



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

## Scientific Information Sharing & Search Application

### Abstract

The project was an on-line technical resource used by applied scientists and practicing engineers around the world to quickly locate relevant and reliable technical information. Searching was divided into three major categories – Basic Search, Advance Search and Subjective Search. Gateway was responsible for overall quality assurance of the application that works as on-line search engine for various disciplines of science and engineering. Gateway has selected QA engineers with sufficient prior experience of testing Search Engines as well as with knowledge of engineering domain so that to ensure the quickest knowledge transition. Upshots by choosing Gateway as dedicated testing team, Quality of the application increased beyond the expectation with substantial growth of the business.



## Client Profile

Client is a provider of an on-line technical reference collection used by applied scientists and practicing engineers around the world to quickly locate relevant and reliable technical information. Client's thousands of customers include 75 of the Fortune 500 companies and over 300 leading engineering and science universities worldwide.

Client provides online subscribers with access to more than 2,000 leading reference works and databases from over 40 international publishers and professional societies through a single interface.

## Gateway's Solution

Gateway was responsible for overall quality assurance of the application that works as on-line search engine for various disciplines of science and engineering.

### Team Selection:

Gateway had setup a 4-members team comprising of 1 QA Lead, 1 Sr. QA Engineer and 2 QA Engineers.

Gateway has selected QA engineers with sufficient prior experience of testing Search Engines as well as with knowledge of engineering domain so that to ensure the quickest knowledge transition.

### Preparation of Test Document:

Gateway testing team created a test plan listing the test approach, Scope of the project, Testing Types, and test schedules along with details covering testing infrastructure and resources needed.

The team had created different functional test cases apart from the test cases those are written by third party/client and

## Challenges

The project came with the lot of challenges. The main challenges Gateway faced were:

- Non availability of Software Requirement Specification and functional documentation.
- Functionalities of Interactive tables were changing with the change of each Book ID, so it was a major challenge to prepare a test case that can cover all the possible permutations and combinations of interactive table functionalities so that no single functionality should be missed.
- Understanding of number of search patterns provided in help guide to get the most relevant results.
- Manage priorities with frequent changes in requirements.
- Maintain close loop of communication between Client, development team at client's end and QA team at Gateway TechnoLabs.
- Maintaining test data, consistency of steps followed and test results for each test scenario on production server test URL, UAT site.
- Compatibility testing on different browsers & versions as well as with service packs of different Operating Systems.
- Attend client call regularly at the end of the each business day and manage expectations by performing changes suggested by client on the call.
- Client's unavailability due to different Time Zones resulting in delay

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executed the whole suite of test cases on different environments to ensure that all the functionalities work as expected, independent of environments.

## Research on Search Patterns:

The application's main functionality was to provide high quality search functionality. For the extensive testing of searching, Team did intense research on searching process and patterns on different search engines and applied those knowledge/observations in daily testing process to maintain quality.

## Application Testing:

### (Functionality/Compatibility/Usability)

Application is first went into smoke testing round to make sure that it is robust enough to spend time for full round of testing. Once the smoke testing is done, the application is moved forward for detailed functional testing.

The detailed test cases were executed against the given testing build for functional check. To make sure that the movement of build from one environment to another (Qatest>UAT>Production) is not introducing any new errors, the test cases has been executed on each of the three builds.

The application had to be tested against different platforms/environments – The application was tested for browser compatibility with different combinations of Windows XP + Service Packs and Windows Vista + MAC and different editions with different browser and associated versions.

GUI standards; valid, invalid and limit data input; screen & field look and appearance, and overall consistency with the rest of the application was tested.

for understanding typical requirements and reporting critical errors.

## Benefits

Upshots by choosing Gateway as dedicated testing team:

- Quality of the application increased beyond the expectation
- High quality product helped Client to get substantial amount of customers
- Optimal performance of the application
- Usability of the application was improved via proactive suggestions provided by the QA Team
- On time delivery via quick ramp up of QA team as per the need
- Substantial growth of the business
- Success of the Application has given client a confidence to start their new Content project, which was an extension of the current application



To maintain usability, application was tested as per the end user's point of view so that application becomes easier to use for anyone during searching.

Test case execution had covered functional, compatibility, usability and regression testing.

#### **Issue Reporting/Regression Testing:**

Found issues have been reported on online issue tracking system – Jira Portal with detailed description, steps to reproduce, screen shorts, test environment, record id and severity/priority.

Team had extensively co-ordinated with developers in case of any need in understanding or reproducing the issue. Once the issues have been fixed Gateway was responsible to perform regression testing and re-open and close the issues accordingly.

Team had successfully completed the millstones even if the unavailability of functional documents, changing priorities and complex searching patterns.

#### **Gateway's value addition at a glance:**

- Documentation of Test Plan and Test Cases covering all the functionalities, worked on it after client's approval.
- Voice chat and use of GotoMeeting with client to understand functional requirements as well as to make client familiar about some critical issues at Gateway' end during testing.
- Scrutinized and allocate resources with the relevant experience on similar kind of application.
- Explored searching process and patterns of different search engines and applied those knowledge/observations in daily testing process to maintain quality.
- Apart from executing different set of test cases, Gateway Testing team had provided number of feasible suggestions towards improvement of usability.
- Coming out of the scope of testing of given application, Gateway team had also performed the basic security testing of the application like URL & Cookies manipulation, Authentication bypassing and security based on the subscription rights ( each user has different rights and user can view the details based on these rights only ).

Daily Status Reporting to Client at the end of each day covering test case execution, defects found, time consumption, test environments and resource utilization during a day

### **Technology**

- Java
- SQL Server 2000
- Windows XP SP1, SP2, SP3, Vista Home, Ultimate, MAC
- Internet Explorer 6.0, 7.0, Firefox 2.0, 3.0, Safari 3.0, Opera 9.24
- Jira Portal (Bug tracking)

### **Industry**

Scientific and Research

# Case Study

**Gateway TestLabs** defines test designs and delivers business enabled Testing solutions that help Global 2000 companies win in a flat world. These solutions focus on providing strategic differentiation and operational superiority to clients. Gateway creates these solutions for its clients by leveraging its domain and business expertise along with a complete range of testing services

With Gateway, clients are assured of a transparent business partner, world-class processes, speed of execution and the power to stretch their IT budget by leveraging the Global Delivery Model.

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