

TradeStationZone.com Web Site

By

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Submitted to
The Faculty of the Information Engineering Technology Program
In Partial Fulfillment of the Requirements for
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In Information Technology

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This project and the work described in this document as well as all derivatives of this work are fully paid for and fully owned by RINA Systems, Inc. University of Cincinnati does not own the whole or in part of the work described in this document.

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Abstract

This report covers the use of Internet as a new marketing tool for small software development company such as RINA Systems, Inc. The purpose of the project is to provide company's customers and independent active traders with full access to the information about trading software products and services offered by RINA Systems as well as by any other providers, wishing to participate in TradeStationZone.com Web site. In addition the Web site is intended to serve as one stop shopping for both products and information, such as reports, articles and reviews, related to trading systems software.

The material covered demonstrates what has been accomplished during the project and gives the rationale for the use of various technologies, including SQL Server, ASP+, ADO+, Visual Basic, and HTML. The structure, flow and management of the TradeStationZone Web site are discussed in details.

TradeStationZone.com Web site

1. Statement of the Problem

1.1. Definition of the Need

RINA Systems, Inc., provides custom software development and support services designed to enhance business performance. Founded in 1995, the company is already widely recognized for its expertise in providing high-quality products, timely delivery, and comprehensive support.

RINA Systems specializes in creating Performance Analysis Software for traders and investors. The company has developed state-of-the-art performance analysis software for traders to analyze and improve trading performance and to help determine problems with a selected methodology before they occur in real trading. The company has produced several innovative software applications for traders including Performance Suite, Portfolio Evaluator, Money Manager, 3D SmartView, Portfolio Tracker and others. In addition, RINA Systems technology is used by professional and individual traders, fund managers, and trading advisors in over 30 countries.

In addition to its custom services, RINA Systems creates industry-specific software products. As the company has grown its products have become popular all over the world, including the United States, Canada, the United Kingdom, France, Italy, Germany, Belgium, Turkey, Australia, New Zealand, Japan, Switzerland, Sweden, Norway, and Indonesia and have received industry awards for excellence.

As the software RINA Systems produces becomes more popular and new products are being released the company acquires more clients. In their turn, clients need more information about our products and services. From the other hand, World Wide Web is

becoming an increasingly powerful, interactive and dynamic medium for delivering information. Modern Internet technologies offer us new opportunities to strengthen RINA Systems' position on the market by creating an Internet-based marketing tool (5).

2. Review of the Literature

For the development of this project I used three instructional books and several Web sites along with my own experience. They cover areas of Microsoft's SQL Server database creation and maintaining, programming of Active Server Pages .Net, and HTML language guide.

2.1. Books Resources

As mentioned above, there were three primary books that I have used during the development of my project. These are:

- *Transact-SQL by William C. Amo*
- *A Preview of Active Server Pages + by Richard Anderson, Alex Homer, Rob*

Howard, and Dave Sussman.

- *Dynamic HTML by C. Eysex*

In my project the SQL Server is the backend of the application; the information on how to create the tables, views and stored procedures was primarily supplied by the book *Transact-SQL*. The book served as a reference when I needed to create complex SQL queries, used within stored procedures and VBScripts. The book presents clear and concise explanation of the fundamentals of Microsoft Transact-SQL a implemented in Microsoft SQL Server 7.0.

To master new ASP.NET technology the *Preview of Active Server Pages* + book was often used. This book covers conceptual overviews of the product, including explanations on what ASP.NET is all about, how to use it and what you can use it for. These are followed by deeper investigation of the features that developers must use first.

I also was referencing the *Dynamic HTML* book as a guide to how to create elaborate Web pages using dynamic HTML, cascading style sheets and other HTML tools.

2.2. Internet Resources

The most of information on ASP.Net programming I obtained from Internet, using Microsoft ASP.NET sites, such as www.IBuySpy.com and www.duwamishonline.com. These are sample Web sites to demonstrate the effective use of ASP.NET technology.

- www.IBuySpy.com presents a Developer Solution Kit for e-commerce storefront selling fictional spy equipment. This is a real world sample that demonstrates best practices for creating ASP.NET applications. The Solution Kit includes complete and thoroughly documented source code, can be used as a template for building one's own applications.
- www.Duwamishonline.com is a sample Web application produced by the Microsoft Developer Network (MSDN). The application demonstrates the design, development, and deployment principles that can be used for any n-tier distributed Web application.

I also used www.ASPFree.com Web site, which is a great source for beginners in ASP.NET programming. It provides the answers to frequently asked questions, ASP.NET demos, links to other ASP.NET resources, etc.

3. Description of the Solution

3.1. User Profile

There will be three major categories of users: users, providers and administrators. Typical users for this system are independent traders and investors, looking for information on trading software products or services, product reviews, articles, newsletters, news, or answers to their questions. Such users would be able to look through related publications from different sources, either recent or archived, perform searches by keyword, download demonstration versions, find information about a particular company or user group, and possibly make purchases.

Providers are current business partners and other companies willing to participate in www.TradeStationZone.com. Companies' representatives have to contact RINA Systems in order to place their information on TradeStationZone.com, therefore they do not have to have high IT literacy in order to use Web site.

The third category includes the administrator of the Web site, or Webmaster, as well as other company administrators. The Web site administrator is the one who has full access to the database and is able to change and delete records, update the database, and make other structural changes to the database. The delegated company administrator is the one who will have a limited access to the database and will be in charge of modifying and updating the information related to his company. The administrator has to have some HTML knowledge in order to make information look accurate on the page.

3.2. Design Protocols

3.2.1. Organizational Schema

The organizational schema of the TradeStationZone.com is shown below on page 7.

Nodes Description

Home – this page displays top three featured products and three latest news items.

Products/Services List – those pages list all products and services the site is offering. All products and services are broken into categories that are listed in the drop-down menu at the top of the page and in the Menu bar on the left of the page. User can choose the desired category and the list is updated accordingly.

Providers/User Groups List – lists all companies and user groups participating in this site in some way.

News – all news and recent events in the world of active trading appear on this page. There will be an access to the Conference page, which is not in the prototype.

Resources – only members of TradeStationZone Web site will be able to see this page. This page will provide the access to free resources such as reports, articles, and Easy Language code samples.

Product/Service Details – whenever the user clicks the product or service on the Products/Services page the Product/Service Details page is displayed showing detailed product description including price, support telephone number and e-mail information. The page also has “Buy it” hyperlink that will add the product to the user’s shopping cart.

Provider/User Group Details – page shows detailed information about selected company or user group, such as address, e-mail, telephone number, Web address, and the description.

