HauteSpot Networks Corporation
Website Redesign

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Abstract

This report is a technical description of my senior project. The objective of the senior project is to redesign a commercial, corporate presence Website. This report contains information pertaining to the development of this Website.
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Chapter I—Introduction

Client
HauteSpot Networks Corporation, a privately held company, is located in San Luis Obispo, CA. The company manufacturers and sells wireless routers for IP video surveillance. Their business model is to use channel distribution to reach the following vertical market segments: public safety (police and fire), government and military, commercial surveillance, and broadcast (television).

Client Current Position And Problem
HauteSpot Networks Corporation is in need of redesigning its current Website to resolve several issues
• Information is hard to find
• Documentation is not up-to-date
• Site management is difficult
• Content creation is difficult
• Brand positioning and marketing messages are not clear
• The site is not optimized for searchability (SEO)

Client’s Objective
• Keep within a low budget for the Website redesign
• Get the Website up and running quickly
• Support Web 2.0 features like blogs, forums, user specific content, and stylish design
• Make it easy to maintain content and quickly change as required
• Secure areas of the site so that only customers, resellers or distributors have access.
• Speed up performance of the site
• Optimize it for search engines and draw in customers

Objective of The Study
The objective of this project is to redesign the Website so that it meets the customers requirements, is aesthetically pleasing, incorporates design elements that demonstrate my creative capabilities, and allows me to understand the technical infrastructure which supports the Website so that I can use similar tools and infrastructure in future projects.

Limitation of The Study
1. Cost
2. Time
3. Development tools
4. Programming resources
Chapter II—Review of Research

Cost
The budget for the new site is less than $2,000. This budget constraint has led me to look for a CSS template solution in order to save money on design and allocate the budget for the implementation of features and functions.

The existing HauteSpot Networks’ Web site has about 25 pages. (See figure 1) The alignment of many of the pages was broken due to several modifications by the owner, who attempted to modify the content, without modifying the image slicing that was done by Photoshop. The alignment problems (see figure 2) were the result of adding content to a fixed pixel and table layout that was not flexible enough to accommodate the changes. The Web site uses static pages throughout. By moving to a dynamic Web site infrastructure, we can accommodate these types of changes by the owner without necessitating a complete redesign.

Figure 1—This is the diagram of existing site map
Time
HauteSpot has expended its sales channel rapidly by adding distributors, resellers, and manufacturers representatives. HauteSpot needs to quickly provide an easy to use repository of information for both customers and the sales channel members that differentiate content based on user type. Potential customers should only see content appropriate to making or influencing purchasing decisions. Existing customers should have access to training, manuals, software, and other related “post sales” content. Sales channel members should have access to sales training materials, detailed product design guidelines, pricing, policies and procedures, and other similar material.
We do not want to confuse customers with information that is not relevant to their needs.

HauteSpot needs the new site launched ASAP. All Web 2.0 functionality needs to be in place. However, there is a significant learning curve for me to not only design for these complex requirements, but learn the new tools that will allow me to implement the Website.

**CMS Development Tool**

Based on my research, the quickest way to develop the client’s Website is using a Content Management System (CMS).

What’s a content management system (CMS)? In order to better understand a CMS, we have to understand few things about traditional web pages.

Over the past decade, the web sites have been evolved from static web sites to sites with cascading style sheets, then from CSS web sites to dynamic web sites.

1) **Static Web sites**—The content and presentation are in the same files. The web page is made up of HTML that tells your browser how to present the content of a web page. A static web site is very simple to implement, however the problem with static sites is that they are hard to edit and maintain, and are not able to be context sensitive. Everyone sees the same content. Because each bit of content is individually styled, the file size is large, which hurts your search engine optimization efforts as well.

2) **Web sites with Cascading Style Sheets (CSS)**—The content and presentation are separated. CSS references within a web page control the visual presentation of the web page such as fonts, page layouts, etc. Usually CSS information is stored in separate files that are separated from the content of the page. The format is defined in the CSS file and then called through tags referencing the format information. CSS allows for the reuse of formats throughout a website because the definitions can be called from any web page. Because of the style information was placed in a separate file, maintaining and revising web pages is much easier. You can change a style in one place and it will be applied to many web pages. This makes both content and style files much smaller and downloading of pages much faster, since the browser can cache the CSS style definitions and apply them as additional pages are loaded.

3) **Dynamic Web sites**—In Dynamic sites both content and presentation are separated from the Web page itself. The concept of a dynamic Web site is that CSS is used to separate the style from content, and a Content
Management System (CMS) separates the content from the page. So what’s left on the page? Think of the page as a placeholder or an insertion point with references to formats from CSS and content from a database of objects that can be reused. What this means is that a page doesn’t really exist until you follow a link to view it at which time the CMS assembles the content objects to create the page for you.

