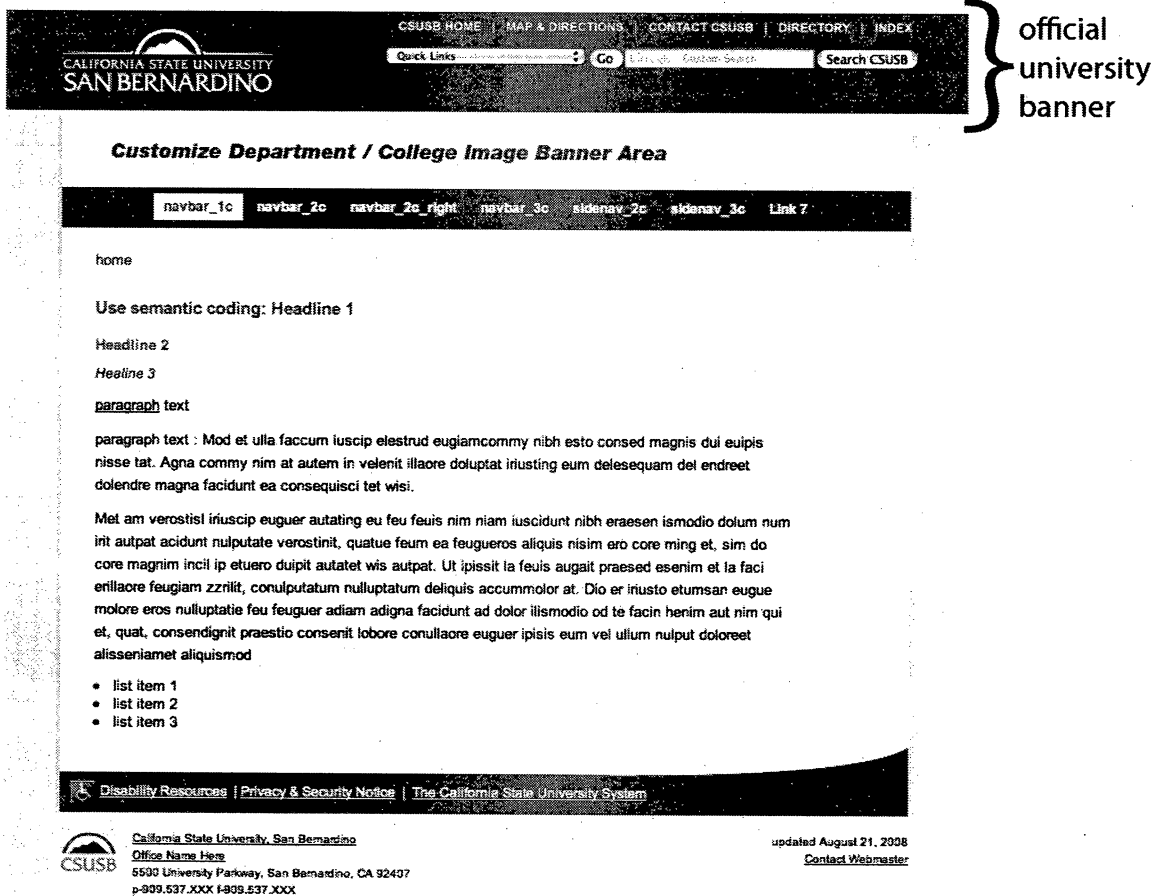
Template Design

One of the major goals of the templates was to create a design that carries the university homepage branding elements, yet gives webmasters the flexibility to adjust the design to fit the specific needs of the Web site at hand. Elements carried over from the university homepage promote a unified branded effort. These elements include the required university banner at the top of the page (see Figure 1), customizable image banner area, consistent graphics elements, and site navigation options. The university banner is a required page design element outlined in proposed Web standards for the university that is designed to be identical across all university Web sites (Ross, 2008). The code and instructions for use of the banner are provided through the ACM Web site (<http://acm.csusb.edu/Services/webdevelopment/resources.html>). The snippet of code that is distributed for pasting into HTML pages allows the banner to reside in one location on ACM's Web server and then be pulled into other Web sites

when viewed online. This placement allows for the HTML page to be updated by ACM in one location resulting in a universal update to all Web sites that have included it. This banner provides identity to the university through the official university logo and the use of the university colors. The banner provides consistent access to several university wide resources, which include links to the university homepage, maps & directions to the university, basic contact information, a directory, and site index. It also provides quick links and a university-wide search feature.

By implementing these unifying navigation elements throughout all sites within the university, a unified Web presence is promoted. The consistent navigation is important due to the uncertainty of how the viewer will reach any particular Web page. Schmitt (2008) emphasizes the importance of Web sites maintaining a prominent navigational structure throughout all pages of a site for this reason. The university banner is the first step in implementing a global navigational structure for the university, allowing users to reference the same links from all pages regardless of where the users have navigated.

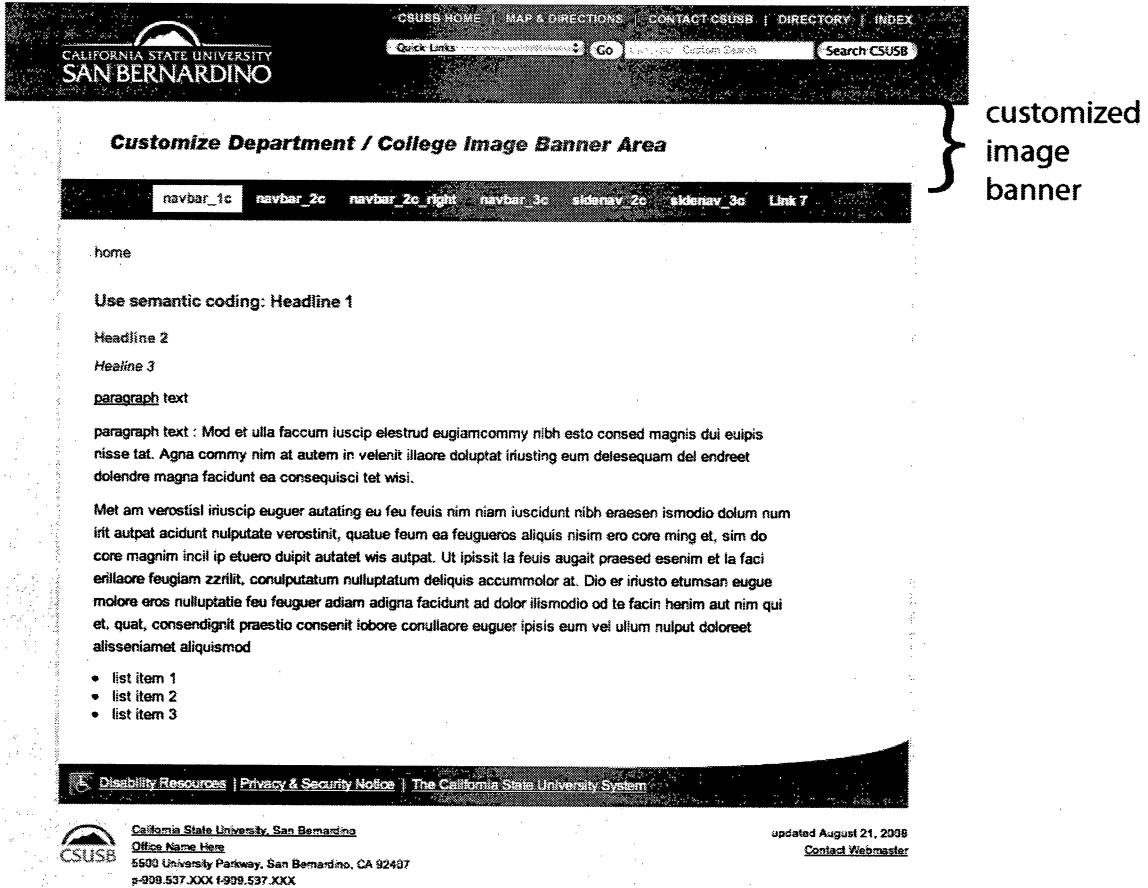
Figure 1. Template - Official University Banner



The next area of the template design allows the department or unit of the university to be identified within the university (see Figure 2). This area is a 750 pixel wide image that requires customization in each specific Web site. The height of this image can vary from site to site and is left to the webmaster to determine the height for each site. It is recommended that Adobe

Photoshop be used to create this image and that the image includes text to identify the department or unit for the specific Web site. The template is designed to allow multiple images to rotate within this area each time the page refreshes within the browser. This rotation mimics that of the homepage, but is done in a manner that allows the webmaster to simply place the rotating images into a folder and not have to alter any code. This image allows the Web site to take on its own look, while still adhering to the look and feel of the university brand.