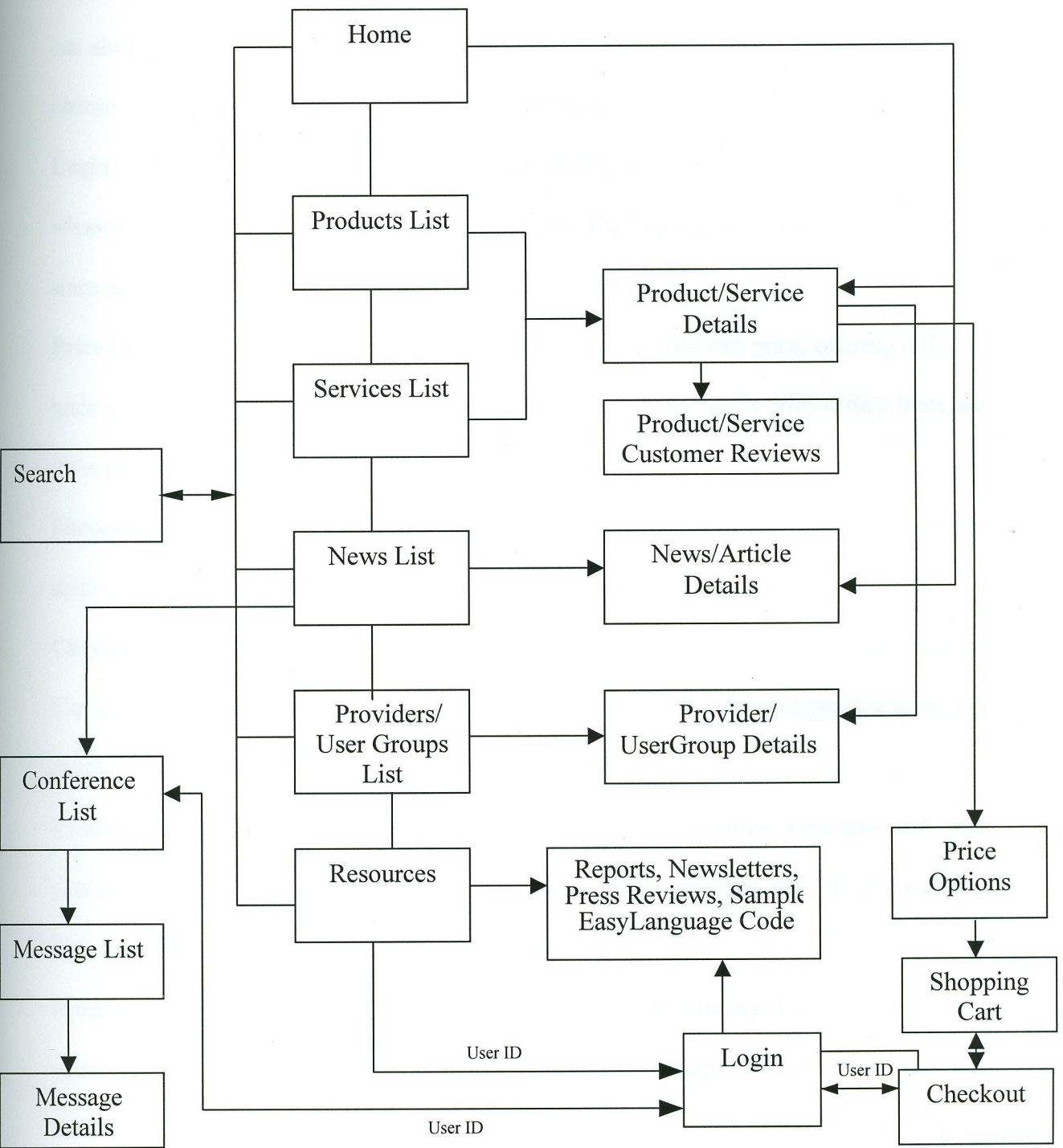


Figure 1. TradeStationZone site map

Search – this is a pagelet (applet) that appears on menu bar to the left of each page so that user can always search for needed information. The Search has a drop-down menu where user can choose category to search by, and the textbox to provide a keyword.

Login – this is a pagelet on a menu bar, that appears only on a Home and Resources pages, i.e. whenever the user has to log on to access the page. The Log Out procedure is not required, since the session is limited to 30 minutes and then expires.

Price Options – this page shows up if the product has more than one price, offering different price options. For example, if the product is included in the package its price differs from that if the product is being purchased alone.

Shopping Cart – displays the current content of the user's shopping cart. The page provides ability to change the quantity of the product and to proceed to checkout.

Checkout – this page appears when the users clicks 'Final Checkout' button on the Shopping Cart page. It displays the final order information and asks for the billing/shipping address and credit card information.

Conferences – TradeStationZone.com users are able to exchange messages and post announcements using the conferencing tool. This page provides list of all available discussions, and ability to add new discussion topic.

Message List – from Conferences page the user can get to the Message List page by clicking corresponding conference link. This page provides list of messages related to this particular conference.

Message Details – displays the detailed information about message, including subject, author, date when it was sent, and contents.

3.2.2. Database Design

I have created the SQL database that has to be located on the SQL 7.0 server. During the project the SQL 7.0 database was created.

I have created several tables that contain information about products, customers, companies, etc. SQL stored procedures are used to retrieve and update the data in the database.

According to the company policy, detailed database design and structure cannot be published in this document.

3.2.3. Interface Design/Navigation

The user enters the product by typing the Web site URL in the browser window: <http://www.tradestationzone.com/tszone>. Once the user enters the site the Home page appears, showing the latest TradeStationZone news and featured products. On the top of each page there are navigation tabs that are intended for user to navigate through the site (Figure 5).



Figure 2. Navigation bar

Hyperlinks are used to get the user to the specific product or service details, as well as to specific company/user group information or article/newsletter content.

There is Menu bar to the left of the each page that gives the user the list of options (Figure 6)

MENU

MEMBER LOGIN

Username:

Password:

Login

Not a member? Sign up

SEARCH

Select a category:
Products & Service ▾

Search for:

Go!

Figure 3. Menu bar

3.2.4. Colors and Graphics

The primary colors of the web site are midnight blue and yellow-green. Yellow color also appears on the site. The midnight blue color is used as a background for Menu bar and Navigation bar. All major headings such as product or article names are also midnight blue. Yellow-green color is used for tabs on the navigation bar on top of each page and for all buttons. The black color will be used for the actual text.

Graphics will primarily be used in the header and menu images, including images for navigation buttons and Menu bar. The specific images will be used to highlight the selected page name.

4. Objectives of the Project (Deliverables)

The ultimate objective of this project is to develop a new Web site that possesses the features and functionalities of fully-fledged Internet based application, using the newest Microsoft technology Microsoft. NET. The application must be able to provide better service for our customers as well as enable the company to receive additional profits and benefits.

The objectives of the project are to:

- Provide customers with the full access to information about products and services offered.
- Provide the members of TradeStationZone.com with free resources such as newsletters, reports, and articles.
- Post the news and information about the company, as well as publish articles and products reviews.
- Provide the directory of those companies and user groups who are willing to participate in TradeStationZone.com.
- Enable TradeStationZone members make purchases through the Web site.
- Provide conferencing tool to the members of TradeStationZone.com.
- Provide the Search ability.

5. Development

5.1. Timeline

The Gantt chart visually depicts the project schedule for the whole Senior Design term reflecting my work on this document, including major milestones. Figure 7 on page 11 displays Gantt chart. It does not reflect the work done on the project itself.

5.2. Budget

Due to the RINA Systems' confidentiality policy the budget for this project cannot be shown in this document.

5.3. Software

To take advantage of the coming opportunities in Internet development I was using the new Microsoft development technology – Microsoft .NET development tools, including Microsoft Visual Studio .NET, in particular Visual Basic .Net, and its new features such as ASP.NET and ADO.NET. The project also uses Microsoft SQL Server 7.0 and IIS 5.0. The enhancements new Microsoft products promise to have significantly simplified the development process and greatly increased the effectiveness of application. Figure 8 depicts the list of software used while developing the project.

Software:

Microsoft SQL Server 7.0
Microsoft Visual Studio .NET (Developer's Tool) Beta 1
Microsoft Windows 2000 Server
Internet Information Server 5.0

Figure 5. List of software

5.3.1. Software Review

Below is the brief description of the software I have used while developing the project.