The content might be different each time you view it, which means that page’s content can be updated and customized based on the viewer’s interactions with the page. In other words, if I am not logged into the system, then I may only see marketing oriented material; but if I have a user account, which indicates that I have already purchased a product, then I might see different content. If I am redirected from a different web site or browsing through a set of web pages, I may see different content based on my browsing history. There are many ways a CMS can be used.

A CMS is typically an open source development tool that develops dynamic web pages. Most use a SQL database to store the content, and PHP, Python, or other programming language to retrieve or store data in the database.

Out of the many CMS development tools available, I found Joomla to be the best for my purposes. Joomla has a large community that supports the Joomla platform. There are many free extensions and plug-ins available as well as commercial versions of extensions and plug-ins that are better supported and more professional looking. For the most part, free extensions and plug-ins will meet the needs of my customer.

For all of the reasons given above Joomla 1.5 is my recommendation; however, the implementation and deliverable will be a challenge for me. This project truly uses Cal Poly’s philosophy of “Learn by Doing.”
Chapter III — Procedures and Results

Web Development Approach
A number of protocol and procedures appropriate to business dealings for Web development will be employed to facilitate this study.

Web Design/Development Questionnaire
This includes a list of questions such as “don’t like” and “do like”, trial taglines and brand positions, proposed style guide, identification of competitors, and an understanding of desired features and functionalities.

Proposal
My proposal includes a design recommendation, a technical implementation recommendation, a detailed scope of the project, an estimate of cost of development, a proposal for continuing service and support included, a timeline, a schedule of payment, and copyright usage.

Stage of Development

1) Mapping
This stage of development is where the features and functions required are defined. The new site has about 55 dynamic pages, which allow registered users to upload files and contribute content to the site. (See figure 3)
2) **Inventory**

Based on the new sitemap, I have gone through the existing site and inventoried the possible usable materials. I created a content inventory list. (See figure 4)

![Figure 4—sample of the content inventory list](image)

3) **Selecting templates**

Based on the web design questionnaire, I researched the cost, features, and layout, and I selected three templates that will work for the client.

4) **Finalizing the template**

The template is the style information for the CMS. The client picked the template/style called i-Kantine. Now I will have to figure out how to make the style work. The red buttons on the layout are called Joomla modules, which are associated with the CSS style. The layout below is called a template position layout, and it contains “search”, “header”, “top menu”, “user”, “main menu”, “footer menu”, “credits”, “left menu”, and “Breadcrumbs”. (See figure 5)
Setting Up The Development Environment

Installation of Joomla! 1.5

This means that we need to Install Joomla on our server or on my local computer for the purpose of development. Installing on my local computer is called “local host,” and installing in a remote server is called “remote host.” To successfully install and use Joomla!, you must have a fully operational Web server (Apache is recommended), a database (MySQL is recommended), and a server side scripting language (PHP) together with specific modules that are activated within PHP for MySQL, and Zlib among others.

There are several steps to complete this installation: 1) Pre-installation check, 2) license, 3) database configuration, 4) FTP configuration, and 5) main configuration.
Real-time Development
At first, I have decided to install Joomla on my computer, and used my computer as my Localhost server; this allowed me to see how Joomla separated files, and I was able to view the files and deconstruct the code at a local level. After a week of learning by using the sample data and files provided by Joomla! I decided to start over by re-installing the Joomla on the remote host, which is provided by Godaddy.com, a hosting provider. As soon as I moved the development to Godaddy, I immediately learned that the uploading and downloading files was extremely slow. This was the result of Godaddy hosting my Joomla on a shared server with inadequate resources.

I was very frustrated with the speed, as I have very limited time to finish this project. I researched several hosting service providers and found the company called Rochen that was rated #2 as the best Joomla hosting provider.

Once I moved the site to Rochen, my real-time development and editing was significantly faster. I was able to show my client the new site infrastructure based on the approval site map, and the client was able gave me instant feedback. (See figure 6, 7, 8)

While my client was viewing the navigation and writing the content for the page, I was working on other sections of the site at the same time. The editing and creation both happened in real-time simultaneously.
Figure 6—client’s new landing page

Figure 7—Navigation of the new site

Figure 8—This is support page for non-register users.
Keywords/Key phrases for SEO

It is good to have a site that is beautiful, easy to navigate, and content rich, but that does not necessarily mean that the site is searchable or will be ranked at the top of search results. In order to rank high on popular search engines such as Google and Yahoo, there are several tasks need to be done. Keywords need to be placed in title and body text. The number one factor in ranking a page on search engines is the title tag. These are the words inside the <title>tags of a page’s source, and they appear in the blue bar of a browser.

Joomla can be set to use the title of the article in the title tag.

Browsers compatibilities
Most browser issues happened in IE 6 and IE 7, since Joomla has a such big community, I haven’t encounter a major issue with IE6 and IE 7 at this time.

Site Launch!
Mission possible! Completed in only four weeks of development.
Chapter IV — Summary and Recommendations

When I first read about CMS and Joomla! I thought this is a very straightforward tool, and it shouldn’t take too much time to learn and apply it. Well, I have mixed feelings about this at the end of the project.