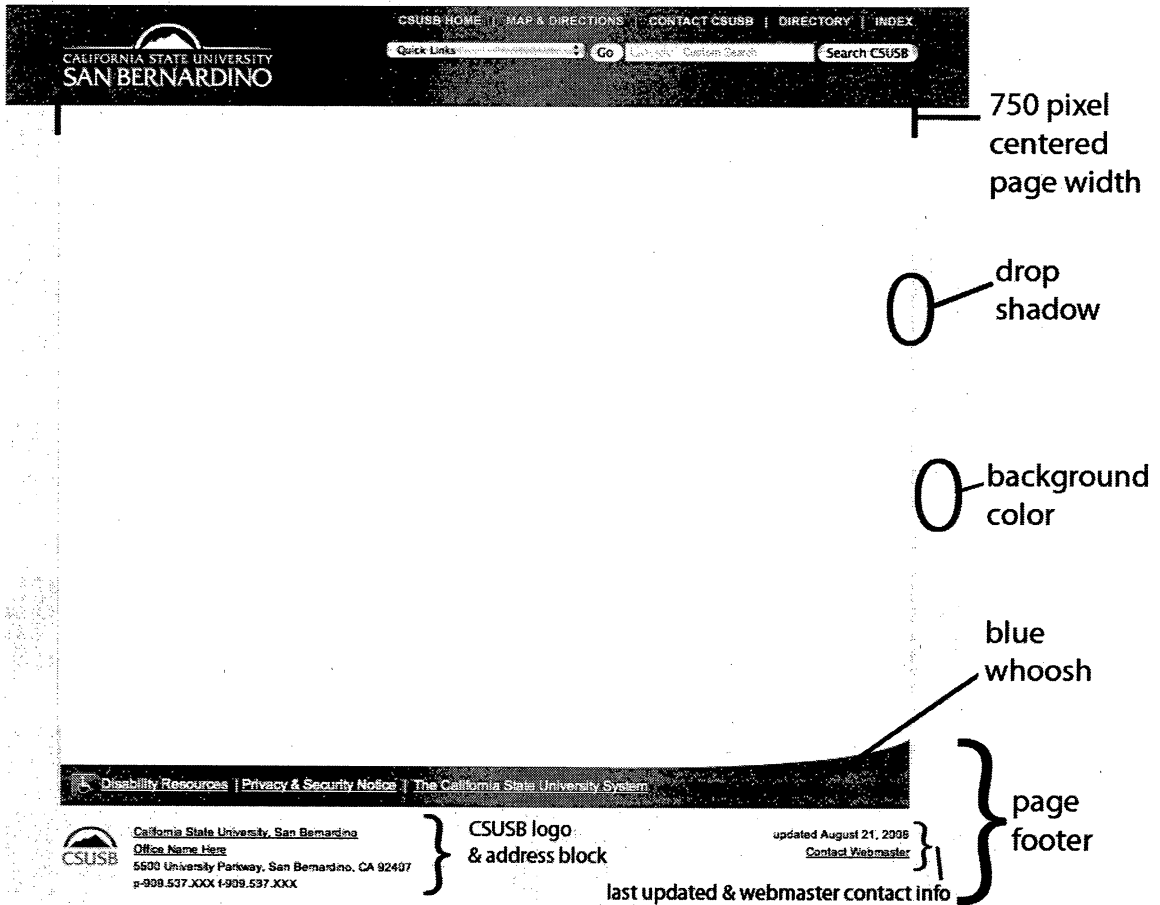
Figure 2. Template - Customized Image Banner Area



The template has other design elements that mimic the university homepage, which can be seen below in Figure 3. The template content area is 750 pixels wide and centered within the Web browser. The background color and drop shadow, which overlays the background color, are identical with the university homepage. The page footer closely resembles that of the homepage as well. The blue whoosh

shape is used as a background to three required links, mimicking the homepage. The small CSUSB vertical logo starts the university address block on the left, which is followed by the last updated date and webmaster contact information on the right. These design elements are intentionally carried over from the university homepage to reinforce the design used on the homepage. These similarities allow the user to easily recognize that they are viewing a CSUSB Web page. With the use of a consistent template frame, viewers do not need to question where they are or be confused as to whether they have left the university or not.

Figure 3. Template - Page Content Highlights




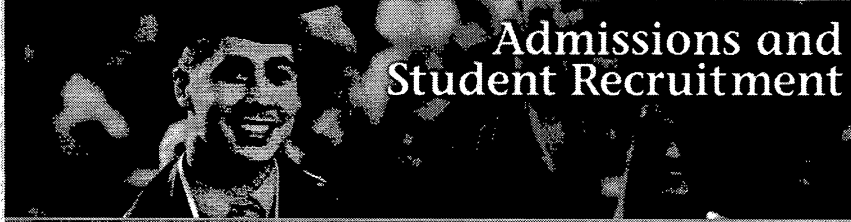
The templates also provide flexibility in their use of navigation. The multitude of Web sites that fall under the domain of CSUSB present varying needs in navigation. Some sites can be as large as 1,000 pages while others only consist of one page. To accommodate the navigational needs of the university, the templates are designed with a choice of horizontal navigation, left-side navigation, a

combination of the two similar to the university homepage, and an optional right-side column to accommodate content needs. Appendix C shows each template navigation option. All of these navigation options fall inline with the navigation established on the university homepage. Aside from the navigation used in the university banner at the top of each page, the homepage navigation starts with a horizontal navigation that is supplemented with a left-side navigation. These two navigational structures are recommended in the proposed university Web standards (Ross, 2008). The third option of a right-side column can be used to further navigate through pages as seen in the Admissions and Student Recruitment Web site in Figure 4. This right-side column can also be used to display additional information, such as the spotlights, as seen on the *About CSUSB* page in Figure 5. Selecting a navigational structure from these options and applying it to a Web site maintains the consistent navigational structure that allows users to locate and process information faster (Krug, 2005).

Figure 4. Admissions and Student Recruitment Web Page

[CSUSB HOME](#) | [MAP & DIRECTIONS](#) | [CONTACT CSUSB](#) | [DIRECTORY](#) | [INDEX](#)





Admissions and Student Recruitment

[Freshmen](#)
[Transfer](#)
[International](#)
[Graduate & Credential](#)
[Non-Traditional](#)
[Parents & Family](#)
[Counselors](#)

[home](#) > [freshmen](#) > [student life](#) > [housing](#)

Exploring

- [Why CSUSB?](#)
- [Majors & Programs](#)
- [Cost of Attending](#)
- [Visit CSUSB](#)
- [Student Life](#)
- [FAQs](#)
- [Prepare for College](#)
- [Request Information](#)
- [Become a VIP](#)

How To Apply

- [Applying at a Glance](#)
- [Do I Qualify?](#)
- [What if I Don't Qualify?](#)
- [Apply Online](#)
- [Get Help from an Admissions Counselor](#)
- [FAQs](#)
- [Financial Aid](#)
- [Additional Resources](#)
- [Deadlines](#)
- [Check your Application Status](#)


After I'm Admitted

- [MyCoyote](#)
- [Requirements](#)
- [Academic Information](#)
- [Academic Advising](#)
- [Student Services](#)
- [Veterans Resources](#)
- [Student Life](#)
- [Forms Page](#)

Housing & Residential Life

Living on campus is one of the easiest ways to become involved at CSUSB. The Villages offers on-campus housing for students in three residential environments: Serrano Village, Arrowhead Village and University Village. Living on campus is a significant part of the CSUSB experience for approximately 1,500 students.