- **Microsoft Visual Studio .NET**

Microsoft Visual Studio®. NET significantly simplifies developing enterprise Web solutions. By offering greatly increased productivity, end-to-end Web development capabilities, and scalable, reusable server-side components, Visual Studio can help RINA Systems more effectively address the needs of a rapidly changing - and competitive - market place. New features of Visual Studio.NET make it a complete development

environment for building on the Microsoft .NET Framework, Microsoft's next generation Web application development platform. It provides key enabling technologies to simplify the creation, deployment, and ongoing evolution of secure, scalable, highly available Web applications and Web Services while leveraging existing developer skills.

- **Visual Basic .Net**

Visual Basic is a productive tool for creating high-performance enterprise and Web based applications. The next generation of Visual Basic will add object-oriented language features to simplify the development of enterprise Web applications. Visual Basic provides all the language characteristics that developers need to create robust, scalable distributed Web applications.

- **ASP.NET**

Microsoft's Active Server Pages technology is still relatively new way to create dynamic Web sites and Web based distributed applications. However, there are new standards and technologies surfacing in the computing world. To meet those new requirements Microsoft is working on new generation of ASP, called ASP.NET Next Generation Web Services that will make it much easier to create dynamic and scalable Web applications, especially in the common areas of user-interaction and data handling.

- **ADO.NET**

ADO.NET is an improvement to Microsoft ActiveX Data Objects (ADO), based on Extensible Markup Language (XML) that provides platform interoperability and scalable data access. Because XML is the format for transmitting data, any application that can read the XML format can process data. The next generation of Visual Studio has been greatly improved to take full advantage of ADO.NET with enhanced data-binding technologies.

- **Microsoft SQL Server 7.0**

SQL Server is the best database for the Microsoft Windows platform and the relational database management system for a broad range of corporate customers and independent software vendors. SQL Server delivers flexible, powerful platform that scales up to terabyte size databases and down to small business servers. It fits seamlessly with existing applications and provides the most cost effective environment for customizing and building new applications tailored to unique business needs.

5.4. Hardware

The list of hardware along with specifications is shown on Figure 9.

Computer for development:

Processor	Pentium III 733MHz
RAM	256 MB
HDD	1 Gb

Web Server:

Processor	Pentium III 1GHz
RAM	1 GB
HDD	SCSI Raid 5 60 GB
Backup	Tape Device

Figure 6. List of hardware

6. Proof of Design

The proof of design of this project lies in the site's full functionality and completion of its objectives. In the following sections the main Web pages are shown, along with an explanation of their workings, which will attest to the soundness of this project. The objectives of the project have been achieved through the use of well designed Web pages that will allow users to browse all the products and services listed on the site, view detailed information about

the products, place online orders, browse the list of providers and user groups currently participating in the TradeStationZone Web site, access resources, such as related articles and reports, and interact with each other through the use of conferencing tool. In addition, users will have capability to search for product, companies, user groups or resources by category or by keyword.

6.1. Products/Services Pages

The Products/Services page enables users to browse through the list of products and services. The list is divided into categories, different for products and services (Figure 7).

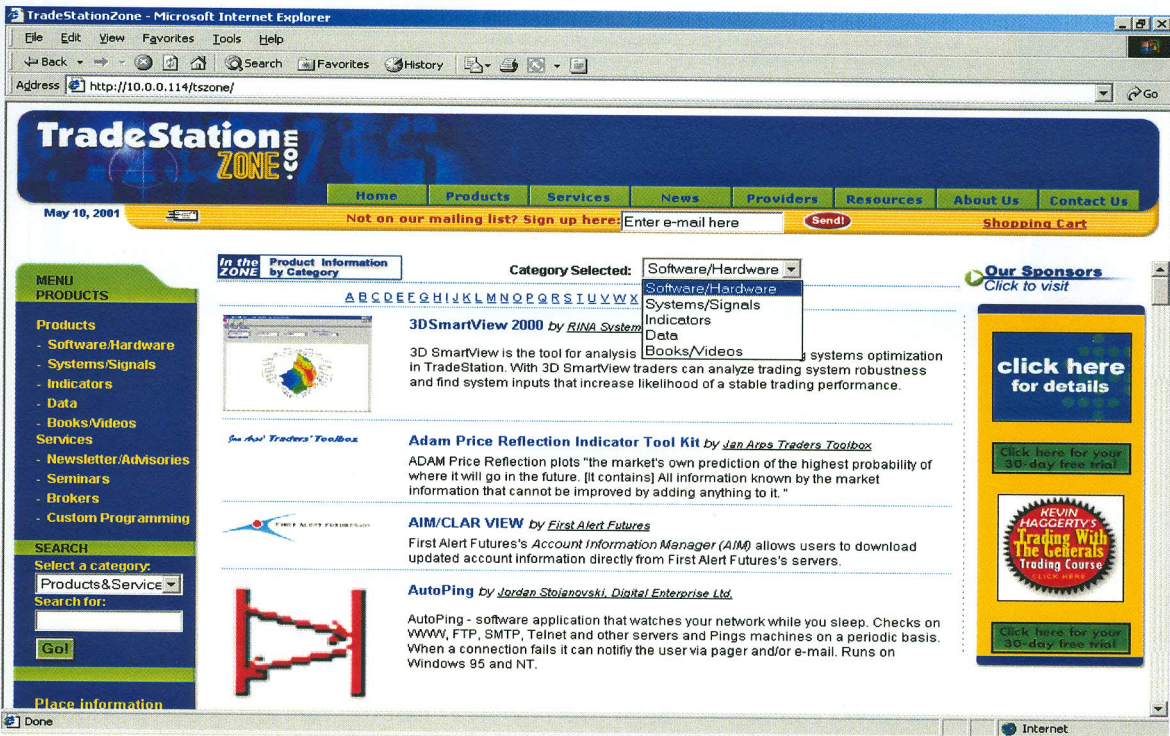


Figure 7. Products list page

Once the user chose the product and clicked it the product/services details page will appear, showing the product description, vendor name, price, and phone and e-mail of the

support department. It also has link to the shopping cart if the users decides to buy product (Figure 8). These two pages meet the objective of the project to provide full information about products and services offered on the site.



Figure 8. Product details page

6.2. Resources pages

Those users who become members will have access to the more valuable resources, such as newsletters, reports and product reviews from different sources (Web sites, magazines etc.)

The Resources page gives access to those resources (Figure 9).

