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Regis University
College for Professional Studies Graduate Programs
Final Project/Thesis

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Abstract

First Stop Sports (<http://www.firststopsports.com>) is a small sports collectibles and memorabilia company that has been in existence since 2000. It is an online, eCommerce company specializing in NFL and NCAA collectible football helmets and other sports memorabilia. First Stop Sports currently has an Internet presence with a website constructed of simple, static, HTML pages being hosted via a third party Website Hosting Company. First Stop Sports currently operates under their original and now outdated paper transaction system to process customer orders. With a newly designed and modern website, First Stop Sports can portray the image and presence of a large corporation.

The goals of this project are to design a prototype and improved data capturing system based on the existing production system. The current system has no automation, and customer order processing is a very time consuming and manual process. Whenever orders are placed electronically through the web site, the data is transferred to the third party credit card processing company. No customer or product order data, customer name and address, items ordered, and method of payment are electronically captured within the First Stop Sport's web site.

This project is the design of a web site that will now capture customer ordering data for further analysis and business development.

Acknowledgements

I would like to thank first and foremost my wife, Kristen who kept encouraging me to complete my Masters degree, and also my kids for having the patience and understanding and the realization that I had school work to do.

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Executive Summary

First Stop Sports (<http://www.firststopsports.com>) is a small sports collectibles and memorabilia eCommerce company, specializing in NFL and NCAA collectible football helmets and other sports memorabilia. First Stop Sports current web site has shown some inadequacies and limited capabilities with historical customer ordering information capture. “They are struggling to advance business development and increase revenue.”

It is the scope of this project to investigate, design, and develop a prototype data acquisition system for First Stop Sports. This prototype would only focus on one specific product line, but it would need to have the same look, feel and functionality as the existing eCommerce website, <http://www.firststopsports.com>. Changes would have to inevitably integrate seamlessly into the existing website to minimize impact on business. All customers ordering information, past and present would have to be captured in a relational database. That captured data can then produce intelligent reports and potentially increase revenue and profitability. Additionally, marketing campaigns with focused e-newsletters can be sent to customers. With captured customer information, profiling and advanced advertising features can be attained.

Chapter 1: Introduction

Chapter 1 provides an in depth look at the professional project explaining why First Stop Sports needs to upgrade its current website. The goal of this project is to prototype a data capturing enhancement to an existing e-commerce sports memorabilia online store. The scope of this project is to focus on one specific product line and to enhance the information captured for later analysis and business development. With the updated prototype product line in place and fully functional, it would be a matter of simple code replication to complete the entire product line First Stop Sport offers.

1.1 Introduction and background

With the ever-increasing popularity of professional sports, marketing collectible items and supplying sports fans with team memorabilia is a growing market. The small brick-and-mortar sports collectible store, the traditional suppliers of local team sports collectibles, are losing out to the increasingly competitive market of the online shopper. With the Internet's popularity and its ease of use, the customer is driving the small retail brick-and-mortar stores to become less important in the role of supplying sports collectibles, and their market share is dwindling to the online superstore. The average sports fan will often question, "Why go down to a local store to purchase professional sports team memorabilia when you can get most team's merchandise online?" Not only is the merchandise that is available online, the exact same product, but often cheaper due to increased competition and is relatively easily accessed. Additionally, there is typically no sales tax on those items and only a small shipping charge, which is often dependent on how much one spends.

Most of the major sports merchandise manufactures; i.e. Riddell, Schutt, Nike, Reebok, etc..., have signed exclusivity contracts with those respective professional sport organizations. Those manufacturing companies are typically the only legally licensed company to produce those items with manufacturing typically done overseas. The drawback to the local sports brick-and-mortar collectible stores are their inventory limitations. Typically, those stores, based in malls or smaller strip malls, limit their inventory to only local teams and are hard pressed to maintain an inventory of sports teams outside of their major local market. Simple demographics would mandate that local sports teams typically sell better than non-local sports teams. However, the online sports memorabilia stores do not limit themselves to sports teams from specific geographical areas, but instead try to accommodate all sports fans and potential customers. As in the case with First Stop Sports, very little inventory is kept locally within the operations of the company. The model of direct shipment from vendor to customer is commonplace. With a well designed cost effective website, sports retail stores of any size can maintain a look-and-feel of a large, multinational corporation.

1.2 Problem Statement

First Stop Sports does not have a data acquisition system with its current operational setup. This project presents an analysis of the current online ordering processing system and a proposal for implementing an improved data capturing system. The focus of this project was to integrate an enhanced prototype web site to an existing online store (<http://www.firststopsports.com>) with some of the features that Internet shoppers have come to expect, but still maintain the look and feel of the current web site.

1.3 Review of Current Process

The following section outlines an online customer who is in the process of purchasing a product from <http://www.firststopsports.com>, specifically a Denver Broncos mini helmet. Additionally, this section provides detailed screen shots and the location of customer specific information. Outlined in this section, is the complete cycle from the initial ordering of a product, to processing that order and updating the inventory system, to finally updating the First Stop Sports accounting system.

Figure 1 is a high level overview detailing the specific steps the online customer is currently at in the ordering process and where his personal and sensitive data or information resides. Figure 1 is broken into 7 steps, with screen shots taken at each step as notated with corresponding figures to the right. The yellow section represents First Stop Sports and the red section represents the 3rd party shopping cart company. From the transition of step 1 to step 2, the customer's data is no longer retained in First Stop Sports control, but transferred to the 3rd party shopping cart company's control where it is processed. Finally, between step 6 and 7, data is transferred back to First Stop Sports via an email.

1.3.1 Ordering Process:

Scenario: Customer ordering a Denver Broncos Mini helmet:

Precursor: The customer has navigated to <http://www.firststopsports.com>, and has selected the Denver Broncos from the NFL drop down. From the available products for that team, the customer has selected a Mini Replica Helmet and clicked 'Add to Cart'.

Step 1: Depicted in Figure 1, the customer initially starts at <http://www.firststopsports.com>. The online customer has selected the Denver Broncos

(step 1a.) and then continued with a selection of a mini replica helmet (step 1b.) Figure 2 is an actual screen shot showing what the customer experiences so far.