Visit [Housing & Residential Life](#)



More Student Life

- [Housing](#)
- [Student Union](#)
- [Sports](#)
- [Be Part of a Group](#)
- [Recreation Center](#)
- [Cultural Events](#)
- [Coussoulis Arena](#)
- [Regional Opportunities](#)

[Disability Resources](#) | [Privacy & Security Notice](#) | [The California State University System](#) | [Contact Admissions](#)



California State University, San Bernardino
 Office of Admissions & Student Recruitment
 5500 University Parkway, San Bernardino, CA 92407
 p-909.537.5188 f-909.537.7034

updated January 30, 2008
[Contact Webmaster](#)

right-side column containing additional site navigation

Figure 5. About Cal State San Bernardino Web Page

CSUSB HOME | MAP & DIRECTIONS | CONTACT CSUSB | DIRECTORY | INDEX

Quick Links

About CSUSB Admissions Athletics Colleges Library Majors & Programs

About CSUSB

Facts and Stats
 CSU Information
 History
 Economic Impact
 Academic Calendar
 Administrative Divisions
 Public Affairs
 Palm Desert Campus
 Robert V. Fullerton Museum


President's Office
 Vision & Mission Statement
 Strategic Plan
 University Organizational Chart

CSU Adaptive Reader

Word Viewer

Did you know?
 Cal State San Bernardino supports more than 10,000 jobs in the local region.

In the Spotlight



CSUSB President Karnig Receives Award from Bishop Barnes

Albert K. Karnig, president of California State University, San Bernardino, was among seven individuals honored with the "Amar es Entregarse" Award from Bishop Gerald Barnes, leader of the Roman Catholic Diocese of San Bernardino.

MORE...

A young, vibrant university, California State University, San Bernardino is one of the fastest growing universities in California, largely because of its rapidly expanding service area of San Bernardino and Riverside counties, which covers 27,000 square miles – a territory larger than 10 states in the nation. More than 65,000 alumni hail from CSUSB, including many who work in Southern California and make a major positive impact on the economy. Founded in 1965, CSUSB currently enrolls more than 17,000 students and employs more than 2,100 faculty and staff.

Located equidistant between Los Angeles and the Palm Springs area, the university offers more than 70 traditional baccalaureate and master's degree programs and a wide variety of education credential and certificate programs, including many that have earned national recognition. Its business and entrepreneurship programs are nationally respected, as evidenced by CSUSB's 2006 ranking of fourth in the United States for graduate entrepreneur programs. Cal State San Bernardino is distinguished as the first Inland Empire university with prestigious national accreditation for its College of Business and Public Administration.

The university's programs in computer science, geographic information and decision sciences, psychology, health, kinesiology, English, public administration, accounting and finance, and many others are all highly regarded. The university is one of the nation's largest teacher-training institutions, and 95 percent of the College of Education's graduates with teaching credentials are employed full-time a year after graduation. Moreover, the College of Education now offers the university's first doctoral program, an Ed.D. in educational leadership. CSUSB's extended education programs in business writing and language skills, technology, entrepreneurship and conference management are some of the state's busiest.

The university's student population is one of the most diverse in California, with a student enrollment so diverse that there is no majority ethnic group on campus.

The growth of the region has meant continued capital development for the university, which continues to construct new facilities to provide students, faculty and staff with an excellent learning and working environment equipped with superior technological capabilities. Recent projects include the new Chemical Sciences Building, Student Recreation and Fitness Center, University Village student housing complex and the expanded Santos Manuel Student Union. The biological sciences and physical sciences buildings have been remodeled, while the university will soon open a new College of Education Building, two new parking structures and a new perimeter road to serve the 430-acre campus.

CSUSB claims the largest indoor arena in San Bernardino and Riverside counties (Coussoulis Arena) and a renowned visual arts gallery and museum in the Robert V. Fullerton Art Museum.

Disability Resources | Privacy and Security Notice | The California State University System

California State University, San Bernardino
 5500 University Parkway, San Bernardino, CA 92407-2393
 909.537.5900

Updated August 13, 2009
 Contact Webmaster

The color palette of the design is pulled from the university homepage. This guarantees consistency in the

tone of the graphics presented in the design. The visual identity manual for the university presents an optional secondary color palette. The colors for the homepage were selected with the secondary color palette in mind. It is acceptable to modify some of the colors; however, care should be taken to maintain the same overall tone. Examples of acceptable color modifications include, changing the background color of the side navigation, changing the colors of the semantic headlines, and changing link behaviors. Colors that should not be changed include the university banner, background color of the page, and logo colors, because these are primary identity clues that establish the presence of the university. The overall color scheme should match that of the homepage and contribute to the "site's personality" (McIntire, 2008). As consistent, easy-to-understand navigation and visual design elements come together to create the overall presence that can be seen throughout all of the Web sites of CSUSB, the brand value will be enhanced (Cocoran, 2007).

Template Development

The HTML files result in Adobe Dreamweaver templates that are intended to be used to create other pages within a

Web site. Each template is labeled with its primary intended navigational use, followed by the number of columns in the layout, such as navbar_1column.dwt (see Table 1 for complete listing). All CSS files are contained within a folder labeled *css*. All images are contained within a folder labeled *img*. Supporting image files are also provided in original Photoshop files with layers enabled to allow webmasters to modify colors and text as needed. Coding comments within the HTML and CSS files give instructions for making changes within the page. An example of coding comments can be found in the HTML code for the rotating image, which identifies the Web site. These comments give instruction on where to place the images and other notes: *<!-- place rotating image banners into /img/banner_rotate folder. There is no need to change the link below. PHP scripting will rotate all images in this folder. -->* and *<!-- image id and javascript fixes caching of random image in FireFox -->*. The template files and supporting graphics are included on the data CD in Appendix A.

Table 1. Name and Description of Dreamweaver Template

navbar_1column.dwt	Horizontal navigation bar with a 1-column layout
navbar_2column.dwt	Horizontal navigation bar with a 2-column layout; this layout includes a left-side navigation column
navbar_2column_right_sb.dwt	Horizontal navigation bar with a 2-column layout
navbar_3column.dwt	Horizontal navigation bar with a 3-column layout; this layout includes a left-side navigation column
sidenav_2column.dwt	Left-side navigation with a 2-column layout; this layout excludes the horizontal navigation
sidenav_3column.dwt	Left-side navigation with a 3-column layout; this layout excludes the horizontal navigation

CHAPTER FOUR

DISCUSSION AND RECOMMENDATIONS

Discussion

Universities face many challenges in the Web 2.0 age of today. The younger generations expect to be able to gather information and communicate via the internet in a fresh and sophisticated manner. Gone are the days of the internet being a communication channel which simply publishes the content of a brochure online. Web developers need to consider the design of the site and how it will affect the end users. Viewers have expectations to be able to determine where they are, how to navigate through a site and be able to find information they are looking for. These expectations extend to all viewers, regardless of ability or how they are accessing the internet. When many smaller sites make up a larger Web site, branding the Web site becomes more difficult due to the size of the entire site and the number of webmasters who contribute to the site.

Universities are faced with challenges of branding, just as corporations are. A desirable and believable brand needs to be communicated consistently from the entire university. Hatch and Schultz (2003) stress the importance

of branding an entire company on a holistic level.

Universities function on a similar level where they need to brand the university as a whole and not through individualized segments of the university. It is the holistic view of the branding strategy that leads to differentiation among the competition. When positioning a university brand, strategies must be developed to address the entire university and "gain organizational-wide support of the brand" (Hatch & Schultz, 2003). It is counterproductive to have one college or department communicating an entirely different image of the university.

In reference to the need to communicate consistently, Karnig has focused efforts on Web site communication because of the heavy reliance prospective students and parents place on them when selecting a university (Cal State San Bernardino introduces new Web site, 2008). Universities need to come together and present one clear and coherent voice (Tan, 2001). CSUSB is not alone in their desire to present a unified brand identity on the internet. Universities around the country have recognized the need to communicate a consistent brand identity online through various methods. Montana State University established branded Web site templates (MSU Web communications, 2006).

The university of Utah pushed for a unified visual image and communication strategies through all of their communication channels including the internet (The University of Utah brand identity Web site compliance, 2006). A similar focus has been established at the University of Wisconsin Oshkosh with the creation of an integrated marketing and communications team to manage their online brand (Hunt, 2008).