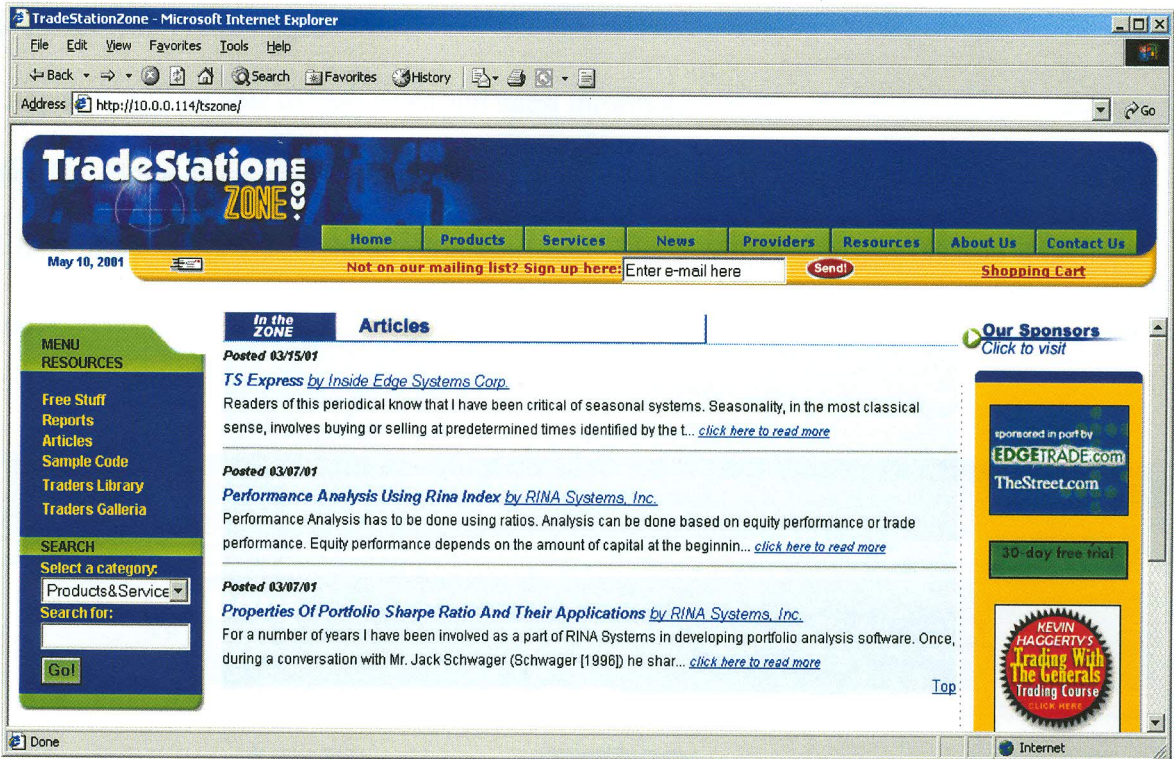


Figure 9. Resources page

When a particular resource has been clicked the corresponding file gets downloaded (Figure 10).

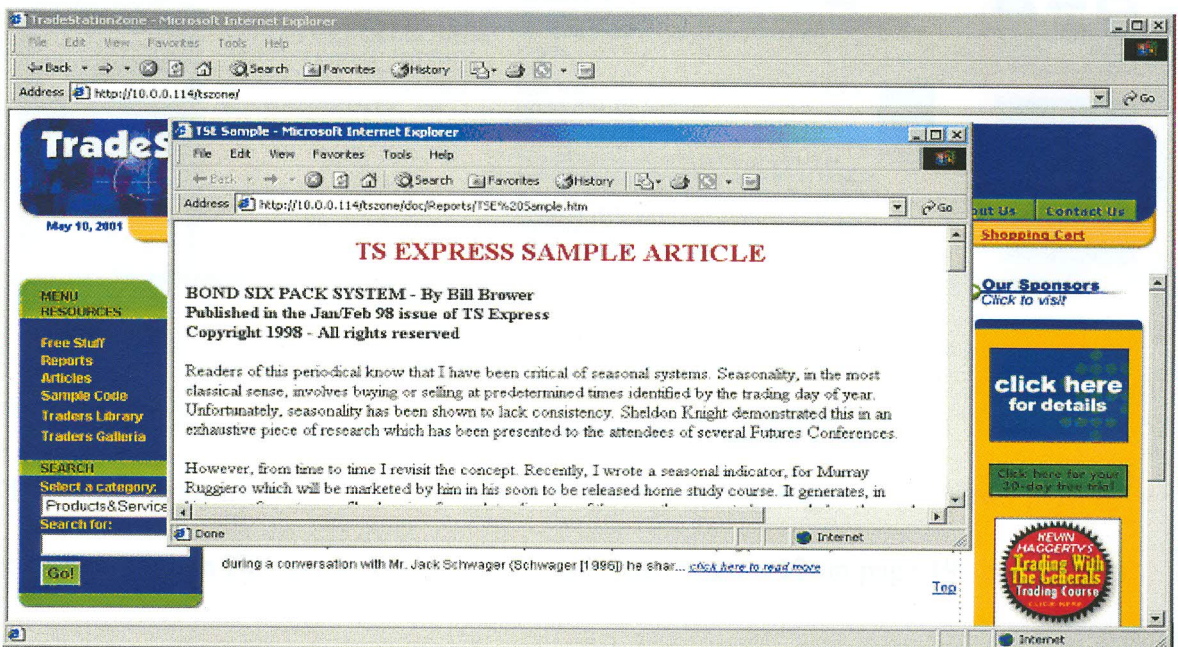


Figure 10. Downloaded sample article file

6.3. Home and News Pages

All users will be able to read news and latest information about what's going on in trading world. The Home page provides an entry point to the TradeStationZone Web site. This page will have latest news and featured products listed, which will be updated once in a certain period.

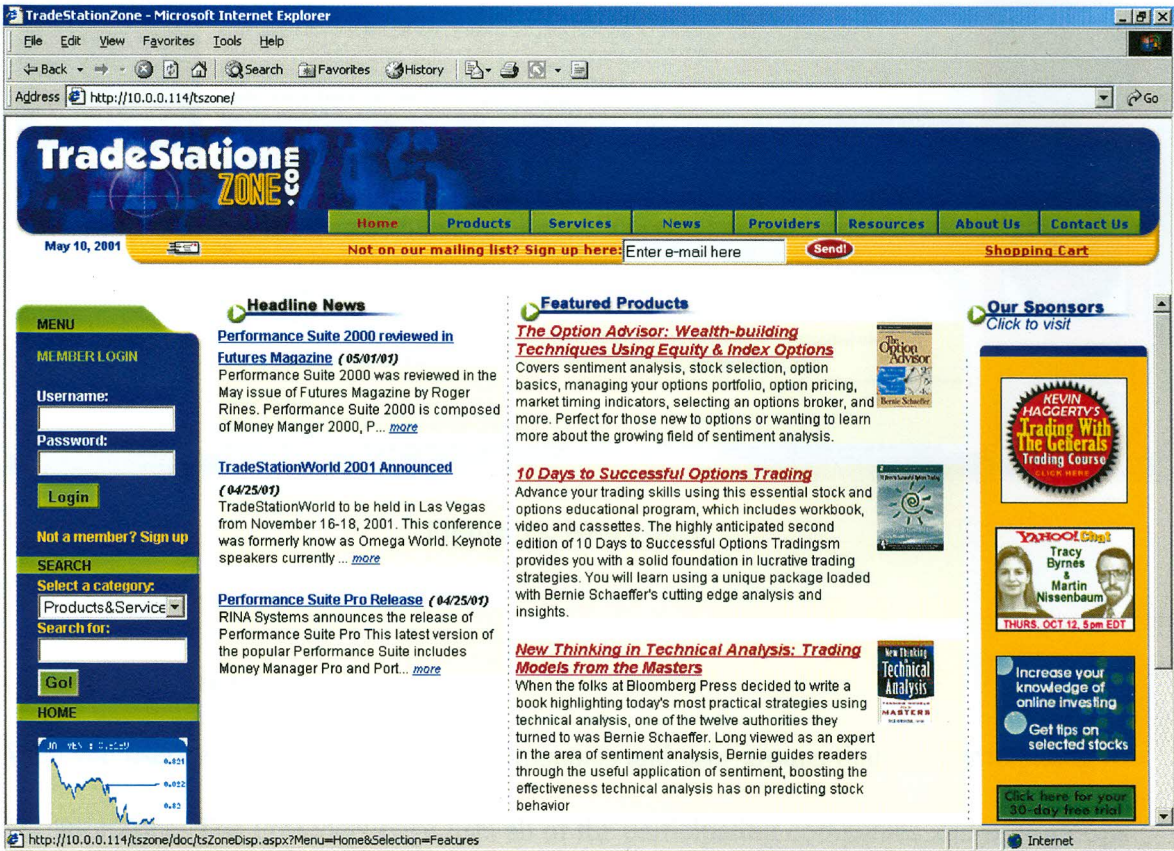


Figure 11. Home page

The News page lists news and recent events items. User can get to the News page by clicking News tab in Navigation bar on top of each page. Figure 12 on page 19 shows News page.