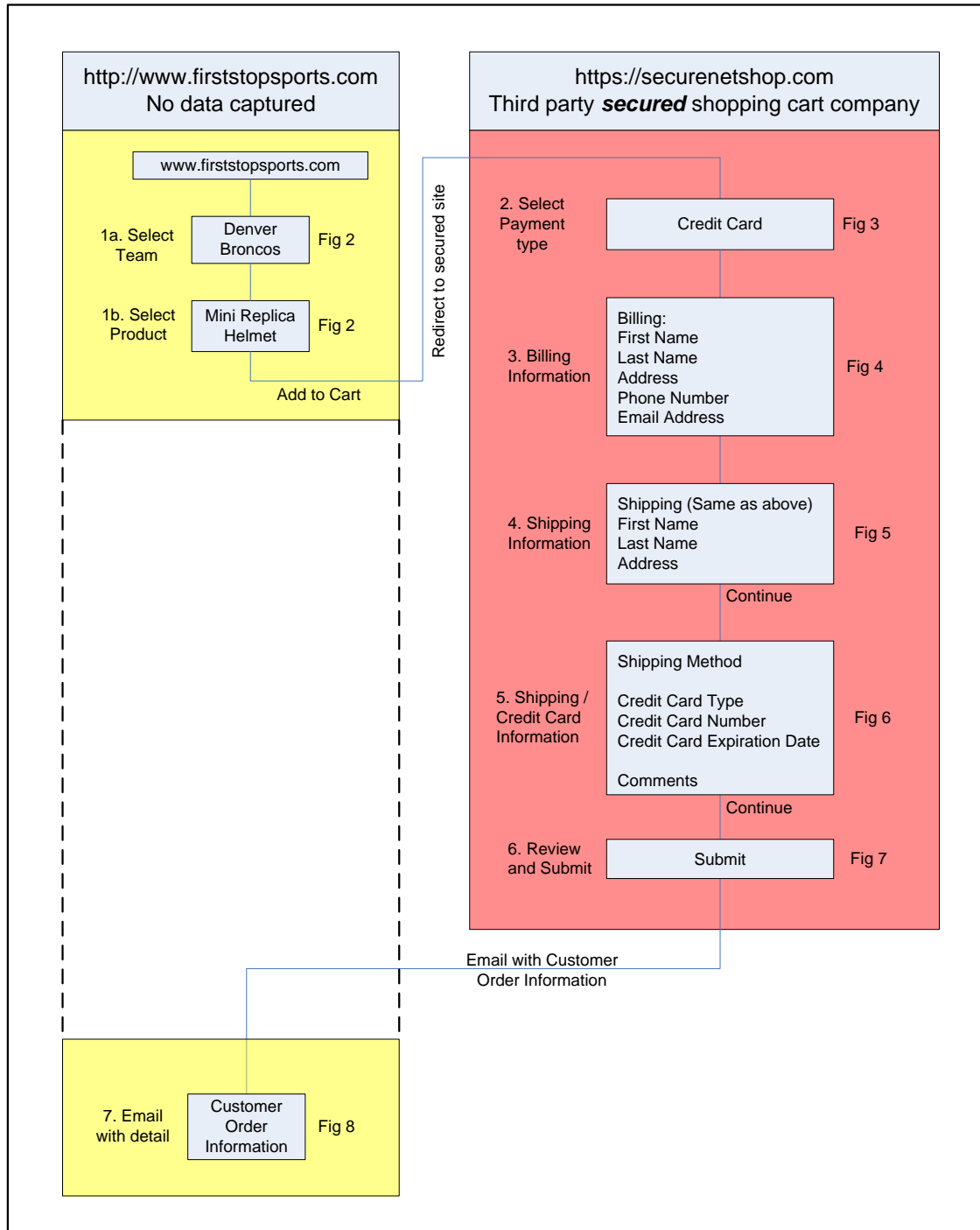


Figure 1: Overview of ordering process and where data is retained

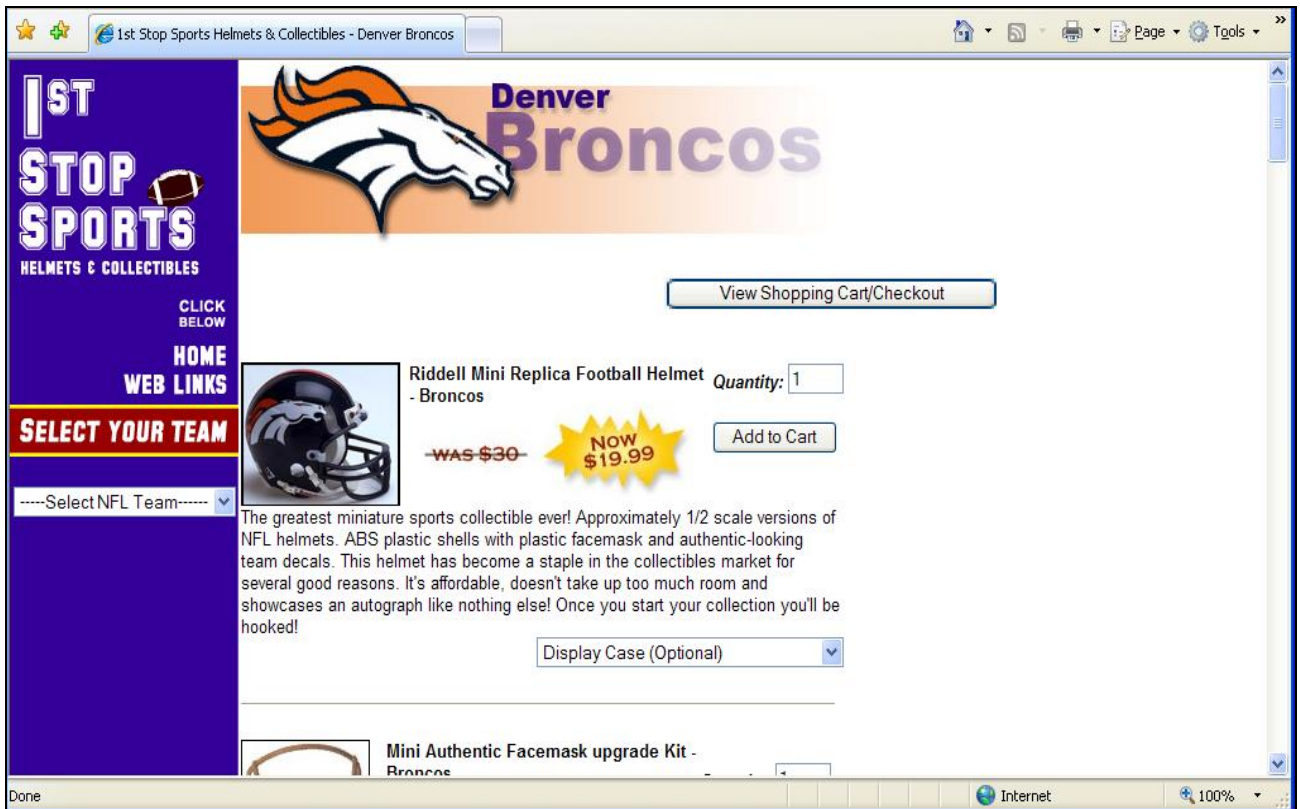
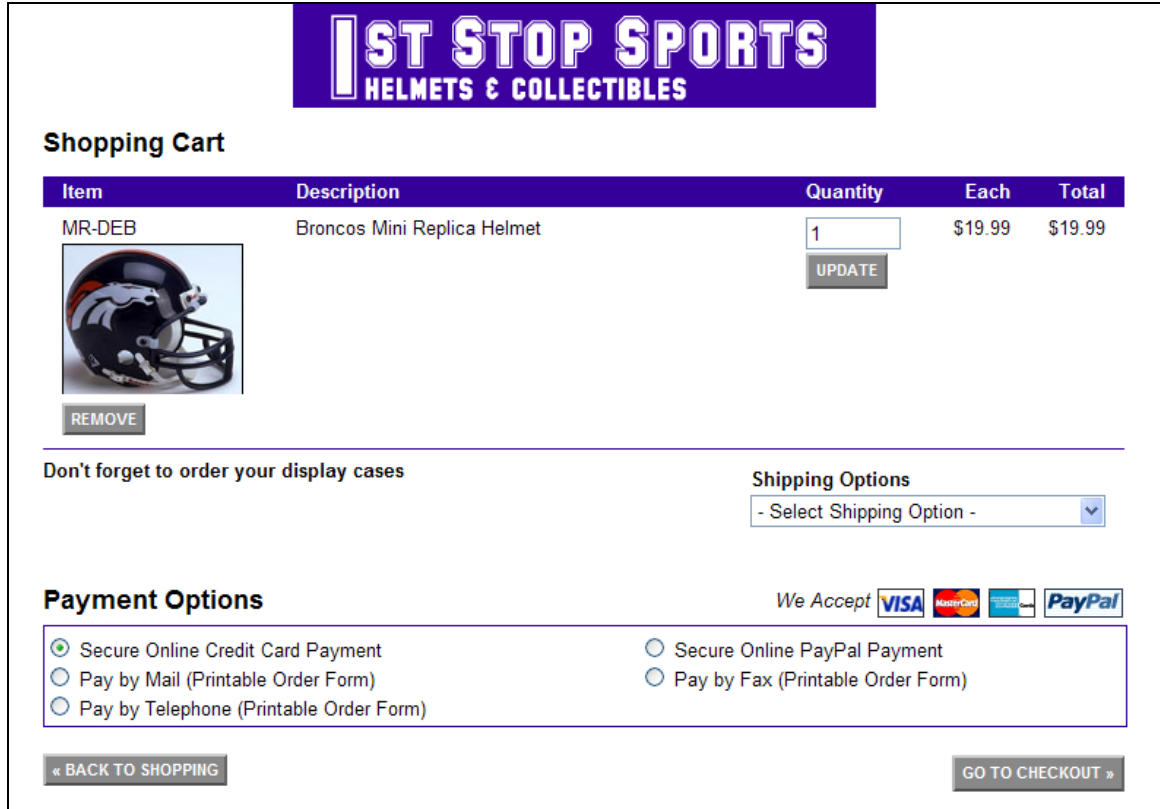


Figure 2: Add to Cart selection


Once the customer clicks the 'Add to Cart' button as shown in Figure 2, to place this item into the shopping cart, their data is transferred from First Stop Sports to the 3rd party shopping cart company's web site. First Stop Sports no longer controls or has access to any customer actions or data at this point. This is solely the responsibility of the 3rd party. (Note: All actions from Figure 1- step 2 through step 7 are conducted on the 3rd party Shopping Carts Company's website).

Step 2: Figure 3 is a screen shot of the first screen at the shopping cart company's website. One can see that the look and feel of the First Stop Sports is transparently transferred to the new company, and the customer is oblivious to the fact of any transfer. Figure 3 has many of the common features of <http://www.firststopsports.com>. For example; the logo, the image of the product ordered, the overall color and all the

pertinent information about that product all appear exactly how they would on First Stop Sports' website.



The screenshot displays the 'First Stop Sports' website's shopping cart. The header features the store's logo: '1ST STOP SPORTS' in large white letters on a purple background, with 'HELMETS & COLLECTIBLES' in smaller white text below it. The main heading is 'Shopping Cart'. Below this is a table with the following structure:

Item	Description	Quantity	Each	Total
MR-DEB 	Broncos Mini Replica Helmet	1 <input type="button" value="UPDATE"/>	\$19.99	\$19.99

Below the table is a 'REMOVE' button. A horizontal line separates the cart items from the checkout section. On the left, it says 'Don't forget to order your display cases'. On the right, under 'Shipping Options', there is a dropdown menu showing '- Select Shipping Option -'. Below this, under 'Payment Options', it says 'We Accept' followed by logos for VISA, MasterCard, American Express, and PayPal. There are five radio button options for payment: 'Secure Online Credit Card Payment' (selected), 'Pay by Mail (Printable Order Form)', 'Pay by Telephone (Printable Order Form)', 'Secure Online PayPal Payment', and 'Pay by Fax (Printable Order Form)'. At the bottom left is a button labeled '« BACK TO SHOPPING' and at the bottom right is a button labeled 'GO TO CHECKOUT »'.

Figure 3: Shopping Cart - Payment Options

Once the customer has selected the payment method (in Figure 3), and has clicked on the 'GO TO CHECKOUT' button, the customer is directed to the next screen.

Step 3: The customer continues the ordering process and now is prompted to enter billing information as shown in Figure 4. The fields in this section are verified, for example an email address must contain a "@", and the phone number and zip code fields must contain numbers.

1ST STOP SPORTS
HELMETS & COLLECTIBLES

Billing Information

Billing address must match the address associated with your credit card account.

First Name:	<input type="text" value="Paul"/>
Last Name:	<input type="text" value="Hughes"/>
Address:	<input type="text" value="123 Elm St"/>
Address (line 2):	<input type="text"/>
City:	<input type="text" value="Denver"/>
State/Province: (USA or Canada)	<input type="text" value="California"/> ▼
Region: (Outside USA and Canada)	<input type="text"/>
ZIP/Postal Code:	<input type="text" value="80206"/>
Country:	<input type="text" value="United States"/> ▼
Phone:	<input type="text" value="303-555-1212"/>
E-mail:	<input type="text" value="paul.hughes@regis.edu"/>

Bold = Required Field.

Figure 4: Billing Information

Step 4: Once the billing information of the customer is entered the shipping information screen is displayed as in Figure 5. The customer has the option of selecting the same billing address and shipping address. Once both the billing and shipping address information are validated by the 3rd party shopping cart company, the customer is directed to the shipping method and detailed credit card information screen by hitting the “Continue” button.

Shipping Information

☒ Same as Billing Information.

First Name:

Paul

Last Name:

Hughes

Address:

123 Elm St

Address (line 2):

City:

Denver

State/Province:
(USA or Canada)

California

Region:
(Outside USA and Canada)

ZIP/Postal Code:

80206

Country:

United States

Bold = Required Field.

Orders are typically processed the following business day

CONTINUE ►

◀ GO BACK

Figure 5: Shipping Information

Step 5: Figure 6 displays the available shipping methods and gives the customer the capability to enter in their credit card information. Additionally, the customer can enter a detailed comment and an entry in the “How did you hear about us?” field. Once the 3rd party shopping cart company has validated the customer’s credit card information, the customer is transferred to a summary page by hitting the “Continue” button.