The focus on branding university website is warranted. Website are the first form of communication that universities have with the majority of their audiences (Peterson, 2006). These viewers will make their first impression of the university based on the visuals present on the Web site. Lindgaard, et al. (2006) indicate that this is done in as little as 50 milliseconds. And because there is no way to determine how a user will enter a university Web site, every page should be treated as, and given the importance, of the homepage (Schmitt, 2008). The first impression of viewers is influenced by color schemes, layout design and graphic images that all contribute to the brand image (Cocoran, 2007).

With the launch of a redesign of the homepage of CSUSB in January 2008, the university started a process of

changing the look and feel of their Web site. The goals included focusing on the Web as a marketing tool through the use of branding and making a site more functional through the use of navigation and accessibility standards (S. Robinson, personal communication, June 25, 2007). After the homepage redesign, the process continues one site at a time. Knowing that all sites cannot be redesigned at the same time by ACM due to staff limitations, these templates provide a way to spread the university brand across the Web sites of CSUSB in a much faster manner. These templates not only unify the presentation of the university logo, but also establish baseline elements that create unifying structural elements that promote the look and feel of the new university homepage.

The templates created for this project address the needs of unifying the brand communicated from each smaller site, establishing consistent graphic cues and navigational structures. The use of these templates demonstrates the ability to carry the university brand from the CSUSB homepage to other Web sites within the university.

The issue of branding a university is coming to the forefront of university marketing efforts. As this research has highlighted, many universities are taking steps to

brand their university and attempt to establish methods that will allow them to communicate a single message from the entire university. This project focused on the internet as one communication channel and unifying the brand identity of that one channel. The author recognizes that this is a starting point to a much larger task of unifying all communication channels.

Evaluation

The success of the final project was determined not only by meeting design and Web standards, but also by the utility of the templates. The templates' coding was evaluated using the W3C code validation services, which ensures that the code is valid and does not break any rules set forth by the W3C recommendations. CSS Validation Service (<http://jigsaw.w3.org/css-validator>) and W3C Markup Validation Service (<http://validator.w3.org>) are the specific validation services used. Each template successfully passed the XHTML: 1.0 Transitional document type. All CSS files were found error-free according to CSS level 2.1 standards. Visual checks were done to ensure consistency in the presentation of design elements in Internet Explorer 6, Internet Explorer 7, and Firefox on a


PC and using Safari, and Mozilla on a Macintosh computer. The template pages were then run through the manual evaluation process established by ACM to verify that they meet 508 accessibility standards.

To ensure that the templates translated into an actual Web site, the templates were then implemented in a university Web site to demonstrate their utility and flexibility. The first was a redesign for the Office of Public Affairs news Web site (<http://news.csusb.edu/>). The side navigation layouts were used to create the site. The homepage utilized the 3-column template, while the rest of the site used the 2-column template (see Figures 6 and 7). While the site used the university branded templates to provide a basic structure for the page and common design elements found on the university homepage, many elements changed to give this site a sense of uniqueness while still conforming to the university brand. The side navigation as in template `sidenav_2column.dwt` was implemented for the links to pages within this site, but beneath this navigation, boxes were added to group links that go to external Web sites outside of the news Web site. The background color of the side navigation was changed using the provided Photoshop files. The image banner conformed to


all of the standards outlined in the templates by adding its own image and displaying the name of the Web site. This image appears to curve into the content of the page; however, the image is really a rectangle with the side navigation and content color backgrounds filling in under the curve. This provides an excellent example of how subtle design changes can allow this site to have a uniqueness of its own while carrying all of the elements that tie it to the brand identity of the main university Web site. When users navigate from the university homepage to the news Web site, they will not question if they have left CSUSB or not. Consistent identity treatments, page structure, color usages, and an overall tone provide users with a sense of ease and assurance, while reinforcing the brand identity of the university.

Figure 6. News.csusb.edu Home Page

[CSUSB HOME](#) | [MAP & DIRECTIONS](#) | [CONTACT CSUSB](#) | [DIRECTORY](#) | [INDEX](#)



[Quick Links](#)



news.csusb.edu

News Search

CSUSB News

- [Top Stories](#)
- [Events Calendar](#)
- [CSUSB Making Headlines](#)
- [Media Releases](#)
- [Faculty Experts & Speaker Bureau](#)
- [Do-It-Yourself News Release](#)
- [Local Weather](#)
- [Local Traffic](#)

Campus Connection

- [CSUSB Magazine](#)
- [Coyote Athletics](#)
- [Coyote Chronicle](#)
- [Coyote Radio](#)
- [CSUSB Alumni Association](#)
- [CSUSB Home](#)

Contact Us


CSUSB Office of Public Affairs
909.537.5007 ph
909.537.7043 fx

[Download Acrobat Reader](#)

Top Stories: August 26, 2008

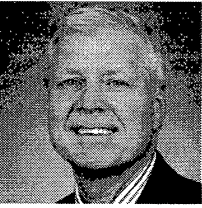
Perseverance pays off for CSUSB graduate student
Aug. 26, 2008

For more than 30 years, Gina Hanson endured more obstacles than most people encounter in a lifetime. Foster care, extreme poverty and years of bouncing on and off the streets left her with a broken spirit and feelings of worthlessness. These days, the 31-year-old Cal State San Bernardino graduate student is singing a different tune. She is a recipient of the 2008-2009 William Randolph Hearst/CSU Trustees Awards for Outstanding Achievement.



College of Arts and Letters names Richard Jarvis as development director
Aug. 26, 2008


Richard Jarvis has been appointed as director of development for the Cal State San Bernardino's College of Arts and Letters. Jarvis, who earned his B.A. in education administration from Vanguard University in Costa Mesa, brings an extensive array of fundraising experience in both private and public organizations.



College of Social and Behavioral Sciences appoints new development director
Aug. 26, 2008

Enrique Gonzalez-Salgado has been named the director of development in the College of Social and Behavioral Sciences at Cal State San Bernardino. Gonzalez-Salgado was formerly with Cal State Los Angeles as a development director in the university development office.

This week: Coyotes kick off 2008 fall season



Events Calendar

August

- 12 [2008 Orientation- Clus and Organizations](#)
- 19 [Special Education Group Advising *](#)
- 20 [Blood Drive *](#)

September

- 16 [Transfer Orientation](#)
[Transfer Orientation](#)
[Transfer Orientation](#)
[Transfer Orientation](#)
[Special Education Group Advising *](#)
- 27 [Educational Counseling Program Orientation Meeting](#)

October

- 1 [Grad School Information Fair](#)
- 2 [Back to School-Venice Beach Style](#)
[Back to School-Venice Beach Style](#)
[Back to School-Venice Beach Style](#)
[Back to School-Venice Beach Style](#)
[Speaker on it Voter Registration](#)
- 7 [Wellness Workshops *](#)
[Meet the Firms](#)
- 12 [WWE presents RAW LIVE!](#)
- 14 [Hip Hop, Beyond Beats and Rhymes](#)
[Wellness Workshops *](#)
[Educational Counseling Program Orientation Meeting](#)
[NPHC Greek Mixer](#)
- 15 [Thesis/Project Workshops for 2008-](#)

Figure 7. News.csusb.edu Inside Page

The screenshot shows the news.csusb.edu website. At the top, there is a navigation bar with links for CSUSB HOME, MAP & DIRECTIONS, CONTACT CSUSB, DIRECTORY, and INDEX. Below this is a search bar with a 'Go' button and a 'Search CSUSB' button. The main header features a large image of students walking on a campus with the text 'news.csusb.edu' overlaid. The main content area displays a news article titled 'THURSDAY: Air Force ROTC to hold orientation for CSUSB students' dated 'Sept. 4, 2008' and written by 'Public Affairs Staff'. The article text describes the orientation event on Thursday, Sept. 11, at Cal State San Bernardino. To the right of the text is the Air Force ROTC logo. On the left side, there is a sidebar with a 'News Search' box, a 'CSUSB News' section with various links like 'Top Stories' and 'Events Calendar', a 'Campus Connection' section with links like 'CSUSB Magazine' and 'Coyote Athletics', and a 'Contact Us' section with contact information for the Office of Public Affairs. At the bottom of the page, there is a footer with 'Disability Resources | Privacy & Security Notice | The California State University System' and contact information for the Office of Public Affairs, California State University, San Bernardino, including the address, phone number, and email address. The date 'updated September 4, 2008' and a 'Contact Webmaster' link are also present.