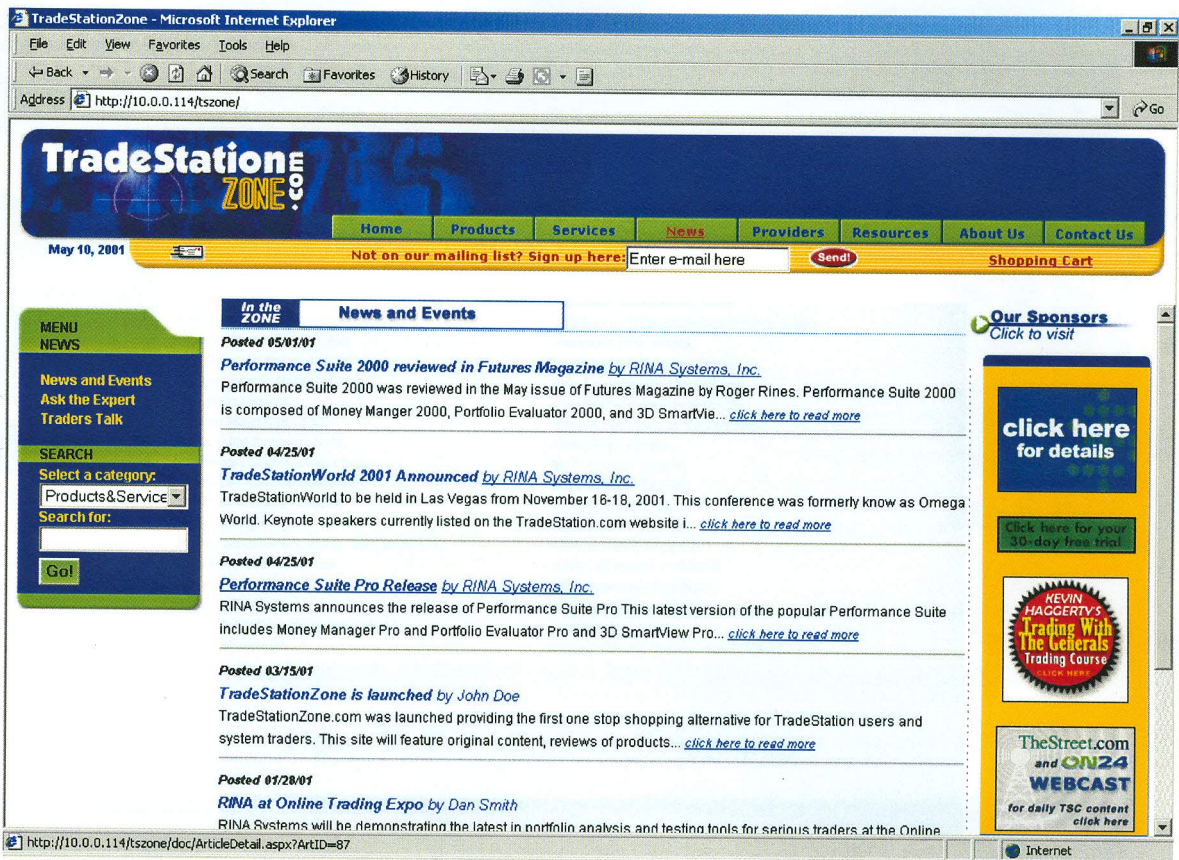


Figure 12. News page

6.4. Providers/User Groups Pages

Web site users are able to browse the companies and user groups that are participating in TradeStationZone. The Providers page lists all of the participating companies and user groups (Figure 13) and takes the user to the company/user group details page when the user chooses one. The Company details page also lists the products by the company that are published on the Web site (Figure 14).

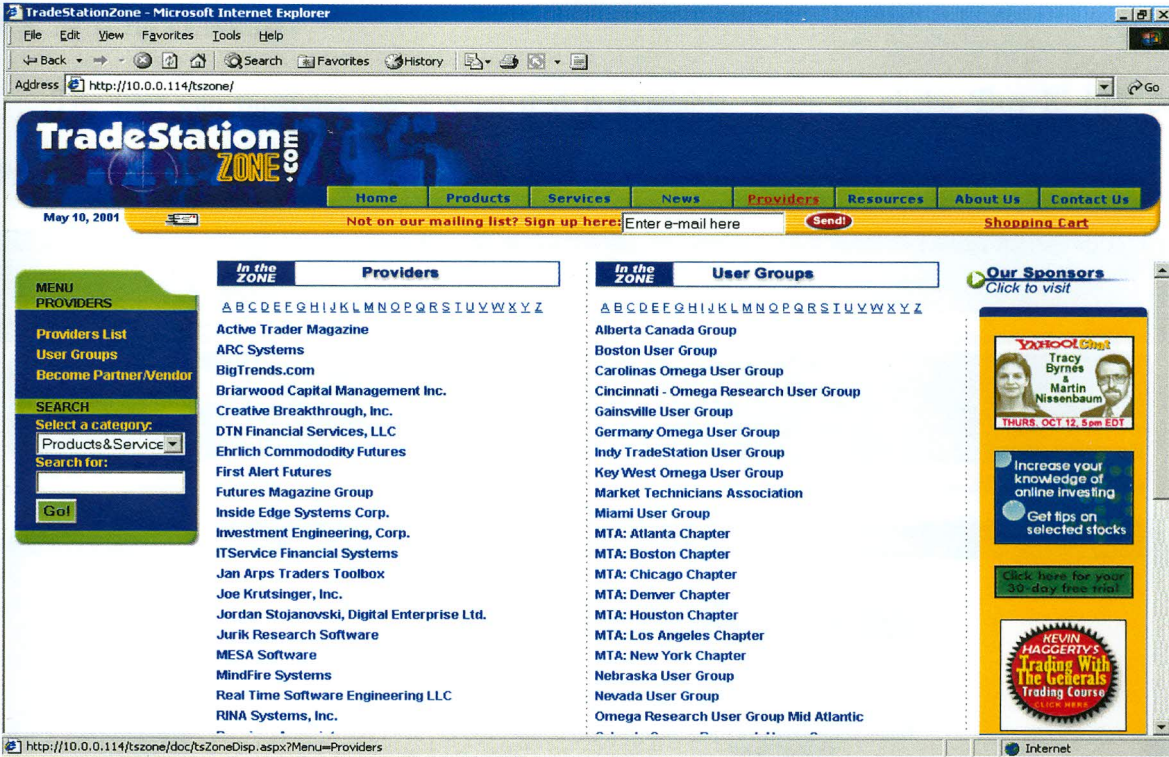


Figure 13. Providers/User Groups page



Figure 14. Company details page

6.5. Making Purchases

The user can purchase the product if it is available. When he clicks 'Buy It' link on Product Details page it will bring him to the Shopping Cart page (Figure 15).