The screenshot displays the checkout interface for '1ST STOP SPORTS HELMETS & COLLECTIBLES'. It features a purple header with the store's name. Below this, a section titled 'Please select a shipping method' offers two options: 'Ground (4-6 business days) - \$6.00' (selected with a green dot) and 'Canada/Hawaii - \$32.00' (unselected with a blue circle). The next section, 'Credit Card Information', contains fields for 'Credit Card Type' (set to 'Visa'), 'Credit Card Number' (masked with asterisks), and 'Credit Card Expiration Date' (set to '01 - January' and '2003'). A 'Customer Comments' text area and a 'How did you hear about us?' dropdown menu are also present. At the bottom, there are 'CONTINUE' and 'GO BACK' buttons.

Figure 6: Shipping Method - Credit Card Information

Step 6: If the credit card information, billing and shipping address of the customer are all verified and correct, the customer can see a summary of their order and commit to the order by pressing the “Submit Order” button as displayed in Figure 7. The customer has one last chance to check over their order. Note the customer’s highly sensitive data, their credit card number, is blocked out and masked with “*****”. The total dollar amount of order, shipping methods and associated costs are displayed. Once submitted, the customer’s credit card will be charged accordingly for the items and products selected.

1ST STOP SPORTS
HELMETS & COLLECTIBLES

Review Your Order

Item: MR-DEB	Quantity: 1
Description: Broncos Mini Replica Helmet	
Price (each): \$19.99	Item Total: \$19.99

Billing Information
Paul Hughes
123 Elm St
Denver, CA 80206
United States

Phone: 303-555-1212
E-mail: paul.hughes@regis.edu

Shipping Information
Paul Hughes
123 Elm St
Denver, CA 80206
United States

Payment Method: Credit Card
Credit Card Type: Visa
Account Number: *****1111
Expiration Date: 12-03

Shipping Method: Ground (4-6 business days)

Subtotal:	<u>\$19.99</u>
Shipping and Handling:	<u>+\$6.00</u>
TOTAL DUE:	<u>\$25.99</u>

SUBMIT ORDER ►

◄ GO BACK

*To process your order, click on the "Submit Order" button **once**. Clicking on the "Submit Order" button more than one time may result in multiple charges.*

Figure 7: Review Order

As mentioned earlier, up to this point all customer information is processed and only retained in the secured 3rd party shopping cart company's website.

Step 7: Once the customer's credit card has been charged, an email is sent out from the 3rd party shopping cart company to both the customer and First Stop Sports confirming the order as seen in Figure 8.

```
=====
First Stop Sports - Online Order
=====
Invoice No.: 1001   Order No.: 75118175   Date: 01/18/2009

SHIP TO:
Paul Hughes
123 Elm St
Denver, CA 80206
United States

BILL TO:
Paul Hughes
123 Elm St
Denver, CA 80206
United States
303-555-1212
paul.hughes@regis.edu

Payment Method: Credit Card
Credit Card Type: Visa
Account Number: *****1111

ORDER DETAILS:
Item: MA-ARC
Quantity: 1
Description: Denver Broncos Mini Replica Helmet Price (each): $19.99 Item
Total: $19.99

-----
Subtotal: $19.99
Shipping (Ground (4-6 business days)): +$6.00 Grand Total: $25.99
-----

Comments:

CUSTOMER TRACKING:
IP Address: 96.246.91.156
Purchased From: http://www.firststopsports.com Found By: Other

PAYMENT PROCESSOR RESPONSE FIELDS:
Approval Code: 552069
AVS Result Code: Y
Transaction ID: 22651111698
```

Figure 8: Email confirming order

Note: for security purposes the customer's credit card information is still not displayed on the email.

Processing the order

Once the customer has completed their order and the credit card information has been verified and processed, an email is sent to First Stop Sports detailing the customer's specifics (Figure 8). There is no transfer of data, only an email, typically one page in length, confirming the order has been completed. The 3rd party credit card processing company does not have a method to transfer any pertinent customer ordering information, except in an email. The order processing department of First Stop Sports then has to complete the order by two of the following methods:

- **Ordered item in inventory:**

If the item ordered is in inventory, it is packaged and shipped within two business days. Most items larger than Mini Replica helmets are not kept in inventory and have to be ordered and drop shipped from selected vendors.

- **Ordered item not in inventory:**

If the item ordered from the customer is not in inventory, First Stop Sports has to copy data from the email and paste it into a newly generated email and send it to one of several vendors for them to package and drop ship. This creation of the new email and transferring data is a timely process, depending on the complexity and quantity of the items ordered. Even at this point in the process, First Stop Sports does not update any fields in any database. The data resides with the email system and is archived.

1.3.2 Updating the accounting system

In the current production website of First Stop Sports, only item selection (i.e. Denver Broncos mini helmet) data is processed on <http://www.firststopsports.com>. Once

the item has been selected, that customer gets transferred and all further processing and data capturing is performed at the 3rd party shopping cart company's website.

1.4 Goals of Project

The goals of this project are to upgrade an existing simple website and incorporate a data acquisition system with requirements as follows:

- Maintain current look and feel

- Implement a relational data base

- Host the web site locally

Hosting the website locally will minimize operational costs and allow First Stop Sports to gain full control of the website and customers data. From a business perspective, the updated processes will increase productivity and minimize costs. Too many manual steps are time consuming and prevent the owner of the business from focusing his efforts on business expansion. The new system will enable the following:

A. An Increase in Revenue:

With the data maintained locally and within reach, First Stop Sports can reduce excess inventory. Reports can be created that will provide accurate inventory availability information. These advanced inventory reports will manage the process of faster and more accurate replacement of inventory. Threshold levels can be set and then proactively notify management when those levels have been met or exceeded. The process of automatically re-ordering those replacement products from the vender and additionally grouping those items would translate into fewer orders placed with the vendor to maintain local inventory. Those reduced orders from the vendors or suppliers, would reduce shipping costs and take advantage of vendor bulk ordering discounts. Time and

effort would be decreased for staff members to complete the ordering process from an internal perspective. Currently, staff members of First Stop Sports manually transfer data from original customer's email (products ordered, customer information, shipping address, etc...) and manually enter the data to accounts receivable in accounting system (QuickBooks).

B. An Increase In Marketing and Business Development Efforts:

With available historical customer ordering data and data mining techniques, customer profiling can be obtained. With knowledge of previous customer ordering history, including dates of orders, teams and products selected, effective and direct marketing campaigns can be initiated. Electronic newsletters can be generated from that data and produce marketing campaigns in the following areas:

- Helmet of the month club
- Notification of changes in sport teams logos, colors and equipment
- Advanced ordering in areas of team popularity to possibly reduce customer shipping charges
- Specialized and limited availability items
- Frequent customer discounts notifications and coupons

C. An Improvement in Customer Service:

The capability of profiling can be achieved with captured historical data and produce a unique customizable experience for each customer. As a returning customer visits the web site, they can be notified of items and products that similar customers have ordered in the past. Additionally, the web site can be customized to focus on specific teams or products through the customers past ordering history. Returning customers that

show a history of ordering items can be made aware of discounts and coupons and other specials offered.

D. An Improvement in Information Availability:

With all the data from the data acquisition system, improvements to the accuracy of the management reporting system will be maintained. Reports with accurate customer information will be created on the following concepts; customer ordering history, ordering trends, Profit / Loss, and Accounts Payables forecasting.

1.5 Barriers to Success

Several barriers and issues to implementing a fully integrated data acquisition system into First Stop Sports current website were identified. The validity and accuracy of the data from previous orders, prior to the prototype data acquisition system was a concern. Because this project was an enhancement to an existing ecommerce website, data collected from historical customer orders would have to be manually input into the database. There is the possibility of data being incorrectly entered while being transferred from the printed emails to the data base. There are over several thousand orders currently in email form that would need to be migrated. Any discrepancies between what previous customers had ordered and accuracy of actual orders would distort any historical trending and prevent accurate customer profiling.

An additional barrier would be the increased load placed on the server with both typical web traffic and additional load from data transfers to the locally hosted data base. Initially, for this prototype, the web server (IIS) and the database (Microsoft Access) would be maintained on the same server. The author anticipates that Microsoft Access would be sufficient for the current amount of customer data, but eventually, an upgrade to

an enterprise wide database would be needed. Further research would be required to determine exactly when that point would be reached and an upgrade would be a necessity.

Additional barriers were budgetary constraints. Due to the limited budget available for this project, software choices were limited. Microsoft Access was chosen in lieu of an enterprise level database. This project was considered a prototype, and the author's home network and internet access capability could prove a limiting factor.

1.6 Scope of Project

It is the scope of this project to investigate, design and develop a prototype data acquisition system. This prototype would only focus on one specific product line, but it would need to have the same look, feel and complete functionality as the existing eCommerce website, <http://www.firststopsports.com>. The changes would have to prove seamless to the customer and all the customer's ordering information would be captured in a relational database. To minimize the impact on business, the enhancements would have to easily migrate into the existing, relatively static HTML code.

1.7 Summary

This project initiated a design to enhance the business development needs of First Stop Sports. A data acquisition system was needed to capture customer ordering information and then to analyze and create marketing information to grow the business and increase revenue.

Chapter 2: Review of Literature and Research

Chapter 2 describes the research done on similar online ordering systems and what they can provide. When this project was first conceived, there were not many online website creation and hosting companies. As described earlier, First Stop Sports is a small eCommerce website created by the author to sell sports memorabilia online. The author initially started purchasing these items as a typical customer would from a brick-and-mortar store at the local mall. The author then decided to create his own online store as he recognized the power of the Internet and the limited variety available at these local stores. After research and minimal construction of HTML code, the online store, <http://www.firststopsports.com>, was launched. First Stop Sports had initiated several agreements with vendors to provide them with all the necessary advertised items. Due to the negligible experience of web site creation, the author developed the web site with simple, static HTML web pages. This simple method was very effective and the process of credit card transactions would be diverted to a 3rd party secured credit card processing company. However, with this process in place, all customer information was transferred to the credit card processing company and no internal records or data were maintained. Once the customer's credit card had been verified and then processed, an email was sent to First Stop Sports stating that a transaction had been completed, see Figure 1. The next evolution of that business model was to try capture all the customer information, but not process any credit card transactions. The data processing could be achieved only if the website captured that info before sending it off to the credit card processing company.