The Office of Public Affairs is planning on implementing these templates in other Web sites, including the CSUSB magazine Web site, the public affairs Web site, and the university visual identity standards Web site. These sites are expected to be published online before the end of the year.

Limitations of the Project

This project presents three foreseeable limitations. First, careful consideration has been taken to follow all Web and design standards that are currently being developed for the university. During this transitional time, the university is currently developing visual identity standards and Web standards through various committee processes. This project follows the standards as they are currently written; however, future changes to standards will need to be addressed in future generations of these templates. In other words, the templates will need future updating based on changes to the visual identity standards outlined by the visual identity committee. Other changes could be necessary based on any forthcoming updates to the Web standards, which outline basic Web design guidelines and Web accessibility mandates. It is important to keep the

templates current with university standards so that the tools do not become outdated and counter productive to the marketing goals.

Second, the author assumes that webmasters have access and knowledge of Adobe Dreamweaver and Adobe Photoshop. Familiarity with creating a site with Adobe Dreamweaver templates will ease the implantation of the templates into a Web site. A graphic image, usually created in Adobe Photoshop, will be necessary to use as a visual banner to identify the unit or department in the Web site. The customization of this graphic allows the unit or department to be identified within the structured identity of the university. Unfamiliarity with these software applications could increase the amount of time spent implementing the templates and require additional training in the software.

Third, for the templates to be made widely available for all webmasters at the university, they need to be distributed in a downloadable format from ACM. While this complete project will be provided to ACM, the author cannot guarantee that the templates will ultimately be made available for download as a Web development tool. It is foreseeable that if ACM provides templates as a resource,

they would need to support webmasters with the proper training.

The benefits of this project far outweigh the limitations. The concept of providing resources to the campus that will promote a unified Web presence would outweigh any future updates needed to the templates and the time put into training.

Future Research and Recommendations

The project has established a sound foundation for university-wide Web templates. The author recommends that further testing in regards to the ease of use is done by allowing a limited number of webmasters to test drive the templates on one of their Web sites. Feedback should be collected from these webmasters in the areas of ease of use and functionality. This feedback should be evaluated and any necessary changes should be implemented into the templates. The templates should also be maintained for accessibility standards, university Web standards, and university identity standards.

Since these templates provide a valuable resource to campus webmasters, this author recommends that ACM provide access to these templates though their Web site. To

encourage the proper use of the templates, ACM should establish training for university webmasters on the use of these templates and CSS Web site design. Access to these templates would alleviate the demand for Web site design services for ACM, provide a consistent brand identity of the university to implement, and promote a tool that meets Web site accessibility and university identity standards.

Conclusion

The outcome of this project can benefit the university by providing standardization resources to assist in Web development and maintenance needs to webmasters. The use of standardized templates creates consistency in navigational structure, design themes, and branding efforts, which create a more effective communication channel. Web sites currently using these templates demonstrate their versatility and ease of use, while displaying the university brand. They have the potential of unifying the Web presence of CSUSB with wide implementation.

CSUSB is not alone in the challenge of presenting unified branding presence on the internet; thousands of universities face the same challenges. By evaluating these templates, other universities could implement the same

concept of ready-to-use, branded templates for their campus webmasters. As universities realize the importance of the Web in their recruitment efforts, as a branding tool, and as a starting point for visitors, they need a way to manage the large endeavor of unifying their image and Web presence, which can be done through well-designed, structured templates that carry the university brand.

APPENDIX A
TEMPLATE CODE

APPENDIX B

SECTION 508: 1194.22

Section 508: 1194.22 Web-based intranet and internet information and applications

- (a) A text equivalent for every non-text element shall be provided (e.g., via "alt", "longdesc", or in element content).
- (b) Equivalent alternatives for any multimedia presentation shall be synchronized with the presentation.
- (c) Web pages shall be designed so that all information conveyed with color is also available without color, for example from context or markup.
- (d) Documents shall be organized so they are readable without requiring an associated style sheet.
- (e) Redundant text links shall be provided for each active region of a server-side image map.
- (f) Client-side image maps shall be provided instead of server-side image maps except where the regions cannot be defined with an available geometric shape.
- (g) Row and column headers shall be identified for data tables.
- (h) Markup shall be used to associate data cells and header cells for data tables that have two or more logical levels of row or column headers.
- (i) Frames shall be titled with text that facilitates frame identification and navigation.
- (j) Pages shall be designed to avoid causing the screen to flicker with a frequency greater than 2 Hz and lower than 55 Hz.
- (k) A text-only page, with equivalent information or functionality, shall be provided to make a web site comply with the provisions of this part, when compliance cannot be accomplished in any other way. The content of the text-only page shall be updated whenever the primary page changes.
- (l) When pages utilize scripting languages to display content, or to create interface elements, the information provided by the script shall be identified with functional text that can be read by assistive technology.
- (m) When a web page requires that an applet, plug-in or other application be present on the client system to interpret page content, the page must provide a link to a plug-in or applet that complies with §1194.21(a) through (l).
- (n) When electronic forms are designed to be completed on-line, the form shall allow people using assistive technology to access the information, field elements, and functionality required for completion and submission of the form, including all directions and cues.
- (o) A method shall be provided that permits users to skip repetitive navigation links.
- (p) When a timed response is required, the user shall be alerted and given sufficient time to indicate more time is required.

APPENDIX C
TEMPLATE DESIGN SAMPLES

Template design sample: Navigation bar – 1-column layout (navbar_1column.dwt)

CALIFORNIA STATE UNIVERSITY
SAN BERNARDINO

CSUSB HOME | MAP & DIRECTIONS | CONTACT CSUSB | DIRECTORY | INDEX

Quick Links

Customize Department / College Image Banner Area

navbar_1c navbar_2c navbar_2c_right navbar_3c sidenav_2c sidenav_3c Link 7

home

Use semantic coding: **Headline 1**

Headline 2

Headline 3


paragraph text

paragraph text : Mod et ulla faccum iuscip elestrud eugiamcommy nibh esto consed magnis dui euipis nisse lat. Agna commy nim at autem in velenit illaore doluptat iriusting eum delesequam del endreet dolendre magna facidunt ea consequisci tet wisi.

Met am verostisi iriuscip euguer autating eu feu feuis nim niam iuscidunt nibh eraesen ismodio dolum num irit autpat acidunt nulputate verostinit, quatae feum ea feugeros aliquis nisim ero core ming et, sim do core magnim incil ip etuero duipit autatet wis autpat. Ut ipissit la feuis augait praesed esenim et la faci erillaore feugiam zzrilit, conulputatum nulluptatum deliquis accummolor at. Dio er iriusto etumsan eugue molore eros nulluptatie feu feuguer adiam adigna facidunt ad dolor ilismodio od te facin herim aut nim qui et, quat, consendignit praestio consenit tobore conullaore euguer ipisis eum vel ullum nulput doloreet alisseniamet aliquismod

- list item 1
- list item 2
- list item 3

[Disability Resources](#) | [Privacy & Security Notice](#) | [The California State University System](#)

 California State University, San Bernardino
Office Name Here
9500 University Parkway, San Bernardino, CA 92407
p-909.537.XXX f-909.537.XXX

updated August 21, 2009
[Contact Webmaster](#)

Template design sample: Navigation bar with right column – 2-column layout
(navbar_2column_right_sb.dwt)

CSUSB HOME | MAP & DIRECTIONS | CONTACT CSUSB | DIRECTORY | INDEX

Quick Links | Go | Search CSUSB

Customize Department / College Image Banner Area

navbar_1c | navbar_2c | navbar_2c_right | navbar_3c | sidenav_2c | sidenav_3c | Link 7

home

Use semantic coding: Headline 1

Headline 2

Headline 3

paragraph text

paragraph text : Mod et ulla faccum iuscip elestrud eugiamcommy nibh esto consed magnis dui euipis nisse tat. Agna commy nim at autem in velenit illaore dolupat irusting eum delesequam del endreet dolendre magna facidunt ea consequisci tet wisi.