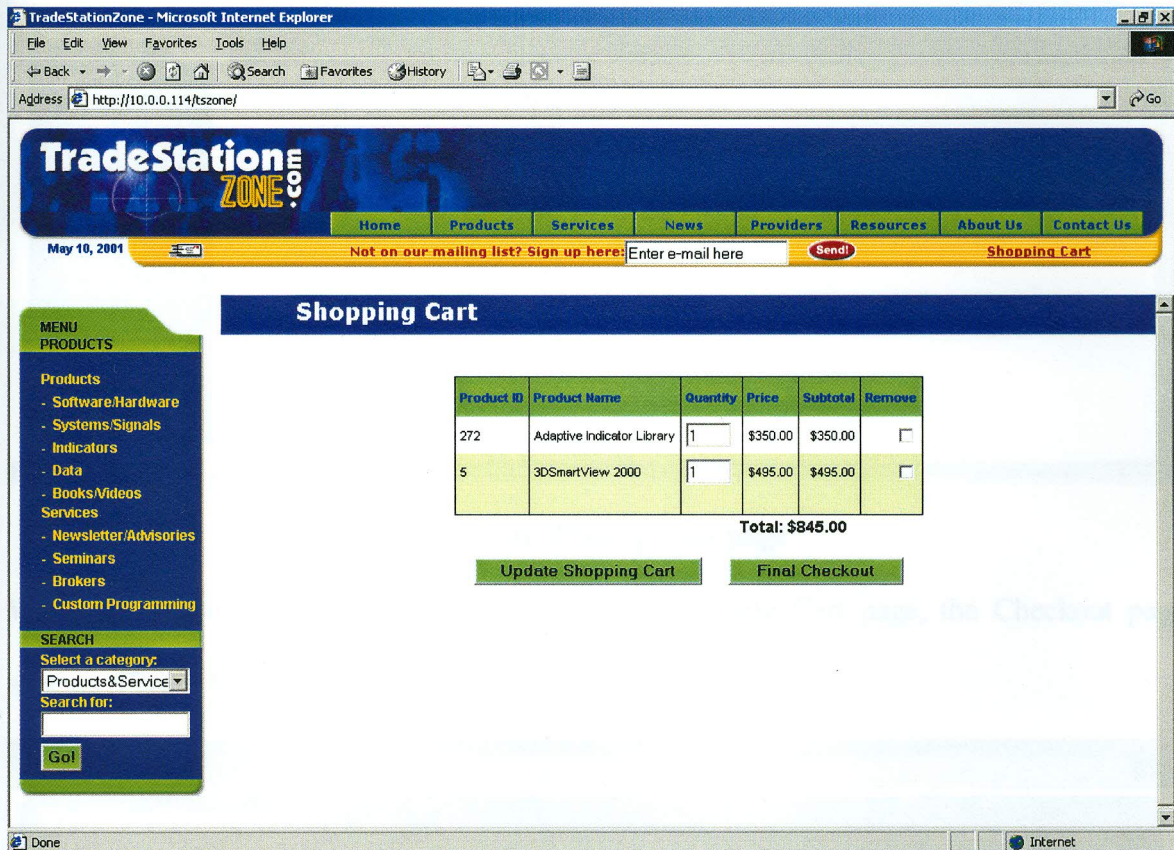


Figure 15. Shopping Cart page

In some cases, when the product has more than one price, the user first gets to the Price Options page (Figure 16), and then to the Shopping Cart page. The user is able to update quantity of the product, remove the product from the shopping cart, or go back to products and services page. User can access his Shopping Cart any time by clicking the 'Shopping Cart' link in Navigation bar on the top of the page.

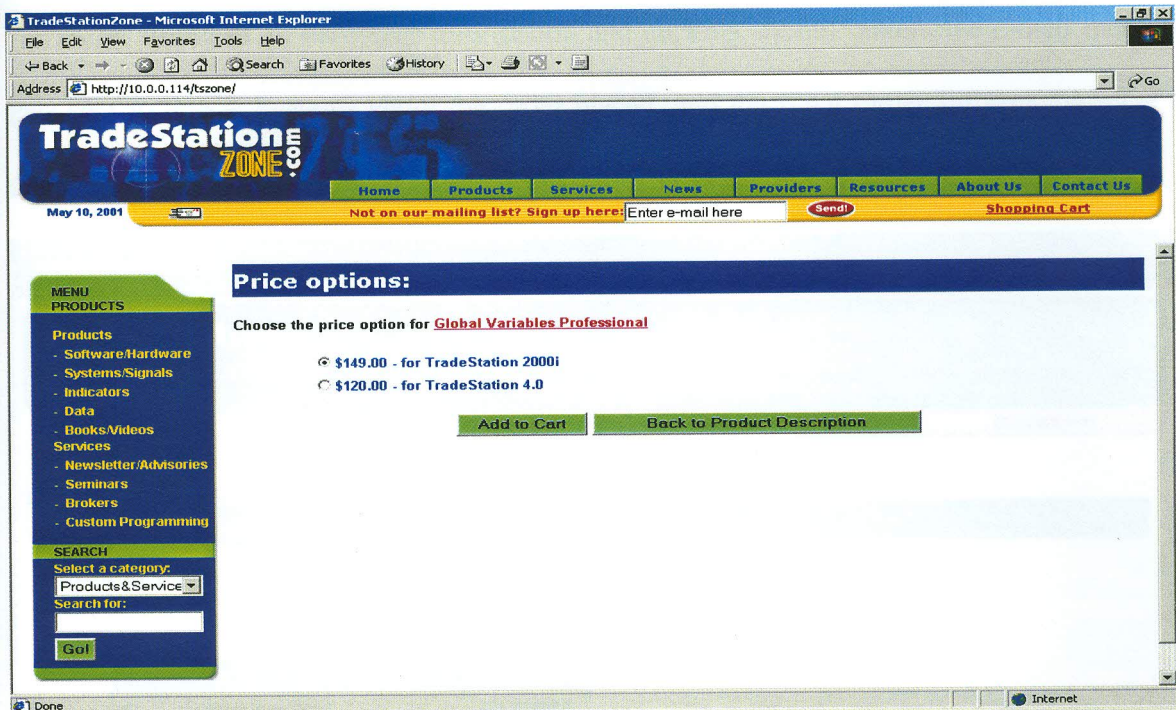


Figure 16. Price options page

When the 'Final Checkout' button is clicked on Shopping Cart page, the Checkout page appears (Figure 17).