2.1 Review of Existing Solutions Available

Research was conducted on several hosting and complete online service providing companies. Two solutions researched and discussed in this chapter were first, Go Daddy's Business Hosting Solutions, and second, Network Solutions' Web Sites and Hosting Services. There are numerous companies out there that have similar solutions, but these two have set the standard for online hosting service companies. These two companies are iconic giants in the web hosting and online business solutions arena with Go Daddy ranking number one and Network Solutions number two.

Research was conducted on online hosting companies with two main areas of focus: cost savings and ease of implantation. The following sections depict a summary of the findings with special emphasis on the cost of the solution and its ease of implementation into First Stop Sports current environment.

2.1.1 Godaddy.com

Go Daddy (<http://www.godaddy.com>) has grown at a fantastic pace since its founding in 1997 by Bob Parsons. It was initially founded as Jomax Technologies and was primarily a domain name registering site. Go Daddy has since grown to become one of the premier Internet domain registrars and web hosting companies, which also sells e-business related software and services.

The following sections illustrate screen shots and / or snippets taken from Go Daddy's website depicting services and pricing.

Save time and money! We provide you with:

- Your own Web site consultant to guide you through every step of the process
- Your own personalized dream Web site design
- All the copy you need to get started—you provide additional copy when you're ready
- Monthly updates to keep your site and content fresh and up-to-date
- Hosting—With 99.9% guaranteed uptime and 24/7 support, your site is always up and running

For just \$49.99/mo, our design professionals turn your wishes into reality

- 5-page Web site with Hosting
- Your choice of [professionally designed template](#)
- 24/7 access to your Design Manager—View and approve designs, send us files and leave feedback
- 30 min. of monthly site updates
- [Toll-free 800 Number - FREE Trial](#)
- Access to your site via an easy-to-use site editor
- 4 GB Disk Space
- 200 GB Bandwidth
- 1000 Email Accounts
- Unlimited Email Forwards
- Also includes [FREE extras](#) like Traffic Blazer® and Traffic Facts!
- **Traffic Service:** Let us submit your site to popular search engines and directories with the FREE Traffic Blazer® account included with your site.
- **Traffic Analytics:** Let us setup your FREE Traffic Facts account and send you Web site traffic reports via email.

[†]\$170 value based on Google AdWords Credit, Microsoft adCenter Credit, Traffic Facts, Traffic Blazer and SSL Certificate. Comparison prices are accurate as of 11/05/08 and are subject to change. SSL Certificate will renew at regular renewal rate.

^{††}An early termination fee of \$150.00 will be applied to Build It For Me plans cancelled within six months of signup.

^{†††}An early termination fee of \$500.00 will be applied to Custom Build It For Me plans cancelled within six months of signup.

Figure 9: Summary of Go Daddy's services

The first snippet shown in Figure 9 describes some of the services that are included with one of Go Daddy's Professionally Designed websites. Note the limitations of a 5 page website with restricted choices of website design templates. These design templates are discussed with the next screen shot (Figure 10). Go Daddy does offer relatively large disk space to store web site files and pictures (4 GB), with a huge amount of email accounts available, 1000 with unlimited forwarding included. Go Daddy imposes early termination penalties of \$150 to \$500 if the plan is cancelled within six months. The cost for Go Daddy to design this limited website is listed at \$49.99 per month with an approximate annual total cost of \$600.00. This solution may suffice for a new company with no baseline of a pre-existing web site. However,

<http://www.firststopsports.com> has been in existence since 2000 and would not be considered a good candidate for this service.

Go Daddy offers numerous predesigned web site templates. There are several categories available with many related design themes within those categories. Depicted in Figure 10, is the thumbnail view of available Sports templates that Go Daddy offers to their Business Hosting Solution. First Stop Sports would be best associated with this Sports category. Go Daddy has a total of 20 sports templates available with this category, and unfortunately they all have a very a similar look and feel.

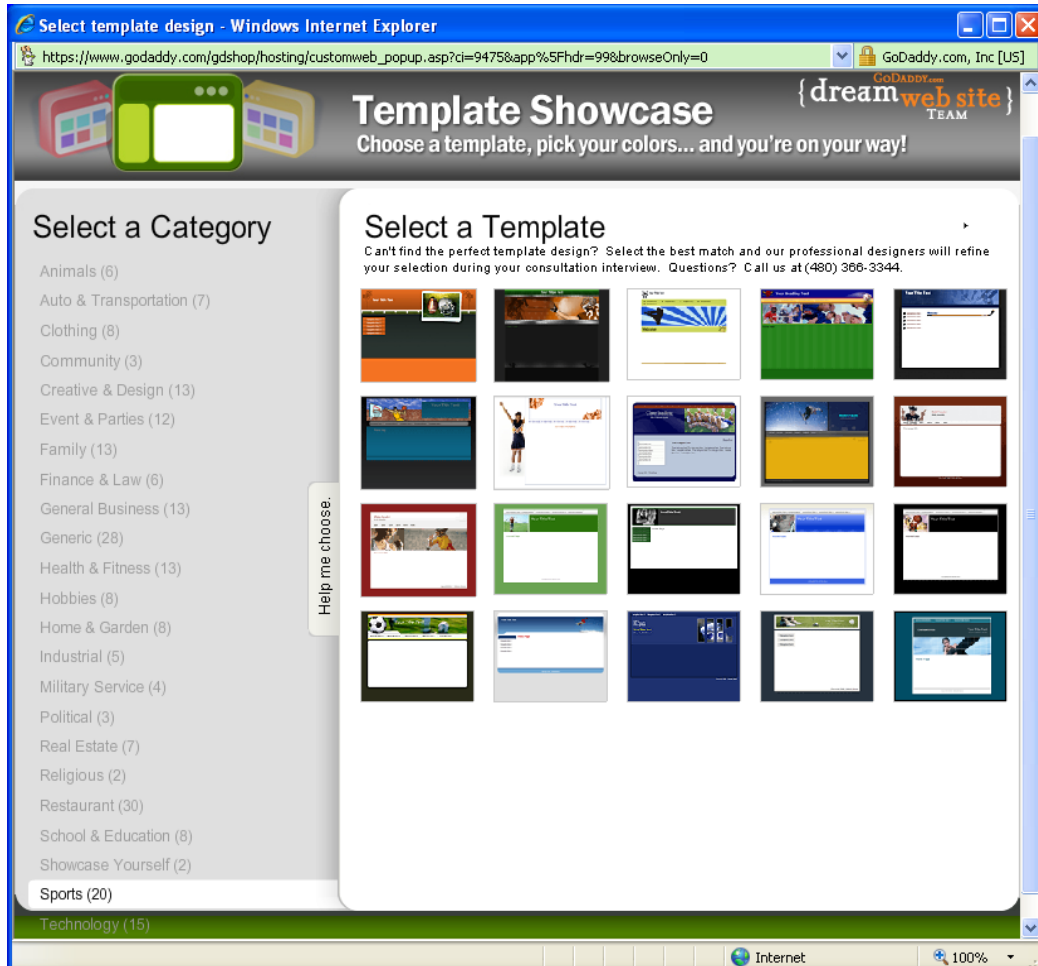


Figure 10: Go Daddy's Available templates

If First Stop Sports had to choose between one of these predesigned Sports templates, it could not retain its current branding of the existing website. First Stop Sports current color scheme and webpage layout would have to be sacrificed if one of these templates were implemented.

The next screen shot (Figure 11), shows options and pricing for Go Daddy's Business Identity Design options.

Business Identity Design Service - Windows Internet Explorer

http://www.godaddy.com/gdshop/logo

File Edit View Favorites Tools Help Links >>

Business Identity Design Service

Domains Hosting Email Site Builders Business SSL Certificates Resellers

Go Daddy Home > Business Identity Design Service > Checkout

Business Identity Design
Brand your business with a professional look

► Logo, Business Cards, Letterhead/Envelope
► Arrives Ready To Print

Put your best foot forward with a professionally designed logo, letterhead/envelope and business card package. Often the first thing a prospective customer sees, these materials can make or break the all-important first impression. Do it right with fresh, original designs from our Dream Design Team. You provide the direction, we do the work. It's hassle-free!

Standard Business Identity Package	Deluxe Business Identity Package	À La Carte
<ul style="list-style-type: none"> • Standard Logo • Business Card Design • Letterhead Design – Including Envelope <p>Just \$1,119.98* Save 20%</p> <p>Add to Cart</p>	<ul style="list-style-type: none"> • Deluxe Logo • Business Card Design • Letterhead Design – Including Envelope <p>Just \$1,719.98 Save 20%</p>	<ul style="list-style-type: none"> <input type="radio"/> Standard Logo \$499.99 <input type="radio"/> Deluxe Logo \$1,249.99 <input type="checkbox"/> Business Card Design \$349.99 <input type="checkbox"/> Letterhead Design – Including Envelope \$549.99

Details Logo Gallery - Standard Logo Gallery - Deluxe Support

- Design process begins with phone consultation with a Dream Design Team designer.
- Three designs to choose from on logo projects; two on business card and letterhead/envelope

Done Internet 100%

Figure 11: Go Daddy Business Design Options

First Stop Sports has already made an investment in its identity and branding logos and would not be interested in changing the existing company logos.

Go Daddy's Business Identity Design options are pricey and would not be a good investment for First Stop Sports and their business development needs.