Met am verostisl iruscip euguer autating eu feu feuis nim niam iuscidunt nibh eraesen ismodio dolum num int autpat acidunt nulputate verostinit, quatue feum ea feugeros aliquis nisim ero core ming et, sim do core magnim incil ip etuero duipit autatet wis autpat. Ut ipissit la feuis augait praesed esenim et la faci erillaore feugiam zzrilit, conulputatum nulluptatum deliquis accummolor at. Dio er iriusto etumsan eugue molore eros nulluptatie feu feuguer adiam adigna facidunt ad dolor ilismodio od te facin herim aut nim qui et, quat, consendignit praestio consent lobore conullaore euguer ipisis eum vel ullum nulput doloreet alisseniamet aliquismod

- list item 1
- list item 2
- list item 3

Headline 2: Right Side Bar

right sub-nav link 1

right sub-nav link 2

right sub-nav link 3

Header 5


paragraph if needed can be seen here.

Disability Resources | Privacy & Security Notice | The California State University System

California State University, San Bernardino
Office Name Here
5500 University Parkway, San Bernardino, CA 92407
p-909.537.XXX f-909.537.XXX

updated August 21, 2008
Contact Webmaster

Template design sample: Navigation bar and side navigation – 2-column layout
(navbar_2column.dwt)



[CSUSB HOME](#) | [MAP & DIRECTIONS](#) | [CONTACT CSUSB](#) | [DIRECTORY](#) | [INDEX](#)

Customize Department / College Image Banner Area

navbar_1c
navbar_2c
navbar_2c_right
navbar_3c
sidenav_2c
sidenav_3c
Link 7

Header 4

sub-nav link 1

sub-nav link 2

sub-nav link 3

Header 4

paragraph if **needed**
can be seen here.

home

Use semantic coding: Headline 1

Headline 2

Headline 3

paragraph text

paragraph text : Mod et ulla faccum iuscip elestrud eugiamcommy nibh esto consed magnis dui euipis nisse tat.
Aagna commy nim at autem in velenit illaore doluptat inusting eum delesequam del endreet dolendre magna facidunt ea consequisci tet wisi.

Met am verostisl iuscip euguer autating eu feu feuis nim niam iuscidunt nibh eraesen ismodio dolum num irit autpat acidunt nulputate verostinit, quatue feum ea feugeros aliquis nisim ero core ming et, sim do core magnim incil ip etuero duipit autatet wis autpat. Ut ipissit la feuis augait praesed esenim et la faci enillaore feugiam zzriit, conlputatum nulluptatum deliquis accummolor at, Dio er iriusto etumsan eugue molore eros nulluptatie feu feuguer adiam adigna facidunt ad dolor ilismodio od te facin henim aut nim qui et, quat, consendignit praestio consent lobore conullaore euguer ipisis eum vel ullum nulput doloreet alisseniamet aliquismod

- list item 1
- list item 2
- list item 3

Use semantic coding: Headline 1

Headline 2

Headline 3

paragraph text

- list item 1
- list item 2
- list item 3

Use semantic coding: Headline 1


Headline 2

Headline 3

paragraph text

- list item 1
- list item 2
- list item 3


[Disability Resources](#) | [Privacy & Security Notice](#) | [The California State University System](#)



California State University, San Bernardino
Office Name Here
5500 University Parkway, San Bernardino, CA 92407
p-909.537.XXXX f-909.537.XXXX

updated June 10, 2009
[Contact Webmaster](#)

Template design sample: Navigation bar and side navigation – 3-column layout
(navbar_3column.dwt)




[CSUSB HOME](#) | [MAP & DIRECTIONS](#) | [CONTACT CSUSB](#) | [DIRECTORY](#) | [INDEX](#)

Customize Department / College Image Banner Area

navbar_1c
navbar_2c
navbar_2c_right
navbar_3c
sidonav_2c
sidonav_3c
Link 7

<p>Header 4</p> <p>sub-nav link 1</p> <p>sub-nav link 2</p> <p>sub-nav link 3</p> <p>Header 4</p> <p>paragraph if <u>needed</u> can be seen here.</p>	<p>home</p> <p>Use semantic coding: Headline 1</p> <p>Headline 2</p> <p>Headline 3</p> <p>paragraph text</p> <p>paragraph text : Mod et ulla faccum iuscip elestrud eugiamcommy nibh esto consed magnis dui eupis nisse tat. Agna commy nim at autem in velenit illaore doluptat iriusting eum delessequam del endreet dolendre magna facidunt ea consequisci tet wisi.</p> <p>Met am verostisli iriuscip euguer autating eu feu feuis nim niam iuscidunt nibh eraesen ismodio dolum num irit outpat acidunt nulputate verostirit, quatue feum ea feugeros aliquis nisim ero core ming et, sim do core magnim incil ip etuero duipit autatet wis outpat. Ut ipissit la feuis augait praesed esenim et la faci erillaore feugiam zznilit, conuiputatum nulluptatum deliquis accummolor at. Dio er iriusto etumsan eugue molore eros nulluptatie feu feuguer adiam adigna facidunt ad dolor ilismodio od te facin herim aut nim qui et, quat, consendignit praestio consenti lobore conullaore euguer ipisis eum vel ullum nulpul doloreet alisseniamet aliquismod</p> <ul style="list-style-type: none"> list item 1 list item 2 list item 3 	<p>Headline 2: Right Side Bar</p> <p>sub-nav link 111</p> <p>sub-nav link</p> <p>sub-nav link</p> <p>Header 5</p> <p>paragraph if <u>needed</u> can be seen here.</p>
---	---	--

[Disability Resources](#)
[Privacy & Security Notice](#)
[The California State University System](#)



California State University, San Bernardino

Office Name Here

5500 University Parkway, San Bernardino, CA 92407

p-909.537.XXX f-909.537.XXX

updated June 10, 2008

[Contact Webmaster](#)

Template design sample: Side navigation – 2-column layout (sidenav_2column.dwt)

CSUSB HOME | MAP & DIRECTIONS | CONTACT CSUSB | DIRECTORY | INDEX


Quick Links Go Office Search Search CSUSB



Customize Department / College Image Banner Area

Header 4	home
navbar_1c	Use semantic coding: Headline 1
navbar_2c	Headline 2
navbar_2c_right	Headline 3
navbar_3c	paragraph text
sidenav_2c	paragraph text : Mod et ulla faccum iuscip elestrud eugiamcommy nibh esto consed magnis dui euipis nisse tat.
sidenav_3c	paragraph text : Agna commy nim at autem in velenit illaore doluptat iriusting eum delesequam del endreet dolendre magna facidunt ea consequisci tet wisi.
Link 7	Met am verostisl iriuscip euguer autating eu feu feuis nim niam iuscidunt nibh eraesen ismodio dolum num irit autpat acidunt nulputate verostinit, quatu feum ea feugueros aliquis nisim ero core ming et, sim do core magnim incil ip etuero duipt autatet wis autpat. Ut ipissit la feuis augait praesed esenim et la faci erillaore feugiam zznit, conulputatum nulluptatum deliquis accummolor at. Dio er inusto etumsan eugue molore eros nulluptatie feu feuguer adiam adigna facidunt ad dolor ilismodio od te facin henim aut nim qui et, quat, consendignit praestio consenit lobore conullaore euguer ipisis eum vel ullum nulput doloreet alisseniamet aliquismod
Header 4	Use semantic coding: Headline 1
paragraph if <u>needed</u> can be seen here.	Headline 2
	Headline 3
	paragraph text
	<ul style="list-style-type: none">list item 1list item 2list item 3
	Use semantic coding: Headline 1
	Headline 2
	Headline 3
	paragraph text
	<ul style="list-style-type: none">list item 1list item 2list item 3
	Use semantic coding: Headline 1
	Headline 2
	Headline 3
	paragraph text
	<ul style="list-style-type: none">list item 1list item 2list item 3

Template design sample: Side navigation bar – 3-column layout (sidenav_3column.dwt)




