# Arrow Research case study

## Overview

Arrow Research wanted to provide a comprehensive and fast website (with similar gravitas and "feel" as the Financial Times Website) for its subscriber base of Ship Owners, Banks, Insurers, Charterers and Port Authorities. They wanted a system to provide the subscribers with dependable data pertaining to the ship brokerage business to act as a platform to promote its Research and to offer other value added services. Coupled with this was the need to create an easy and efficient web-based data management system. The system would also need to allow for the partial automation of reports that their clients would purchase.

## Benefits

The Arrow web site provides:

- A central repository of Shipping Information that can be searched.
- Downloads of the selected information to Excel and CSV outputs.
- Up-to-the-second graphical information
- Web-based weekly reports that reduce the administrative burden.

Furthermore the web site allows for:

- Fast broker data entry to occur anywhere in the world.
- Increased reliance upon its data by the client base

## The Situation

Arrow did not want a "shop-window" web site; they wanted to allow their client base to become reliant upon its comprehensive information. Arrow needed to demonstrate that it was a modern progressive brokerage.

The current method of information gathering and retrieval was viewed as inefficient and relied upon information being updated by the broker whose time was taken up with lengthy data searches. This was not only time consuming for the broker but it also meant that information was not delivered in "real-time".

## The Solution

The solution to Arrow's requirement has been a sophisticated, fast, closed-community web site, which allows the user base to obtain accurate information quickly. Web interfaces are also used to allow brokers to upload data almost instantly to the site.

A few of the main features provided by the Arrow web site include:

- **Search Engines**

  The user community is able to search large databases of shipping information for records of shipping sales, ship builds, etc. Arrow's brokers frequently update these databases. Users of the system are able to download the data that they have selected for their own more detailed analysis.

- **Graphical Analysis**

  Some 30 shipping indices (such as trends in sales of vessels within particular categories) can be displayed graphically to provide user-friendly trend analysis.

- **Live Chat**

  The web site has the capability for subscribers to chat on-line with Arrow's brokers. Brokers who are available for real-time chat sessions are indicated on the web site, making it easy for the subscriber to see if his preferred broker is going to respond.

- **Content Management**

  Up to six individuals are anticipated to contribute to the web site database (often on a daily basis). Foolproof data management screens have been provided to enable the data to be uploaded.

  A Content Management component has also been developed which allows for the Web Site Content Manager to select from a range of features that are available for each page.

**Approach**

The Rational Unified Process has been used as a means of managing the Project.

- **Inception Phase**

In the Inception Phase the Company carried out business modelling, requirements gathering and requirements analysis. This resulted in the RUP artefacts of a Vision Document, Use-Case Specification and a Glossary.

- **Elaboration Phase**

The Use Cases were refined during the Elaboration Phase, where the architecture was also established and tested by implementing a selection of the product functionality.

- **Construction Phase**

The remaining features of the system were implemented in the Construction Phase of the project, during which the company made full use of the web to enable the client to review changes to the system, almost as they were made, and to obtain client feedback quickly.

- **Transition Phase**

During the Transition Phase the site was transferred to a web hosting company and the Brokers reviewed and tested the site, prior to its going live.

**Technology and Development**

The Arrow web site is built using Active Server Pages (ASP) hosted on a Microsoft Windows 2000 Server, connecting via Active Data Objects (ADO) technology and Visual Basic COM components to a Microsoft SQL Server 2000 database.

Clients can connect to the web site using either Microsoft Internet Explorer or Netscape.

The solution makes extensive use of the Extensible Mark-up Language (XML) to display the data contained in the database, on the ASPs.

The solution also makes use of a little-known Microsoft Web Component to generate on-line graphs, in order to further enrich the data presentation.