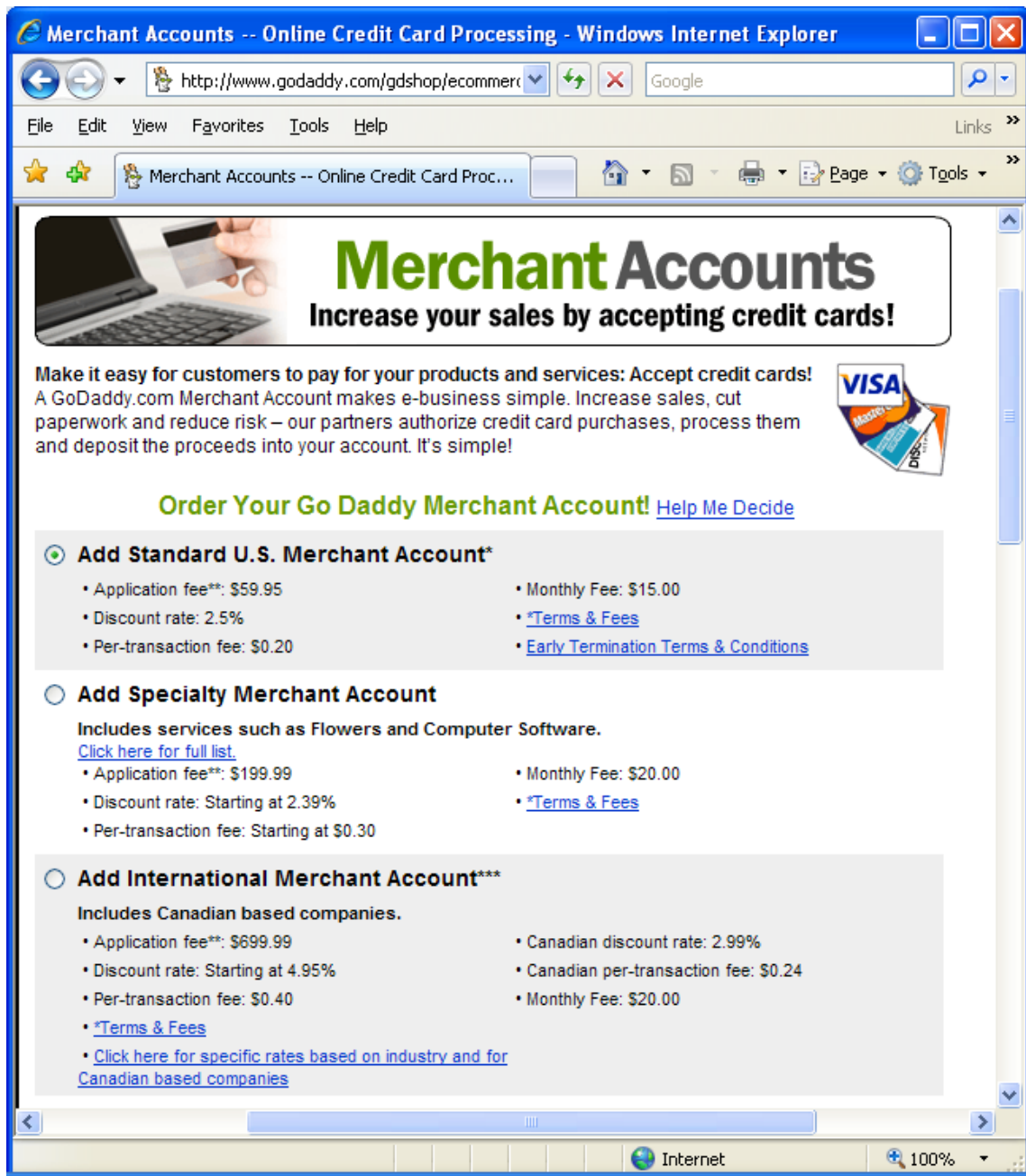


Figure 12: Go Daddy Merchant Account Options

Figure 12 shows the pricing options for creating a merchant account through Go Daddy's online services. First Stop Sports has in place a long term agreement with a 3rd party company, Authorize.net (<http://www.authorize.net>). Authorize.net is a subsidiary of CyberSource Corporation and has been in partnership with First Stop Sports since its initial existence. First Stop Sports has stated that there is no need to cancel this pre existing relationship with Authorize.net unless there is a substantial cost savings. Go Daddy's merchant account option prices are reasonable and competitive, and very similar to what First Stop Sports already has in place with Authorize.net. Therefore, First Stop Sports will not be migrating to Go Daddy's merchant account option.

The next screen shot (Figure 13) displays the pricing options for a shopping cart through Go Daddy's online services. There are limitations on the different options available, most notably the limitations on products catalog. The 'Economy Edition' only supports a web site with 20 products while the 'Deluxe Edition' supports a website with only 100 products. First Stop Sports has over 500 products currently available on their existing web site, with no limitation on expanding to additional products. The only solution available to satisfy First Stop Sports' needs would be the 'Premium Edition', which is much costlier than First Stop Sports current shopping cart provider, Secure Net Shop (<http://www.secureneshop.com>). First Stop Sports has decided not to pursue hosting an internal shopping cart for security and complexity related issues.

Quick Shopping Cart®
Start selling products online in minutes!
From **\$9.99** per month
NO SET-UP FEES!

Sell online, accept PayPal® and credit cards, and offer shipping! Works with QuickBooks®!

Google eBay Marketplace Link PayPal VISA MasterCard DISCOVER AMERICAN EXPRESS UNITED STATES POSTAL SERVICE UPS QB

Online Sales are expected to hit \$144 billion in the U.S. and £78bn in the UK by 2010. Isn't it time you got your piece of the pie? With Quick Shopping Cart, you can create and publish a stand-alone Internet store or add one to your existing Web site in a matter of minutes. Accept PayPal® and credit cards, offer multiple shipping options, issue coupons -all via your secure site. And there's NO "percentage of sales" fee!

[View all Features](#) [View Featured Stores](#) [Product Tour](#)

THREE plans to choose from! Includes Built-In Hosting!

Economy Edition 20-Product Catalog	Deluxe Edition 100-Product Catalog	Premium Edition Unlimited-Product Catalog
<input type="radio"/> 1 mo: \$9.99/mo	<input type="radio"/> 1 mo: \$29.99/mo	<input type="radio"/> 1 mo: \$49.99/mo
<input type="radio"/> 12 mo: \$9.49/mo Save 5%†	<input checked="" type="radio"/> 12 mo: \$28.49/mo Save 5%†	<input type="radio"/> 12 mo: \$47.49/mo Save 5%†
<input type="radio"/> 24 mo: \$8.99/mo Save 10%†	<input type="radio"/> 24 mo: \$26.99/mo Save 10%†	<input type="radio"/> 24 mo: \$44.99/mo Save 10%†
<input type="radio"/> 36 mo: \$8.49/mo Save 15%†	<input type="radio"/> 36 mo: \$25.49/mo Save 15%†	<input type="radio"/> 36 mo: \$42.49/mo Save 15%†
	Add an SSL Certificate to accept credit cards on your site.	
	<input type="checkbox"/> Standard SSL , \$29.99	

Figure 13: Pricing on Go Daddy Options

In conclusion, Go Daddy's Business Hosting Solution would not prove a viable option for First Stop Sports. It does not meet the criteria of providing a solution that is cost effective and easy to implement. Thus, First Stop Sports will not be implementing the solution from Go Daddy.

2.1.2 Network Solutions

Network Solutions (<http://www.networksolutions.com>) has very similar products and solution sets to that of Go Daddy's. Network Solutions has its own suite of applications available, with both companies having very large footprints in the webhosting and domain name registering arena. Figure 14 shows a screen shot of 'Network Solutions E-Commerce Web Site Solutions'.

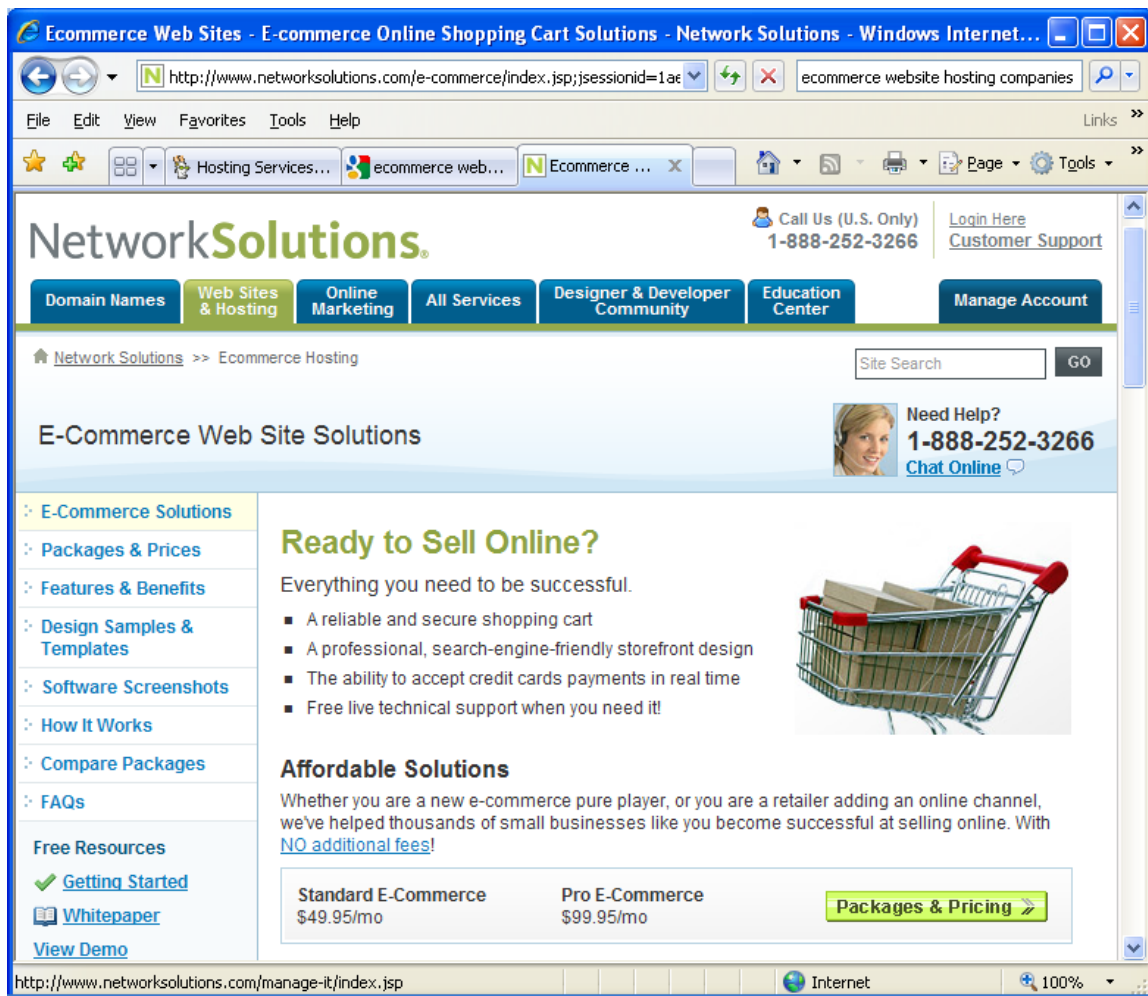


Figure 14: Available options at Network Solutions

Network Solutions was the number one register of domain names at one point, but has since lost that title to Go Daddy. With recent advertising and provocative, and a

highly viewed Super Bowl commercial, Go Daddy has surpassed Network Solutions as the largest domain registration site. However, Network Solutions offers a suite of applications that is robust and capable of providing First Stop Sports with a possible eCommerce hosting solution. A summary of services and options are displayed in Figure 15. Network Solutions available suite of options appears to be very granular.