CALIFORNIA STATE UNIVERSITY
SAN BERNARDINO

[CSUSB HOME](#) | [MAP & DIRECTIONS](#) | [CONTACT CSUSB](#) | [DIRECTORY](#) | [INDEX](#)

Customize Department / College Image Banner Area

<p>Header 4</p> <p>navbar_1c</p> <p>navbar_2c</p> <p>navbar_2c_right</p> <p>navbar_3c</p> <p>sidenav_2c</p> <p>sidenav_3c</p> <p>sub-nav link 7</p> <p>Header 4</p> <p>paragraph if <u>needed</u> can be seen here.</p>	<p>home</p> <p>Use semantic coding: Headline 1</p> <p>Headline 2</p> <p>Headline 3</p> <p>paragraph text</p> <p>paragraph text : Mod et ulla faccum iuscip elestrud eugiamcommy nibh esto conset magnis dui euipis nisse tat. Agna commy nim at autem in velenit illaore doluptat iriusting eum delesequam del endreet dolendre magna facidunt ea consequisci tet wisi.</p> <p>Met am verostisl iriuscip euguer autating eu feu feuis nim niam iuscidunt nibh eraesen ismodio dolum num irit autpat acidunt nulputate verostinit, quatue feum ea feugueros aliquis nisim ero core ming et, sim do core magnim incil ip etuero duipt autatet wis autpat. Ut ipissit la feuis augait praesed esenim et la faci erillaore feugiam zzrilit, conulputatum nulluptatum deliquis accummolor at. Dio er iriusto etmsan eugue molore eros nulluptatie feu feuguer adiam adigna facidunt ad dolor ilismodio od te facin henim aut nim qui et, quat, consendignit praestio consenit lobore conullaore euguer ipisis eum vel ullum nulput doloreet alisseniamet aliquismod</p> <ul style="list-style-type: none"> list item 1 list item 2 list item 3 <p>Use semantic coding: Headline 1</p> <p>Headline 2</p> <p>Headline 3</p> <p>paragraph text</p> <ul style="list-style-type: none"> list item 1 list item 2 list item 3 <p>Use semantic coding: Headline 1</p> <p>Headline 2</p> <p>Headline 3</p> <p>paragraph text</p> <ul style="list-style-type: none"> list item 1 list item 2 list item 3 	<div style="background-color: #333; color: white; padding: 2px; text-align: center;"> Headline 2: Right Side Bar </div> <p>right sub-nav link 1</p> <p>right sub-nav link 2</p> <p>right sub-nav link 3</p> <p>Header 5</p> <p>paragraph if <u>needed</u> can be seen here.</p>
---	---	--



California State University, San Bernardino
Office Name Here
5500 University Parkway, San Bernardino, CA 92407
p-909.537.XXXX f-909.537.XXXX

updated June 10, 2008

[Contact Webmaster](#)

REFERENCES

- Balmer, J. M. T. (2001). From the Pentagon: A new identity framework. *Corporate Reputation Review*, 4, 11-21.
- Balmer, J. M. T., & Gray, E. R. (2003). Corporate brands: What are they? What of them? *European Journal of Marketing*, 37, 972-997.
- Balmer, J. M. T., & Greyser, S. A. (Eds.). (2003). *Revealing the corporation: Perspectives on identity, image, reputation, corporate branding and corporate level marketing*. London: Routledge.
- Balmer, J. M. T., & Soenen, G. B. (1999). The acid test of corporate identity management. *Journal of Marketing Management*, 15, 69-92.
- Belch, G. E., & Belch, M. A. (2004). *Advertising and promotion: An integrated marketing communications perspective (6th ed.)*. Boston: McGraw-Hill.
- Bos, B., Çelik, T., Hickson, I., & Lie, H. W. (Eds.). (2007, July 19). *Cascading Style Sheets level 2 revision 1 (CSS 2.1) specification*. Retrieved October 13, 2007, from <http://www.w3.org/TR/2007/CR-CSS21-20070719>
- Boulding, K. (1956) *The image*. Ann Arbor, MI: University of Michigan Press.

- Cal State San Bernardino introduces new Web site* (2008, January 14). Retrieved October 15, 2008, from California State University, San Bernardino, CSUSB News Web site:
http://news.csusb.edu/story_print.asp?articleid=5947
- Calongne, C. M. (2001). Designing for web site usability. *Journal of Computing Sciences in Colleges*, 16, 39-45.
- Cater, R., Day, B., & Meggs, P. (1993). *Typographic design: Form and communication* (2nd ed.). New York: Van Nostrand Reinhold.
- Cheng, M. (n.d.). *Accessible technology initiative*. Retrieved March 17, 2007, from <http://www.calstate.edu/accessibility/section508/>
- Chisholm, W., Vanderheiden, G., & Jacobs, I. (1999, May 5). Web content accessibility guidelines 1.0. Retrieved November 28, 2007, from <http://www.w3.org/TR/1999/WAI-WEBCONTENT-19990505>.
- Clark J. (2003). *Building accessible websites*. Boston: New Riders Publishing.
- Cocoran, I. (2007). *The art of digital branding*. New York: Allworth Press.
- Colyer, E. (2005, September 12). *Assigned reading: Branding gets credit at university*. Retrieved March 17, 2008,

from

http://www.brandchannel.com/features_effect.asp?pf_id=

280

Cover, R. (Ed.). (2002, July 12). *Standard Generalized Markup Language (SGML)*. Retrieved November 9, 2007,

from <http://xml.coverpages.org//sgml.html>

CSU profiles (Fall 2004). Retrieved March 9, 2007, from

California State University, System Wide Human

Resources Web site:

<http://www.calstate.edu/HR/Fall2004CSUProfiles.pdf>

Cullen, C. D. (2006). *Graphic design that works: Secrets for successful logo, magazine, brochure, promotion, and identity design*. Gloucester, MA: Rockport.

de Chernatony, L. (1999). Brand management through narrowing the gap between brand identity and brand reputation. *Journal of Marketing Management*, 15, 157-79.

Electronic and information technology accessibility standards (Section 508). (1998). Retrieved March 17,

2007, from the United States Access Board Web site:

<http://www.access-board.gov/sec508/standards.htm>

Faculty profile 2006/2007 (n.d.). Retrieved March 9, 2007, from California State University, San Bernardino,

- Office of Academic Affairs Web site: <http://academic-affairs.csusb.edu/personnel/profile06.html>
- French, N. (2006). *InDesign Type: Professional Typography with Adobe InDesign CS2*. Berkeley, CA: Peachpit.
- Germonprez, M., Avital, M., & Srinivasan, N. (2006). The impacts of the Cascading Style Sheet standard on mobile computing. *International Journal of IT Standards & Standardization Research*, 4, 55-69.
- Hackett, S., Parmanto, B., & Zeng, X. (2004). Accessibility of internet websites through time. *Proceedings of the 6th International ACM SIGACCESS Conference on Computers and Accessibility, Atlanta, GA, USA*, 32-39.
- Hatch, M. J., & Schultz, M. (2003). Bringing the corporation into corporate branding. *European Journal of Marketing*, 37, 1041-1064.
- Henry, S. L., & Brewer, J. (Eds.). (2006, March 23). *WAI mission and organization*. Retrieved November 28, from <http://www.w3.org/WAI/about.html>
- Hunt, J. (2008, February 14). *University appoints Web brand, new media strategy manager*. Retrieved February 27, 2008, from University of Wisconsin Oshkash Web site: <http://www.uwosh.edu/news/?p=470>

- Ind, N. (1998). The company and the product: The relevance of corporate associations. *Corporate Reputation Review*, 2(1), 88-93.
- Jacobs, I. (2007, June 19). *About the World Wide Web Consortium (W3C)*. Retrieved November 9, 2007, from <http://www.w3.org/Consortium>
- Kapferer, J. N. (1997), *Strategic Brand Management*, Kogan Page, London.
- Keith, C., Volkert, J., Maraviglia, J., Whitlatch, F., & Blackburn, J. (2007). *Report of peer review team visit to California State University, San Bernardino*. Long Beach, CA: California State University Chancellor's Office.
- Keller, L. K., & Aaker, D. A. (1998). The impact of corporate marketing on a company's brand extensions. *Corporate Reputation Review*, 1, 356-379.
- Knox, S., & Bickerton D. (2003). The six conventions of corporate branding. *European Journal of Marketing*, 37, 998-1016.
- Koernig, S. K. (2003). E-scapes: The electronic physical environment and service tangibility. *Psychology & Marketing*, 20, 151-167.