Can anyone learn it? Absolutely! Is it easy to manage and maintain the site by the client? It can be, if it is set up right! However, the one biggest drawback using a CMS is that it can become extremely complex. CMS contains thousands of files and scripts that work together to present a comprehensive and feature-rich Web site. Without a good understanding of dynamic pages and the core of the CMS concepts, it can become very frustrating to the beginner. I almost quit learning Joomla 2 or 3 times during my development and considered using a more traditional approach.

I suggest that a CMS site should be designed by a technical staff and managed and run by non-technical users.

The most difficult part of learning is the concepts of modules, plug-ins, extensions, and components.
Glossary of Terms

**Apple Mac OSX**: is computer operating systems developed, marketed, and sold by Apple Inc.

**Breadcrumbs**: is a navigation aid used in user interfaces. It gives users a way to keep track of their locations within programs or documents.

**Channel distribution**: is a chain of intermediaries, each passing the product down the chain to the next organization, before it finally reaches the consumer or end-user. This process is known as the 'distribution chain' or the 'channel.' Each of the elements in these chains will have their own specific needs, which the producer must take into account, along with those of the all-important end-user.

**CMS**: is a content management system is software that keeps track of every piece of content on your Web site.

**CSS**: is a simple mechanism for adding style (e.g. fonts, colors, spacing) to Web documents.

**Database**: is an integrated collection of logically related records or files consolidated into a common pool that provides data for one or more multiple uses.

**Distributor**: is who sells to retailers.

**FTP**: is a standard network protocol used to exchange and manipulate files over a TCP/IP based network, such as the Internet. FTP is built on a client-server architecture and utilizes separate control and data connections between the client and server applications. FTP is also often used as an application component to automatically transfer files for program internal functions. FTP can be used with user-based password authentication or with anonymous user access.

**HTML**: stands for Hypertext Markup Language, is the predominant markup language for web pages.
**Joomla**: is a content management system (CMS), which enables you to build Web sites and powerful online applications.

**Joomla modules**: are modules that control the parameters and placement in a Joomla site. Modules can be thought of as mini-components, where a component always displays its content in the main body of the page.

**Linux**: is Unix-like computer operating systems based on the Linux kernel.

**Localhost**: is a Web server and associated database that is set up directly on your computer or that may be on a local network either within your home or business environment. You have direct easy access to the machine upon which the software is situated.

**Manufacturers’ Representative**: is also known as sales agent, is an individual, sales agency or company that sells a manufacturer's products to wholesale and retail customers. When a manufacturer hires a manufacturers rep firm, this usually means that a contract is signed between the two companies, which empower the rep to sell the manufacturer's products as an agent in a defined territory. The products are usually ordered directly from the manufacturer, who then pays a sales commission to the manufacturers rep firm.

**MySQL**: is a relational database management system. The program runs as a server providing multi-user access to a number of databases.

**PHP**: is a widely used, general-purpose scripting language that was originally designed for web development, to produce dynamic web pages. It can be embedded into HTML and generally runs on a web server, which needs to be configured to process PHP code and create web page content from it. It can be deployed on most web servers and on almost every operating system and platform free of charge.

**Remote Host**: is one that you access via the Internet, it may be owned by you or you may rent it from a dedicated hosting company.

**Reseller**: is a company or individual that purchases goods or services with the intention of reselling for a profit.

**SEO**: is the process of improving the volume or quality of traffic to a web site from search engines. SEO considers how search engines work and what people search for. Optimizing a website primarily involves editing its content and HTML
and associated coding to both increase its relevance to specific keywords and to remove barriers to the indexing activities of search engines.

**Template:** is a set of rules about the presentation of components and modules within a page and their placement on the screen.

**Vertical marketing:** is a group of similar businesses and customers that engage in trade based on specific and specialized needs. Often, participants in a vertical market are very limited to a subset of a larger industry (a niche market). An example of this sort of market is the market for point-of-sale terminals, which are often designed specifically for similar customers and are not available for purchase to the general public. Vertical marketing can be witnessed at trade shows.

**Web 2.0:** is the term "Web 2.0" (2004–present) is commonly associated with web applications that facilitate interactive information sharing, interoperability, user-centered design, and collaboration on the World Wide Web. Examples of Web 2.0 include web-based communities, hosted services, web applications, social-networking sites, video-sharing sites, wikis, and blogs. A Web 2.0 site allows its users to interact with other users or to change website content, in contrast to non-interactive websites where users are limited to the passive viewing of information that is provided to them.

**Window:** is Microsoft software operating systems.

**Wireless router:** is a device that performs the functions of a modem but also includes the functions of a wireless access point. It is commonly used to allow access to the Internet or a computer network without the need for a cabled connection. It can function in a wired LAN (local area network), a wireless only LAN, or a mixed wired/wireless network.

**XML (Extensible Markup Language):** is a set of rules for encoding documents electronically.
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