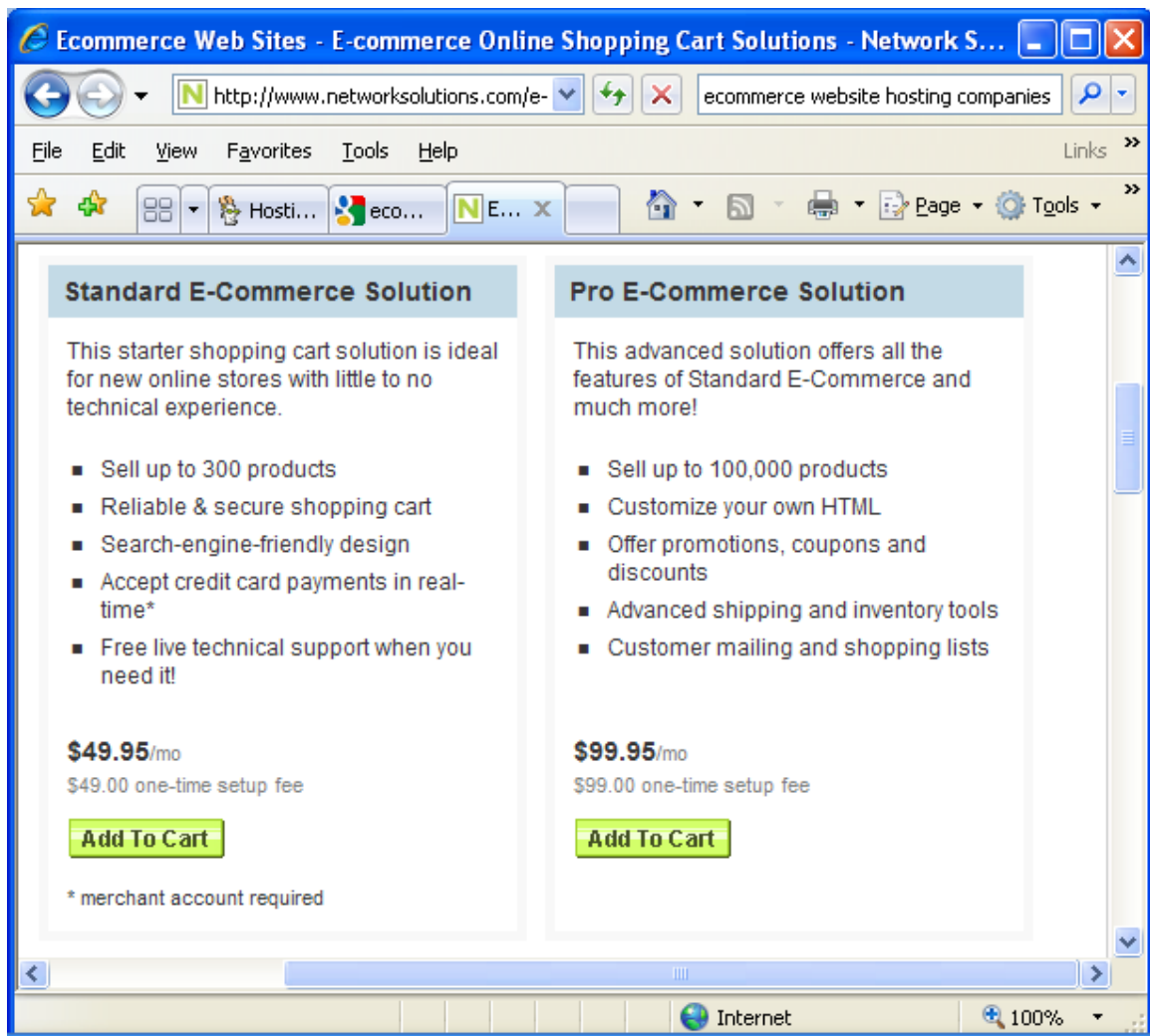


Figure 15: Summary of available options

Detailed in Figure 16, is a comparison of the differences between the options available for the Network Solutions' 'Standard Package' and corresponding 'Professional

Package’. There is quite a difference in options available between the two and the cost associated between the two is also quite substantial. The costs for the ‘Professional Package’ is double that of the ‘Standard Package’.

Compare Standard and Pro E-Commerce Packages	Standard	Pro
Storefront Design and Customization		
Pre-formatted storefront design templates	✓	✓
Web-based store administration tool	✓	✓
WYSIWYG Editor	---	✓
Fully customizable site design and HTML	---	✓
Integrate core shopping cart code into your HTML	---	✓
Customizable Product Display	---	✓
Store set-up checklist	✓	✓
Customized product search and site browsing	---	✓
Custom Feedback Forms	---	✓
Inventory Management		
Sell Electronic Products	---	✓
Maximum number of products	300	100,000
Maximum number of categories	1,000	2,500
Multiple product variations and options	✓	✓
Number of Product category and subcategory levels	2	5
Product Customization	✓	✓
Bulk upload of product information	---	✓
Bulk Price Adjustments	---	✓
Unlimited number of photos for each product	---	✓
Automated thumbnail image creation per product	✓	✓

Real-time inventory control	✓	✓
Drop Shipping	---	✓
Order Fulfillment		
Back-End Order Entry	✓	✓
Order Editing Capability	✓	✓
Customize Order Confirmation Emails	---	✓
Payment Processing		
Compatible payment gateways	✓	✓
Accept credit card payments with real-time payment gateway (merchant account required)	✓	✓
Accept payments with PayPal® Express and Google® Checkout	✓	✓
Offline Payment Options	✓	✓
Offline credit card processing	✓	✓
Promotions and Merchandising		
Discount offers	---	✓
Product Reviews	---	✓
Email a Friend	✓	✓
Featured Products	✓	✓
Coupon codes and gift certificates	---	✓
Display related products for cross-selling	✓	✓
Product Feeds for shopping comparison sites.	✓	✓
Feature selected products on homepage	✓	✓
Shipping & Tax Tools		
Shipping & Handling Charges on Specific Products	---	✓
UPS®, Fed Ex® & USPS® integration with real time rates and calculations	✓	✓

Automated tax rates and calculations	✓	✓
Customizable shipping rules and fees	---	✓
Flat rate and/or free shipping offers	✓	✓
International shipping and location restriction	---	✓
Web Site Promotion and Search Engine Marketing		
Google® AdWords credit	\$50 for monthly and annual plans	\$100 for monthly plans \$200 for annual plans
Search engine optimized code	✓	✓
Search engine optimization tips	✓	✓
Customers		
Mailing Lists	---	✓
Mailing lists are important marketing tools that help boost sales and customer loyalty. Manage and export your mailing lists to companies such as Constant Contact®, to deliver email messages to your subscribing customers.		
Express checkout for registered users	✓	✓
Customers can track and view order history	✓	✓
Shopping Lists	---	✓
Checkout Questions	✓	✓
Multiple Pricing Levels	---	✓
Reporting and Statistics		
Site reporting	✓	✓
Google® Analytics integration	✓	✓
Integrated with QuickBooks® Financial Software and QuickBooks® Point of Sale	✓	✓
Customer Support		
Free 24/7 Real-Person Customer Service™	✓	✓
Frequent software updates	✓	✓

Online community forum, training, and support	✓	✓
Web Site Hosting and Security		
FREE Domain Name with annual purchase	✓	✓
Ability to create sub domains	✓	✓
Hard disk space	200MB	2GB
Monthly bandwidth transfer limit	8GB	20GB
Integrated File Manager	- - -	✓
99.9% uptime rating	✓	✓
Shared 128-Bit SSL security	✓	✓
Full HTTPS/SSL support	✓	✓
HTTPS/SSL password restricted multi-level admin access	✓	✓
Nightly data backups	✓	✓
Multiple power source backups	✓	✓
Advanced data center security monitoring	✓	✓
CISP Certification	✓	✓
E-Mail		
Personalized Web mail and POP3 e-mailboxes	25	50
Aliases per e-mailbox	3	3
E-mailbox storage	1GB	1GB
Pricing	\$49.95/mo \$49.00 one-time setup fee	\$99.95/mo \$99.00 one-time setup fee

Figure 16: Available options on Network Solutions

Noticeable differences between the ‘Standard Package’ and the ‘Professional Package’ are as follows:

- a. Hard Disk space: 200 MB vs. 2 GB
- b. Number of Product Category and Subcategory levels: 2 vs. 5.

Currently First Stop Sports implements 3 levels of categories:

- i. Sport (NFL, NCAA, etc...)
 - ii. Team or Division (Denver Broncos, ACC, etc...)
 - iii. Product (Mini helmet, Full size helmet, etc...)
- c. Maximum number of products: 300 vs. 100,000
- d. Multiple Pricing Levels: not available vs. available
- e. Mailing Lists: not available vs. available

2.2 Summary

Chapter 2 summarized the research done on existing products and solutions readily available. Both Network Solutions and Go Daddy offer excellent solutions, however they are expensive and would not satisfy the needs and restrictions of First Stop Sports.

Chapter 3: Project Methodology

3.1 Research Methods Used

The goal of this implementation is to provide First Stop Sports with a software implementation plan that best supports their needs. This chapter will describe in detail the software methodology (System Development Life Cycle) that was implemented for this project.

In the classic Waterfall Model, each phase is fully completed before moving on to the next phase and there is no returning to the preceding phase once a subsequent phase

has begun. The phases consist of planning, analysis, design, implementation and maintenance. However, with a more modern approach, The Rapid Prototyping Model is an iterative method where steps can be repeated. After each step is completed, an iterative process can be implemented that will allow a return to any of the previous steps or phases. For each of the rapid prototyping phases, a description of what was accomplished and the purpose for completing that phase is required.

3.2 System Development Life Cycle Model

The following section describes the System Development Life Cycle model used in this project. Initially the Waterfall Model was decided on as the software SDLC, however it became evident that a combination of a Waterfall Model and a Rapid Prototype method would be best suited for this project. This combined methodology would consist of initially using the Rapid Prototype method and constructing the prototype site to determine the user's needs. That would then be used to support the traditional Waterfall Method. This approach decreased the development risks and overall timeframe while meeting the requirements of the overall design. The following sections describe the phases used.

