



Project Development for a Successful Airline Company

■ Client description

Our client is Conchango, a UK business consultancy and systems integrator with cutting-edge digital design capabilities, rated by Forrester as the best Web Design company in Europe. Conchango has been helping businesses maximise their potential for nearly 20 years. They serve high profile clients in core industries (retail, consumer packaged goods, financial services, energy, media and entertainment), and bring technology and industry innovations to new industries and clients.

Conchango has been commissioned by Virgin Atlantic with the development, maintenance and support of their new website.

Since it was founded in 1984, Virgin Atlantic has become Britain's second largest carrier serving the world's major cities. Now based at both London's Gatwick and Heathrow airports, it operates long haul services to 30 destinations world-wide as far apart as Las Vegas, Sydney and Shanghai.

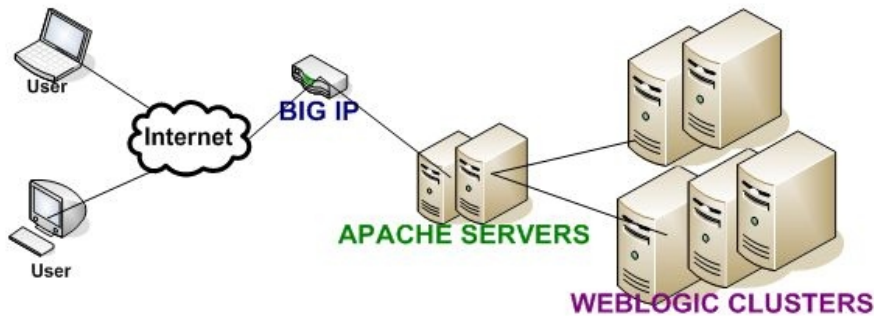
■ Project description: continuous development

Virgin Atlantic recognises that having sustained maintenance and support to its website is key to remaining competitive as well as creating a dynamic environment to engage site visitors. Site visitors must be provided with the tools and knowledge to use the services in such a way as to derive maximum benefit from a minimum amount of actions.

For this reason, Virgin Atlantic commissioned Conchango, as the main contractor for their website development. As Conchango has been working with iQuest as a long-term nearshore development partner since 2004, they have selected iQuest to deliver the ongoing development services.

Conchango business analysts work closely with Virgin Atlantic representatives to gather and define functional specifications for each project. As soon as the functional specification is defined, iQuest becomes fully involved in the technical stage. Due to their experience and knowledge of the project, iQuest engineers are often involved in the early stages, when the specifications are shaped.

■ Architecture overview



■ Project overview: dynamic content

End user requests reach a BigIP load balancer, which evenly distributes requests between several Apache web servers. By using an Apache WebLogic proxy plug-in, the Apache servers forward the requests to one of two clusters of WebLogic application servers. The web servers host static content such as images, stylesheets (css), javascript, flash.

The website is implemented as a JEE application, formed by a backend module (ear) and a web module (war), deployed on the WebLogic application servers clusters.

As the content of the website is very dynamic, and has to be updated frequently, the business editors team use the Tridion CMS (Content Management System) to publish up-to-date information.

The website application communicates with several external systems providing a variety of different services including flight data caching, flight reservation, address validation, insurance, hotel and car hire, frequent flyer data, tracking, boarding pass printing, online payment and many others. This large variety of external system interactions adds significant complexity to the website application.

■ Technologies

JEE: EJB, JSP, Servlet, JMS, Web Services, Java Mail; HTML; XML; CSS

Open source tools: Apache web server, Spring, Lucene, Velocity, Maven, Ant, Jira, SVN, Axis, Castor

Commercial Tools: WebLogic 8.1, Oracle 10 RAC cluster.

■ Development process: an eye to the future

iQuest starts with the analysis of the functional specification and estimates the work in terms of resources and timelines. This phase is followed by project construction performed by a dedicated iQuest team, which creates the low-level design and implements the specification.

The focus is not only on implementing the specified functionality, but also on improving the code base and following a design that allows re-usability, robustness and great flexibility for future changes. Given the dynamic and fast-paced nature of the business, this is very important, offering the client the means through which to handle future projects more easily than the case would be, had they to start from scratch every time.

As soon as the functionality is in place, iQuest test engineers join in and perform system integration testing to ensure that the new functionality meets the specifications and that the existing functionality is preserved.

■ Challenges and Solutions

Challenge	Solution
Increase bookings through the website.	Re-implemented the entire booking interface according to a new, richer web design. Re-implemented the back-end booking engine based on algorithms that retrieve most of the flight data from an external cache system, instead of obtaining all data directly from SHARES GDS.
Achieve process efficiency e.g. quicker DIY bag drop, faster boarding, more accurate gate reconciliation.	Implemented functionality that allows the printing of a Bar Coded Boarding Pass as part of the online check-in process.
Build the best online amend itinerary solution that is scalable, usable, fun to use and contributes to the success of the airline.	Worked closely with the client to implement new amend itinerary functionalities such as upgrade cabin and change date.

■ Results: all the core elements of a successful airline website

The Virgin Atlantic website is now very stable, allowing an increased number of users to book, amend bookings or check in online, plus a lot more adjacent services. This site now provides the vast majority of the services which were previously available only through call centres, such as searching for flights and holiday packages, booking flights, cars, hotels, insurance, checking flight schedules, updating bookings (changing dates, upgrading, amending different preferences, etc).

The projects we implemented over the time for Virgin Atlantic website have introduced numerous benefits including increased number of website bookings. In overall terms the customer experience has been enhanced through a more robust, stable and flexible application.

Throughout this project, iQuest developers have leveraged their experience in dealing with extremely dynamic environments, under time constraints.

The most important result, however, is to see the end client more than satisfied with the entire range of services we have provided. They now have a simple, clean, and easy-to-use website for the traveller whose time is too valuable for browsing.

About iQuest

Headquartered in Germany and having two development centres in Romania, iQuest is an IT solution provider delivering customised solutions in financial services, telecommunications, life sciences, logistics, media and IT. With over 12 years of experience and more than 320 employees in its 7 European locations, iQuest delivers best-in-class services for long-term clients in Germany, the United Kingdom, Switzerland and Sweden.