- Krug, S. (2005). *Don't make me think! A common sense approach to web usability (2nd ed.)*. Indianapolis, IN: New Riders.
- Lie, H. W., & Saarela, J. (1999). Multipurpose Web publishing using HTML, XML, and CSS. *Communications of the ACM*, 42, 95-101.
- Lindgaard, G., Fernandes, G., Dudek, C., & Brown, J. (2006). Attention Web designers: You have 50 millisecond to make a good first impression. *Behaviour & Information Technology*, 25, 115-126.
- Low, G. S. (2000). Correlates of integrated marketing communications. *Journal of Advertising Research*, 40, 27-39.
- Lynch, P. J., & Horton, S. (2002). *Web style guide: Basic design principles for creating Web sites*. New Haven, CT: Yale University.
- Macrae, C. (1999). Brand reality editorial. *Journal of Marketing Management*, 15, 1-24.
- Mao, A. Y., Cordy, J. R., & Dean, T. R. (2007). Packaging and delivery of web pages and web applications: Automated conversion of table-based websites to structured stylesheets using table recognition and clone detection. *Proceedings of the 2007 Conference*

of the Center for Advanced Studies on Collaborative Research CASCON '07, Ontario, Canada, 12-26.

Margulies, W. P. (1977). Making the most of your corporate identity. *Harvard Business Review*, 55(4), 66-77.

Markwick, N., & Fill, C. (1997). Towards a framework for managing corporate identity. *European Journal of Marketing*, 31, 396-409.

McIntire, P. (2008). *Visual design for the modern Web*. Berkeley, CA: New Riders.

Melewar, T. C., & Saunders, J. (1998). Global corporate visual identity systems: Standardization, control and benefits. *International Marketing Review*, 15, 291-308.

Miniwatts Marketing Group (n.d.). *The Internet world stats*. Retrieved November 3, 2008, from <http://www.internetworldstats.com/list2.htm>

MSU Web communications (2006, August 31). Retrieved February 27, 2008, from Montana State University Web site: <http://www.montana.edu/cpa/webcom/>

Myers, T. M. (2001, March 26). A student is not an input. *The New York Times*, p. A19.

Naddaff, A. (2004). Branding by design: How non-profits can fight for dollars with a strong visual presence. *Communication World*, 21(4), 18-21.

- Nielsen, H. F., Gettys, J., Baird-Smith, A., Prud'hommeaux, E., Lie, H. W., & Lilley, C. (1997). Network performance effects of HTTP/1.1, CSS1, and PNG. *Proceedings of the ACM SIGCOMM '97 conference on applications, technologies, architectures, and protocols for computer communication SIGCOMM '97, Cannes, France, 27*, 155-166.
- Nielsen, J. (1997, July). *Style sheets vs. frames as web extensions*. Retrieved March 5, 2007, from http://www.useit.com/alertbox/styles_vs_frames.html
- Nielsen, J. (1999). User interface directions for the web. *Communications of the ACM*, 42, 65-72.
- Okin, J. R. (2005). *The information revolution: The not-for-dummies guide to the history, technology, and use of the World Wide Web*. Winter Harbor, ME: Ironbound.
- Pemberton, S., Austin, D., Axelsson, J., Çelik, T., Dominiak, D., Elenbaas, H., et al. (Eds.). (2002, August 1). XHTML™ 1.0 the Extensible HyperText Markup Language (2nd ed.). Retrieved October 14, 2007, from <http://www.w3.org/TR/xhtml1>
- Peterson, K. (2006). Academic web site design and academic templates: Where does the library fit in? *Information Technology & Libraries*, 25, 217-221.

Quick coyote facts (2007, October 18). Retrieved October 21, 2007, from California State University, San Bernardino, Office of Institutional Research Web site: <http://ir.csusb.edu>

Raggett, D., Le Hors, A., & Jacobs, I. (Eds.). (1999, December 24). *HTML 4.01 specification*. Retrieved October 14, 2007, from <http://www.w3.org/TR/html4/>

Reed, D., & Davies, J. (2006). The convergence of computer programming and graphic design. *Journal of Computing Sciences in Colleges*, 21, 179-187.

Refsnes Data (n.d.) *Browser statistics*. Retrieved November 25, 2007, from http://www.w3schools.com/browsers/browsers_stats.asp

Ries, A. & Trout. J. (1982), *Positioning: The Battle of your Mind*, New York: Warner Books.

Ross, M. (2008). *Web site standards of CSUSB [draft]*. California State University, San Bernardino, Academic Computing and Media.

Schmitt, G. (2008). Does the home page still matter? Why distribution trumps destination for publishers and advertisers. *2008 Digital outlook report*. Retrieved February 29, 2008, from <http://guykawasaki.typepad.com/AARFDigitalOutlookReport>

t.pdf

Schultz, D. E. (Writer). (1993). *From advertising to integrated marketing communication* [Motion picture]. Lincolnwood, IL: NTC Business Videos.

Schultz, D., & Schultz, H. (2004). *IMC, the next generation: Five steps for delivering value and measuring returns using marketing communication*. Boston: McGraw-Hill.

S. 105. (Ca. 2002), available at http://info.sen.ca.gov/pub/01-02/bill/sen/sb_0101-0150/sb_105_bill_20020929_chaptered.pdf.

Shea, D., & Holzschlag, M. E. (2005). *The zen of CSS design: Visual enlightenment for the Web*. Berkeley, CA: New Riders.

Tan, P. (2001, September 3). *Asian insights - Branding lessons at the world's top universities*. Retrieved March 17, 2008, from http://www.brandchannel.com/brand_speak.asp?bs_id=15

The University of Utah Brand identity Web site compliance (n.d.). Retrieved February 27, 2008, from University of Utah Web site:

http://ucomm.utah.edu/logos/web_compliance.html

- Tilley, C. (1999). Built-in branding: How to engineer a leadership brand. *Journal of Marketing Management*, 15, 181-91.
- Twitchell, J. B. (2004). *Branded nation: The marketing of megachurch, college, inc., and museumworld*. New York: Simon & Schuster.
- Urde, M. (1999). Brand orientation: A mindset for building brands into strategic resources. *Journal of Marketing Management*, 15, 117-33.
- van Riel, C. (1995). *Principles of corporate communication*, Hertfordshire, U.K.: Prentice-Hall.
- van Riel, C. B. M., & Balmer, J. M. T. (1997). Corporate identity: The concept, its measurement, and management. *European Journal of Marketing*, 31, 340-355.
- Wallschlaeger, C., & Busic-Snyder, C. (1992). Perceptual principles of organization. In M. Morgan (Ed.), *Basic visual concepts and principles: For artists, architects, and designers* (pp. 371-429). Dubuque, IA: Wm. C. Brown.
- Web development: Contact list*. (2007, November 29). Retrieved March 29, 2008, from California State University, San Bernardino, Academic Computing & Media

Web site:

<http://acm.csusb.edu/Services/webdevelopment/webmasters/index.asp>

Web development: General information. (2007, November 29).

Retrieved March 29, 2008, from California State University, San Bernardino, Academic Computing & Media

Web site:

http://acm.csusb.edu/Services/webdevelopment/gen_info.htm

Wheeler, A. (2006). *Designing brand identity: A complete guide to creating, building, and maintaining strong brands (2nd ed.)*. Hoboken, NJ: John Wiley & Sons.

White, A. W. (2007). *Advertising design and typography*. New York: Allworth.

Zaner, J. (2006). Taking your web site to the next level. *Tech Directions*, 66 (2), 6-19.

Zeldman, J. (2001, February 16). *From table hacks to CSS layout: A Web designer's journey*. Retrieved November 25, 2007, from <http://www.alistapart.com/articles/journey>

Zeldman, J. (2007). *Design with Web standards (2nd ed.)*. Boston: New Rider.