3.2.1 Planning Phase

During the planning phase, the initial schedule was created. However, due to the fact that the team consisted of only one member, it was relatively simple to manipulate the schedule. The initial schedule was not adhered to, with many months in between tasks. With the hybrid approach used in this project, the schedule was not strictly followed. The planning phase was a very short process, knowing that the schedule may and would change.

3.2.2 Analysis Phase

The research and detailed requirements were completed in this phase. Most of the research was accomplished on the Internet as well by questioning peers who had similar small online businesses. Research on Go Daddy's Business Hosting Solution and Network Solution's E-Commerce Web Site Solutions were analyzed. This project was initially started several years ago. The initial concept of online businesses was self directed and not automated as it is today. However, with time and a continually evolving Internet, an online business has become much easier to create, maintain and operate. The focus of this research was to determine the cost of implementing one of the available solutions and the ease of integration into First Stop Sports existing production web site. Most, if not all of the concepts initially desired at the time this project was conceived were not available and would have been considered revolutionary. The requirement of this project is to complete this process of data acquisition and product integration as inexpensively as possible.

The inefficiencies of the existing system were identified, and due to the fact that First Stop Sports was managed by the same individual that was designing the new website there was no need to have formal meetings. The desired requirements were easily identified and the functionality of the desired upgraded website was known.

3.2.3 Design Phase

The management at First Stop Sports required there be minimal changes to the front-end website's look and feel. An additional requirement of the prototype was that the redesigned solution would easily integrate into the pre-existing web site,

(<http://www.firststopsports.com>) with minimal downtime or interference. With the

concept of minimal disruption to the production system, the design team decided to create a prototype system consisting of only a fraction of the products available from First Stop Sports. Once the prototype system was approved and accepted, the remaining process of fully migrating the entire web site with all of First Stop Sport's products would be easily achieved. Back end functional changes to the database could be performed offline without fear of affecting the production system.

The database design will be initiated (data fields, types, field lengths and constraints) and implemented in a development network, - the author's home network (LAN). The user interface and website look and feel will be finalized and fully operational in the development network.

The system requirements were met with the completion of this phase. The prototype design implemented a hybrid Waterfall and Rapid Prototyping method, so testing was done during the implementation phase. Most of the testing consisted of simple unit testing and bug fixing as appropriate. Due to the nature of the site, only one particular team (Denver Broncos) was actually tested after implementation of the new code. Once verified, the new code could be simply edited accordingly (pictures and references to specific teams). The major difference between teams and their items are simply their corresponding graphics and verbiage.

3.2.4 Implementation Phase

Most of the time spent on this project was in the Implementation phase. The initial creation of the development environment was needed before the database could be built. The web site hosting environment, IIS (Internet Information Services) was initiated in Windows Server 2000. There was no need for DNS registration, because all the

development was done internally within the developer's personal environment. Any DNS entries needed would be added to the local hosts file. The new HTML pages were created with ASP tags that would pass data to the database. The newly created HTML pages had the requirement to look exactly like the existing live production screens as viewed at (<http://www.firststopsports.com>). Any manipulation of the HTML code could not be visible or noticed by the online customer.

3.2.5 Maintenance Phase:

Once the prototype was active and testing was complete, the maintenance phase proved to be a relatively easy process to complete. The site still consisted of simple static HTML code, without any changes. The data base was created using Microsoft Access, and it was monitored for growth of data and overall network utilization.

3.3 Review of the Deliverables

The deliverables for this project consisted of a working website that had the ability to now store customer order information. A database was designed and developed to store the information from First Stop Sports into a relational database created in Microsoft Access. Data entered from the prototype site could be verified by the actual data from the production site. The two systems were run in parallel with data from the production web site, simulated and entered into the prototype site. An email is generated from the production site with all the details required to fulfill an order and that data was used in the development site.

The project also included the following deliverables:

- Requirements List – List of detailed requirements defined by the owner

- ERD – Entity Relationship Diagram that models the database and its components. It shows the relationships of the tables within the database. (see Appendix A)
- Final Presentation – A formal presentation of the project

3.4 Resource Requirements

The size and nature of the project did not require a lot of personnel, nor did First Stop Sports have the personnel to assist in developing, implementing and testing the redesigned prototype website. The author was, and is the owner and therefore performed the functions of business manager, designer and tester. The approach implemented for the prototype web site was more of a hands-on approach than a well-documented test scripting approach.

The hardware requirements for this project were as follows:

PC

LAN (Local Area Network)

Web Server – Internet Information Server (IIS) on Windows 2003

SQL Database - Microsoft Access

3.5 Terminology

LAN – Local Area Network is a network of personal computers, servers, printers and switches connected via Ethernet cables typically covering a small geographic area. First Stop Sports was able to take advantage of the author's home LAN.

IIS – Internet Information Server is a Microsoft Windows Server web service that is used to host a web application and publish web pages. The production website for First Stop Sports is currently hosted at a 3rd party web site hosting company. Any changes to the production website have to be performed offline and then the data has to be updated

via FTP. For this project, the newly designed website will be hosted locally on a Windows 2003 Server with IIS 6.0. Initially when this project was started, the website was designed on Windows 2000 and IIS 5.0.

HTML – Hyper Text Markup Language is a simple markup language that provides a means to describe the structure of text-based information in a document.

HTML denotes certain text as links, headings, paragraphs, and so on.

HTTP – Hypertext Transfer Protocol is communications protocol that is a request/response standard between a client (customer) and a server (<http://www.firststopsports.com>). The client makes a request to the server using a web browser to the responding server who stores or creates resources such as HTML files and images.

HTTPS – Hypertext Transfer Protocol Secure is a combination of HTTP and a network security protocol. HTTPS connections are often used for payment transactions on the Web.

ASP – Active Server Pages is a Microsoft server-side scripting engine used to dynamically generate web pages. The HTML code contains ASP tags, text and script commands. At the time this project was initiated, ASP was current technology and was implemented. It is realized that more modern and current technology (ASP.net and C#) is available.

SQL – Structured Query Language is a database computer language designed for the retrieval and management of data in relational database management systems.

Text Editor – is a type of program used for editing plain text files. In this project, Notepad was used to edit web pages make the static HTML code changes.

FTP – File Transfer Protocol is a network protocol used to transfer data from one computer to another through a network such as the Internet.

3.6 Summary

The completion of this phase of the project was a functioning prototype web site hosted on a local LAN. This project incorporated all the phases of the System Development Life Cycle. A successful project would be a prototype redesign of one of the product lines of the current production website, <http://www.firststopsports.com>. The prototype web site would incorporate ASP into its static HTML pages that would populate a Microsoft Access database with customer ordering information.

Chapter 4: Project History

4.1 How the project began.

In the spring of 2002, the author received approval to begin work on his professional project, “Development of an eCommerce website for a Small Sports Collectibles Company”. There were numerous circumstances at the time that made the author feel unable to complete the project at the time.

This project is a requirement of the MSCIT program at Regis University and it was an opportunity to make advancements to a web presence only sports memorabilia store, First Stop Sports. The goal was to automate the transfer of data from the online ordering process to a relational database for further analysis and business development. The new process of data capture would make data available for augmentation of the sales and marketing efforts for First Stop Sports. Currently only an email is generated and sent to the owner of the company once an order has been placed and the credit card of the

online customer verified. The owner, in turn would cut and paste pertinent data from the initial email sent from the 3rd party shopping cart company to the distributor or vendor of the associated products. The pertinent data would consist of the items ordered, the address of the customer and their email address. The transfer of data from the email to First Stop Sports order with their vendor was a very manual process and any history of the order was not archived. The only archived data was the saved emails, which could be printed and filed away. With the newly designed web site, data from the customer is stored in a relational database and can be mined at any time to produce numerous reports and marketing ideas, including:

- Repeating customers report
- Customer ordering date trending report
- Customer products ordered trending report
- Team trends report

First Stop Sports did not have a method to retrieve customer information on the specifics of their items ordered. They felt in order to grow the business a relational database with detailed customer information would be needed.

At the time of conception of this project, approximately May 2002, online hosting companies with built in ordering systems and secured shopping carts were only in their infancy. There were not many solutions available that could provide First Stop Sports with a complete hosting solution. First Stop Sports currently implements an electronic accounting system, QuickBooks. However, all data from the online ordering website had

to be manually transferred and updated into that accounting system. Hence, it was decided that a customer order tracking system would be an appropriate solution for the business needs. A prototype solution was created with a front end website, and with a backend Microsoft Access database that had the same look and feel as the current production website created in ASP. This prototype solution would be hosted internally on Microsoft Internet Information Services (IIS) web server.

4.2 Scope of the project

The scope of the project consisted of the following:

Investigate, design and develop a web site that is capable of the following business needs:

1. Prototype one team, but keep same look and feel as current website,
2. Integrate new code into static HTML code,
3. Store customer information into a relational database,
4. Make changes seamless to the customer,
5. Enable the creation of management reports that could accurately track customer ordering history, ordering trends, Profit / Loss, Accounts payables forecasting.

The following were deemed out of the project scope:

1. Complete full web site conversion
2. Security considerations
3. Load considerations on server (database and web server)
4. Create a process to automatically update the accounting system (QuickBooks)

4.3 Project Management Process

The author acted as the sole developer for the entire project, and had little experience acting as a project manager. However, with no external project sponsor and only the author acting in all roles, the common roadblocks of project management were minimized and avoided. This project initially considered a simple Waterfall approach, but soon realized that a hybrid Waterfall and Rapid Prototyping Method approach would be more suited.

Since the project had only one team member, the completion of the planning phase was easily achieved. A project plan was initially created and a project time-line developed. The planning phase actually began several months before the actual start of the project. The author, who owns First Stop Sports, had realized a deficiency in the ordering process and a desperate need for a data capturing system. Even though the website was fundamentally successful in its current state, a process of continual business development to grow the company was desired.

4.4 Project Milestones

The milestones corresponded with the phases of the project. The only milestone not achieved in an acceptable time frame was the overall completion of the project. The initial plan to complete the project was not adhered to and took a lot longer than expected. The author was very disappointed in the time frame to complete the project, but was very satisfied with the end result.

