



To succeed in business it is necessary to make others see things as you see them.



SOA and Business Process  
Business Intelligence  
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# Case Study

## Stock Market Dissemination System

### Abstract

A high performance, interactive, digital dashboard that delivers premium real-time equity and derivatives market information from around the world to banks, brokers, fund managers and retail investors. The framework currently works with Saudi Stock Exchange. However, it can also be integrated with other stock and commodity markets of the world (NYSE, NASDAQ, Euronext).

The system is packed with top of the range content, advanced features and tools required by active traders providing flexibility for local / regional content and local touch using Unicode. Real time data is received in the tagged data format from the exchange and is disseminated to the client applications after processing.



## Client Profile

The Client, is a pioneered financial exchange, offers sound, efficient and attractive capital market products and services to its subscribers.

## Business Need

The client was looking to develop a real-time Stock Market information dissemination service for the people of Saudi Arabia Kingdom and rest of the world.

The system is a real-time market data feed and enables subscribers to watch market movements in real-time from the comfort of their home or office. Subscribers can view on their computer screens, dynamically updating real-time prices, time & sales, corporate actions, news, charts, market depth, alerts, portfolio, top gainers, losers and much more in Arabic or English

The proposed solution has two versions: Retail and Professional. Retail version, a web-based application, has limited features and enables users to monitor the real-time stock market data online, whereas the Professional version, a desktop application has targeted at banks, high net-worth individuals and active investors.

Main requirement of the system is high availability and high performance. Since the solution is dealing with real-time financial data, even few seconds downtime may lead to losses to the retail investors.

## Solution

The whole project was divided into three sub projects i.e. server application, retail web streamer including Ticker and professional version.

To deliver a scalable and a platform independent solution, the application is being developed by using the distributed architecture with loosely coupled components. Thus, more servers are added seamlessly to the overall architecture to provide high availability of the system. Web and DB Clustering is used to provide fault tolerance. The Application server connects to stock exchange server on their pre-defined timings, as prescribed in the MDF Client programmer's guide.

Communication with the Stock Exchange server executed using the TCP/IP protocol that provides one-way feed. The data sent in tagged format. The Client connecting to the server listens to the IP address and the port provided by Exchange, and thus retrieves the real time data and stores them in the database for later use by the system.

The high availability requirement is achieved by using Database Cluster and Web-Server Farm with Load Balancing software.

We proposed client to use multiple servers as backup servers to provide fault tolerance over hardware failure

The Communication between web application (retail) and web server is done through SSL layer, which encrypts the transmission between two.



## Challenges

- Less help or documentation from Stock Market Institution, regarding the type of information received.
- Real Time application with 10,000 concurrent users to be achieved.
- System has to be scalable in terms of server setup to support these many years.
- Hybrid technology solution with client applications developed in Java platform and Server developed on .NET and .NET Remoting platform.
- Unicode support for Arabic language integration
- Limited elapsed time for delivery

## Benefits

- Provide innovative, diversified, and integrated financial markets, products, services, and instruments to subscribers
- Operate the market effectively and efficiently
- Leverage offerings across value chain
- Improved service excellence for customers
- Support investor education and awareness efforts

## Technology

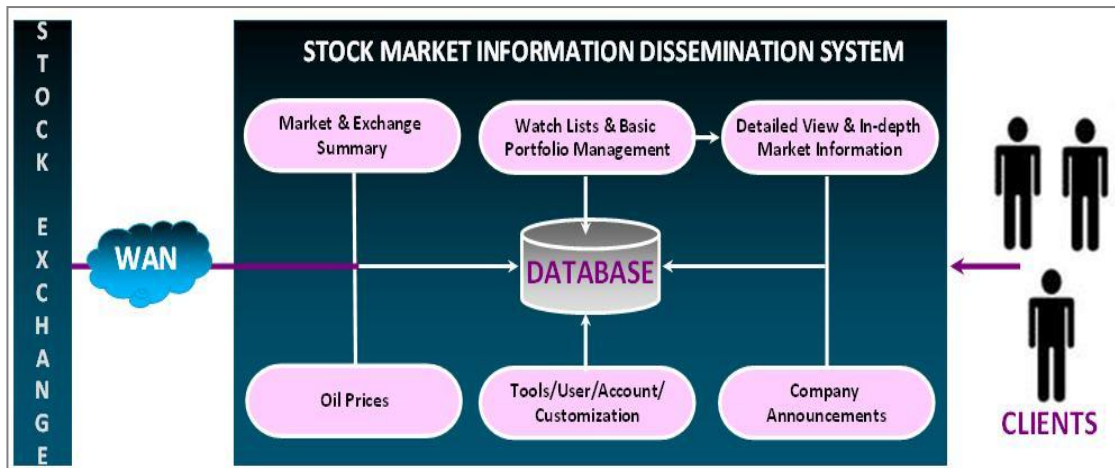
- Windows 2003 Advance Server
- IIS 6.0 Web Server with DOT.NET Framework
- Java – J2SDK 1.4.2 and C#
- MS SQL Server 2000
- .NET Remoting for server components
- ASP.NET for website development
- Swing/Applet

## Industry

- Financial Services



# Case Study



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