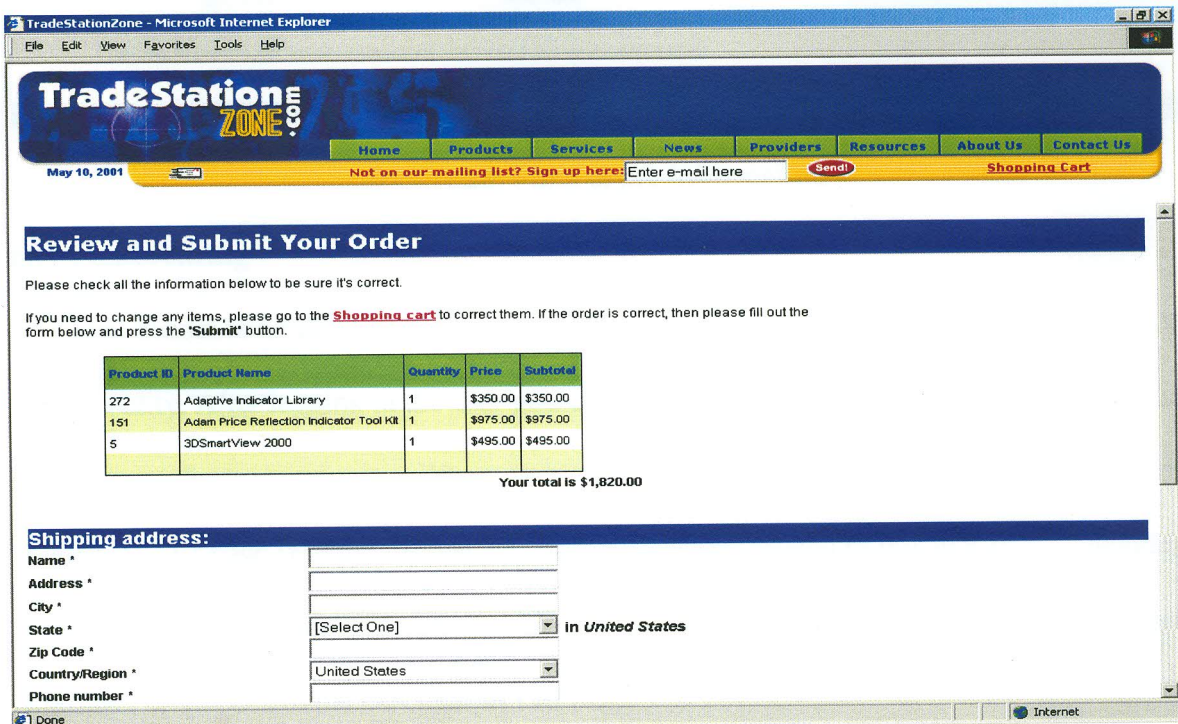


Figure 17. Checkout page

After filling in all necessary information and clicking submit button, the e-mail message gets sent to RINA Systems about the order placed, and the Final Order Information page is displayed (Figure 18).

TradeStationZone - Microsoft Internet Explorer

File Edit View Favorites Tools Help

TradeStation
ZONE.com

Home Products Services News Providers Resources About Us Contact Us

May 10, 2001

Not on our mailing list? Sign up here: Enter e-mail here

[Shopping Cart](#)

There was an error while placing your order

Check Out Complete!

Thank you for your order. We recommend that you print this page for your future reference.

Your Order Number is: 1097.

Product ID	Product Name	Quantity	Price	Subtotal
272	Adaptive Indicator Library	1	\$350.00	\$350.00
151	Adam Price Reflection Indicator Tool Kit	1	\$975.00	\$975.00
5	3DSmartView 2000	1	\$495.00	\$495.00

Your total is \$1,820.00

Ship To Alina
Zilbergerts
Cincinnati Ohio 45237
United States
(513) 731-3654

Bill To Alina
Zilbergerts
Cincinnati Ohio 45237
United States

Thank you for shopping with TradeStationZone. If you have any questions about your order please [contact us](#).

Done Internet

Figure 18. Final order information

6.6. Conferencing

The TradeStationZone users can exchange messages through the conferencing tool functionality. After logging in the user gets to the Discussions List page (Figure 19), that lists all current discussion topics. When user clicks particular discussion he is taken to the Messages List page (Figure 20) that lists all the messages related to this discussion, including message subject, author and date it was sent. A user can add new message, reply to any message, or go back to the Discussions List page.