4.5 Changes to Project Plan

The project began very well. The progress was as expected but then some unexpected delays occurred. The overall design of the new website with the advanced

database interface went according to schedule. Most of the delays were experienced during the documentation of the project.

4.6 Evaluation of project goals

The project met the goals of an upgraded prototype to the existing website now using a backend relational database to capture customer ordering information. The prototype website would be hosted locally within the author's home network (LAN), but acted and felt like the production website of <http://www.firststopsports.com>. The groundwork for the next evolution of the project was in place. The project was initially designed to introduce ASP into the existing static HTML code to connect to the database. After the long delay from the project start, to completion, technological advancements in coding and programming languages have occurred. However, the existing programming language and website are still valid and applicable. The project was very challenging for the author, who had very little website development experience using ASP and database connectivity. Fortunately the process for developing websites, incorporating ASP, connecting to databases, and hosting websites are well documented. As mentioned earlier, there are now more advanced, user friendly and more widely accepted languages available. This project was considered a success and next evolution, as discussed later, should be achieved.

4.7 Summary

This project was a requirement for the completion of the MSCIT program at Regis University. The author knew of a business need for website improvement to an existing website (<http://www.firststopsports.com>). The completion of this project created a prototype data acquisition system from a static HTML eCommerce, production website.

The successful website was hosted on the author's local network (LAN) and included ASP code to connect and transfer customer ordering data to a relational database. The current production web site did not archive any customer ordering information, and this would prove to be a valuable tool to grow the business sales and eventually increase revenue.

Chapter 5: Lessons Learned and Next Evolution

5.1 Lessons Learned

The completion of this project proved an excellent learning experience for the author. The author could apply many of the system analysis and project management concepts acquired from the classes taken at Regis University. Time management played a crucial role in completing this project. In addition, the creation of a data acquisition website and its intricate connections to a transactional database proved very challenging. This project was a very good opportunity to gain experience in web development and web site hosting using IIS and ASP.

The author feels a great overall sense of accomplishment. In spite of the time management issues, the completion of the prototype data acquisition system proved to be a success and will enhance the business development capabilities of First Stop Sports.

5.2 What I would have done differently

It would have been beneficial to obtain more help from an experienced web developer. Developing web applications that interact with a database require a thorough understanding of HTML, databases and their associated database connection strings. Many hours were spent doing research on connecting HTML via ASP connection strings

to a database. A better web development tool could have been used to edit the HTML code other than Notepad. The additional cost of a more sophisticated development tool with graphical interfaces between the code and final viewable screens would have made development easier and thus, would have been a worthwhile investment.

5.3 Evolution of the Project

With the ground work in place from the successful implementation of this project there will be a database with historical customer information. There are numerous evolutions that can build on this baseline design and are listed as follows:

5.3.1 Complete database with historical data

Due to the fact that this project would complement and upgrade an existing e-Commerce website, any changes would only incorporate customer data moving forward. To complete the history of all customer orders and maintain a database from inception of the website and the first order, a data migration from the existing customers and their orders will have to be completed. The historical data conversion would be a manual process because the data is not captured electronically and only archived via an email process, specifically a “.pst” file in Microsoft Outlook.

5.3.2 Database upgrade

The prototype project website was designed with Microsoft Access as its relational database. It was chosen for its ease of use and relative cost. First Stop Sports understands that when this product is fully incorporated into the production website, it may soon be outdated and undersized. An evaluation of some of the other databases discussed earlier will be necessary and a possible migration to one of those enterprise level databases will be required. A migration to Microsoft SQL Server or MySQL is

expected, but further research will need to be completed to determine which enterprise level database is best suited for the needs of First Stop Sports.

5.3.3 Additional Security

Currently, the online ordering system passes the customers information to a 3rd party shopping cart company that in turn processes the customer's sensitive credit card information. The 3rd party shopping cart company implements HTTPS. If this prototype project is assimilated into the real production system, a more secured method of customer data capturing process would be required than currently maintained on the author's LAN; - for example, a secured HTTPS connection or creating established encryption key base technology could be implemented.

5.3.4 Custom e-newsletters

With all customer order history data available, numerous business development projects can be instituted. Through some simple data mining techniques, resulting data can produce powerful advertising ammunition. Target emailing campaigns directed specifically to certain customers, showing historical trends towards certain products and time frame ordering history, can be generated.

Example 1:

A customized email can be created and sent before football season kicks off or before the Christmas shopping season that includes the following data:

Email

Customer name

Customer's fondness for a specific team or specific division (if available)

Any new products including any team logo, color or geographic changes

Example 2:

Through some creative demographic profiling, an email or e-newsletter could be sent to all customers who have ordered specific teams in the past, and whose team advances in to the playoffs. Additionally, included in the email or e-newsletter could be the customer's team's opponent for that particular week as well.

Example 3:

First Stop Sports receives lists of new items and sale items from its associated vendors and suppliers. A procedure can be created that transforms that new data from those vendors directly to an email or e-newsletter, and automatically sends it to First Stop Sport's customers.

5.3.5 Customer profiling

With the nature of the current design of the production website (<http://www.firststopsports.com>), there are no cookies or caching generated on the server side, other than a history of websites visited which is done client side. However, with a database capturing information on customer orders and potential customer navigation through the website, customer profiling can be achieved. So when a customer returns who has visited <http://www.firststopsports.com> in the past, the site may be customized to their specific preferences and even directed to potential interesting new items according to their profile. Additionally, when returning customers log in, access to their profiled

information can be achieved. The concept of creating discounts for returning customers can also be achieved with instant access to a database with historical information.

5.3.6 Prediction of customer and product frequency

Advanced data mining techniques can be implemented to potentially predict customer-ordering patterns and trends. With that data available, communication to those customers may provide a great method to increase sales and show that First Stop Sports does care about its customers. Included could also be discounts, availability of products and minimized shipping charges generated from expedited ordering.

5.3.7 Automation of bookkeeping and accounting

Currently, all orders generated from the production website have to be entered twice. First, the customer ordering information needs to be transferred to the vendor ordering system (typically an email sent to vendor) and into the accounting system, QuickBooks. The new solution will prove feasible migrating a customer's order from the shopping cart, directly into the accounting system in real time and then directly to the vendors ordering system. The migration from the online ordering system to the accounting system could alternatively be achieved through a batch process done at specific times since it may not need to be done immediately.

5.4 Conclusions and Recommendations

The data capturing prototype website design is a highly recommended solution for First Stop Sports. The automated method of capturing customer order information will prove invaluable for business development and daily operations. It is recommended that First Stop Sports implement the newly created website and backend data capturing relational database system. Despite the length of time to complete this project, the goals

that were initially set were successfully met. The author learned a great deal in the process from inception to completion and deemed this project a great success. Future evolutions of the web site and ordering system can be achieved with this baseline of customer data installed.

5.5 Summary

The project successfully prototyped a data capturing system that can advance the business development needs of an online e-Commerce sports memorabilia store (<http://www.firststopsports.com>). First Stop Sports now has a prototype customer ordering data acquisition system. The author gained valuable project management experience with the knowledge obtained from the MSCIT program at Regis University. The author also gained knowledge and experience in creating a prototype data capturing system through ASP coding techniques and transferring data to a relational database. The major lesson learned was time management and to focus on completing the project.

Appendix A

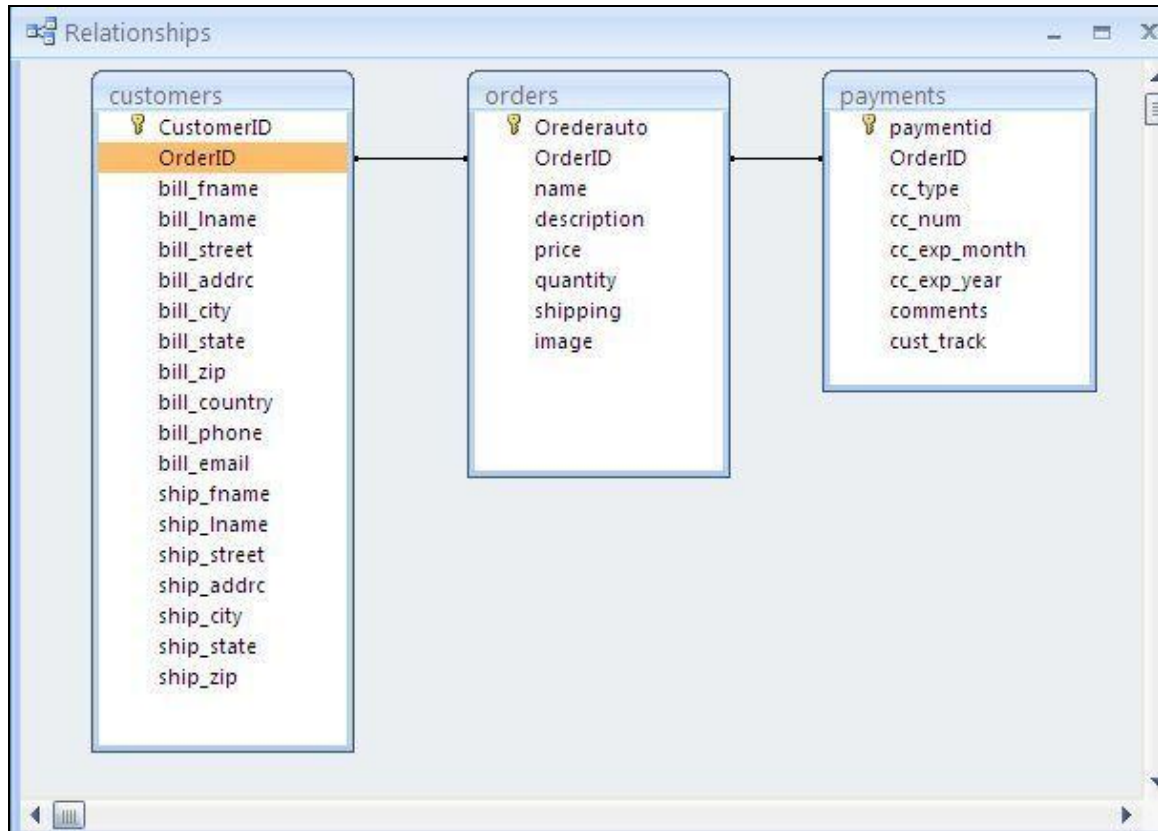


Figure 17 Entity Relationship Diagram

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