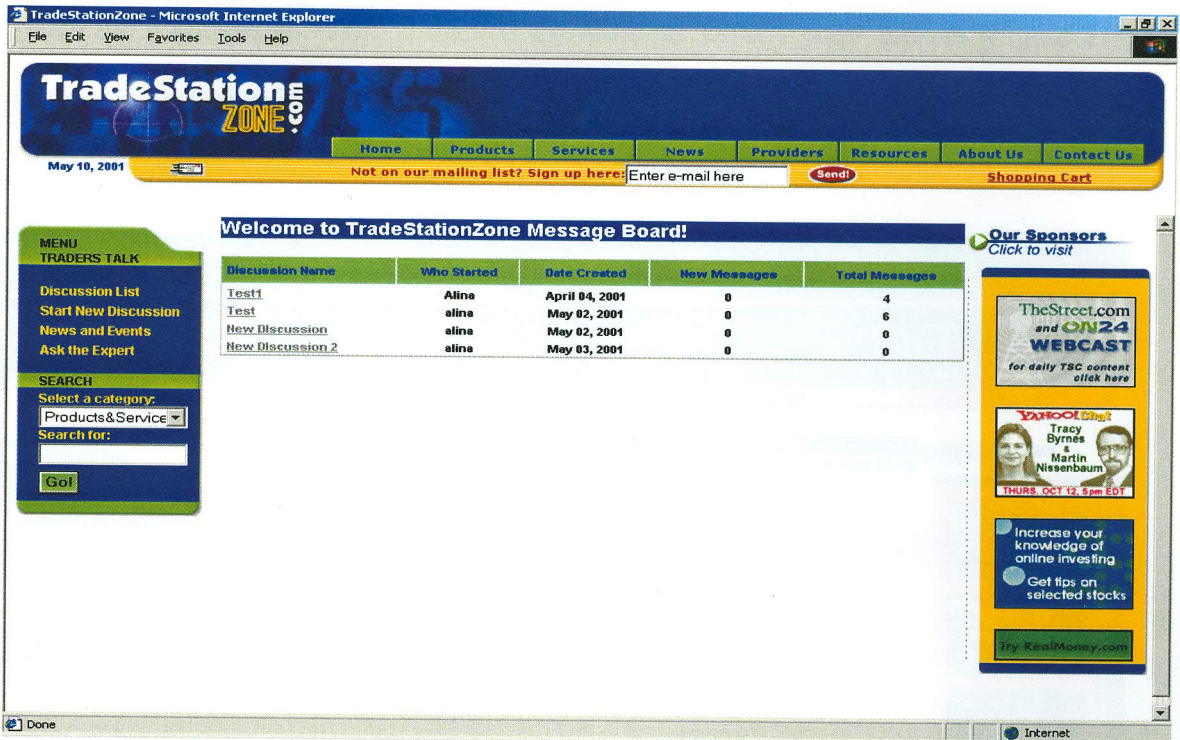


Figure 19. Discussions list page

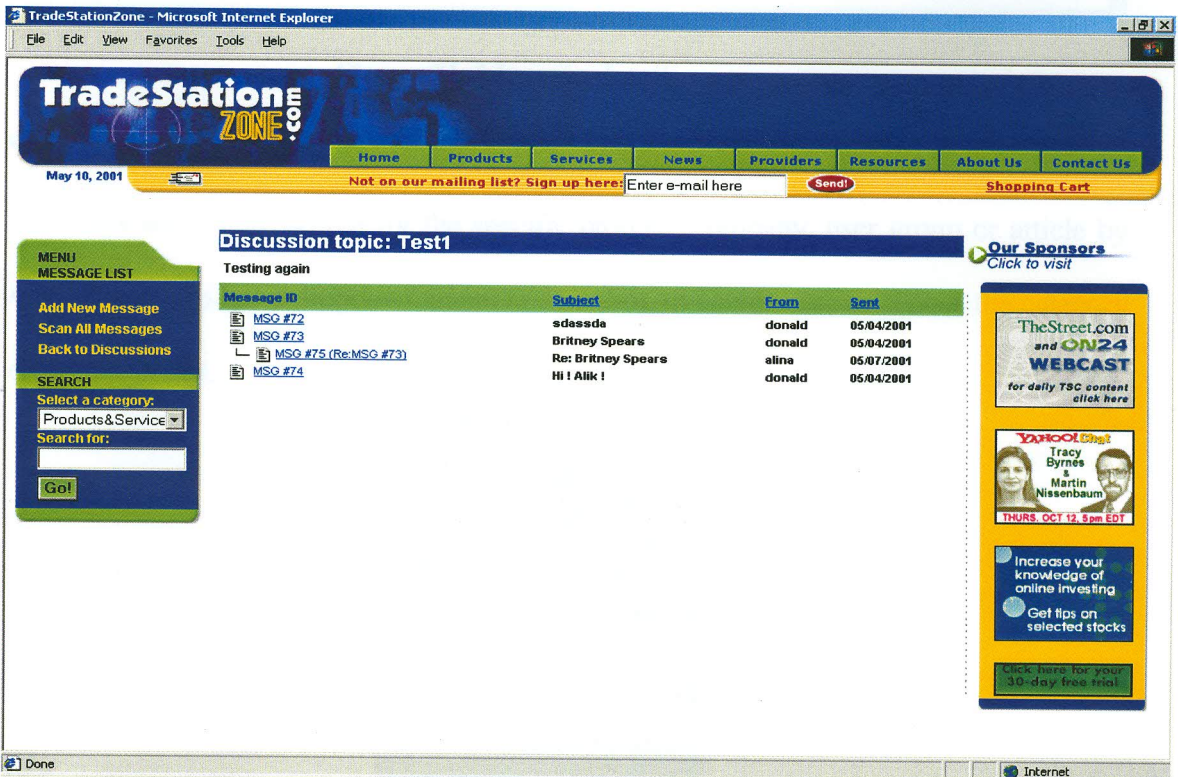


Figure 20. Messages list page

When the particular message is clicked the Message Details page appears (Figure 21), displaying detailed information about the message. User can browse through the whole list of messages using Next and Previous links.

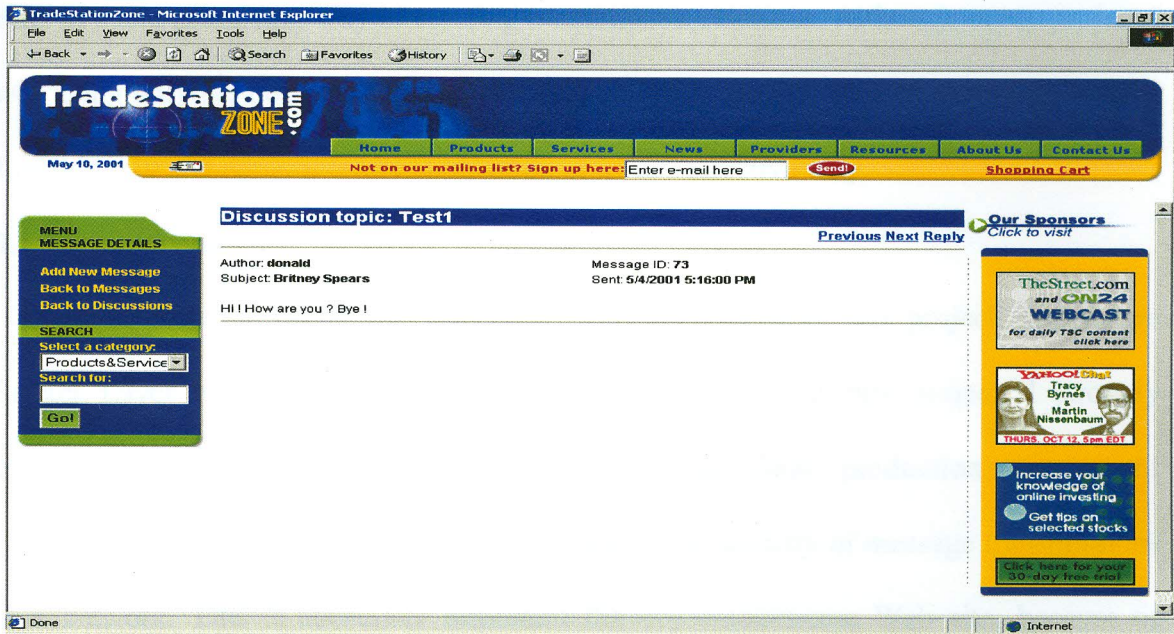


Figure 21. Message details page

6.7. Search capability.

The users are able to search for the specific product, company, user group or article by keyword. Each page has a dropdown menu and textbox to enable user to choose the category and enter a keyword.

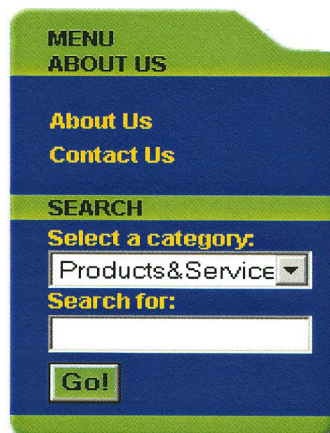


Figure 22. Search engine

7. Conclusions and Recommendations

7.1. Conclusion.

Developing Web application using ASP.Net technology has proven itself as an effective and promising way of creating e-commerce solutions. Although in my project I was using only the beta-version of Visual Studio.Net, I had an opportunity to see its new functionality and apply it to my application in a very effective way.

7.2.Recommendations.

Due to the time limitations that come with developing of this project, the Secure Socket Layer technology has not yet been implemented in this project. I strongly recommend the use of SSL technology on the final production version of www.TradeStationZone.com site. The SSL insures the security of message transmissions in a network. This is especially important for any e-commerce Web site, because of confidential information, such as credit card information that may be transmitted over the Internet. I recommend acquiring Secure Socket Layer certification from VeriSign, Inc. or any other similar security solutions provider.

The other recommendation I wish to make is to upgrade current version of Visual Studio.Net to the newer one that is coming out next month. Since the product is still under development, there are several features that do not work accurately and adequately. For example, the e-mailing in ASP.NET does not work correctly, which may cause problems with receiving the order information that gets sent by e-mail to the vendor whenever the order is placed. Supposedly, all bugs will be fixed in the next product release. Upgrading the application to the next version will hopefully eliminate some problems that may be caused by bugs and program errors in current version.

8. Notes

The copy of any source code, including ASP pages and stored procedures cannot be enclosed to this document due to the RINA Systems' confidentiality policy.

References

1. Anderson, Richard; Homer, Alex; Howard, Rob; Sussman, Dave. *A Preview of Active Server Pages +*. Wrox Press Ltd, 2000.
2. Balmer, Steve. "Visual Studio .NET".
<http://msdn.microsoft.com/vstudio/nextgen/overview.asp>. October 26, 2000.
3. Carr, Terry. Vice President, RINA Systems, Inc., Cincinnati, OH. *Personal Interview*. October 12, 2000.
4. Ream, James. Lead architect, Digex, Inc. *Case study*.
<http://www.microsoft.com/servers/net/Digex.htm>
5. Zamansky, Leo. President, RINA Systems, Inc., Cincinnati, OH. *Personal Interview*. October 6, 2000.
6. Amo, William C. *Transact-SQL*. IDG Books Worldwide, Inc., 1998.
7. Eysex, C. *Dynamic HTML*. Microsoft Corporation, 1997.