



## The Royal College of Physicians Adopts New Online Survey Technology to Boost Productivity and Response Rates

Published: May 2005

***Each year, the Medical Workforce Unit at the Royal College of Physicians (RCP) conducts an Annual Consultant Census to capture data on the working patterns of consultants. The results are published and made available to the government, media and the public. In the past, they have issued the survey as a paper-based questionnaire, and responses have been manually scanned and verified by an outside company, before being sent back to the College for analysis. This case study describes how the RCP has been able to cut survey processing costs by around £7,800 in the first year, save time, increase response rates and efficiencies by adopting an online survey solution, called FormArtist Server. This new technology has also enabled them to achieve dramatic improvements in productivity, and the Unit is able to take on more survey projects for the College as a result.***

### Situation

The Royal College of Physicians is a registered charity that aims to ensure high quality for patients by improving standards and influencing policy and practice in modern medicine. It sets standards for clinical practice, conducts examinations, defines and monitors education and training programmes for physicians, supports doctors in their practice of medicine, and advises the Government, public and the profession on healthcare issues. Founded in 1518, the College, based in Regent's Park, London, is a professional membership organisation representing the concerns of almost 20,000 Members and Fellows worldwide.

Each year, and for the last ten years, the Medical Workforce Unit at the College conducts an Annual Consultant Census on behalf of the Federation of Medical Royal Colleges of the UK. The Census collects workforce related information about consultants in 26 medical specialties throughout the UK and provides up-to-date information on the working practices of consultants, demonstrating trends in consultant numbers, types and working patterns. Census data is made available to the Government, the media and the public, and in the past has been instrumental in influencing Government policy. Data on the number of consultants and distribution of specialties has been part of a powerful argument that has led towards the Government expanding consultant numbers. The Census also enables the College to monitor gaps in the provision of services and



### Solution Overview

#### Customer Profile

The Royal College of Physicians is a registered charity that aims to ensure high quality for patients by improving standards and influencing policy and practice in modern medicine.

#### Situation

Needed an electronic survey solution for their Annual Census to replace their manual paper-based method and to reduce the costs of outsourcing the scanning and verification of survey responses.

#### Solution

Deployed the FormArtist Server software package from Quask, which allowed them to deploy the Census online on their web site and quickly and easily analyse the results.

#### Benefits

- Achieved an overall saving of around £7,800 in first year and anticipate even bigger savings in the forthcoming year
- Increased response rates and response times
- Able to receive immediate feedback from surveys
- Able to manage surveys in-house without having to outsource
- Significant time savings
- Dramatic improvements in productivity
- Unit able to take on more projects as a result

#### Software

FormArtist Server – High-end, database driven forms and survey solution  
2 Form Design Clients

#### Partner

Document Capture Company (DCC)

#### Supplier

Quask

excessive workloads, and assists the College during its discussions with the NHS Executive when negotiating future trainee numbers.

The Medical Workforce Unit managed by Nina Newbery and with Darin Nagamootoo as Project Co-ordinator, is responsible for compiling the Consultant Census. They also run a questionnaire service within the college and have implemented a number of surveys for various departments and college committees. Up until September 2004, their methods for collecting Census data had been to send out a 5 page paper-based questionnaire, which in 2003 they sent to 8,000 consultants. Questions asked include personal details, post, plans for the future, work location, type of work, workload, hours worked, professional development, retirement plans etc. The questionnaires were sent out with a certain amount of pre-filled data that they had collected from the previous year's Census already included. This was done to make it as easy as possible for consultants to complete the questionnaire, given their busy schedules and the fact that they were under no obligation to participate. Returned questionnaires were then scanned using a scanning software package called Teleform. Teleform Reader allowed them to scan in each form and the Verifier module read the data and converted the handwritten responses to type written format.

The whole process of scanning and verifying was very painstaking and required each questionnaire to be checked question by question to ensure that the conversion to typed format was correct. There would inevitably be problems with certain hand written comments converting, and the quality of the paper and ink determined how accurate the conversions were. Initially all of this was conducted in-house, but the manual process of checking and amending each questionnaire was proving incredibly time consuming, and the Workforce Unit employed the services of the Document Capture Company (DCC) based in London to do the scanning for them. Happy with the service they were providing, they eventually outsourced both the scanning and verification process to DCC. For people who didn't return the questionnaires, another abridged version of the questionnaire was re-issued in the hope that the shorter version would elicit a response. The data captured was then exported to their Access program for analysis and reporting. The whole process of capturing data in this way was both time intensive and costly – the time taken to prepare, print and pre-fill the questionnaires by hand, the time taken to re-issue questionnaires, the time taken to scan and verify each questionnaire, the cost of printing and postage, and the cost of outsourcing the scanning and verification process.

Nina Newbery decided that there had to be a 'better' and more efficient way of doing this and embarked upon looking for a solution. They already had experience of using a web-based forms design package called Opinion Taker that they were using to administer very simple web-based questionnaires for the College, and Nina decided that an online approach to collecting data would be the way forward. In the 2003 Census, one of the questions that was asked was would consultants complete the questionnaire online via the RCP website. With most doctors having access to a computer, over 1/3 of respondents indicated that they would, and the green light was given for the Unit to source a web forms solution.

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Medical Workforce Manager  
Royal College of Physicians

The key issues they faced in finding the right solution were that it should fit in with their existing technical infrastructure, that it should be relatively easy to use, that it should automate the pre-filling of data to forms, and that it should address their concerns over the security of data given that they were capturing sensitive personal information.

## **Solution**

DCC already offered and supported an online forms and survey package called FormArtist Server from the software company Quask. DCC were a reseller for Quask and had a great deal of experience in implementing their forms and survey package. Having had a demonstration of the technology, and being impressed by what they saw, the Medical Workforce Unit went ahead and purchased FormArtist Server which delivered on a number of their key requirements. Firstly it fitted in with their technical infrastructure and they were easily able to install the server side components onto their Microsoft SQL 7.0 Server. As both Nina and Darin needed to have the facility to design forms, they purchased two FormArtist Server design clients to sit on their desktops which were running Windows XP. They could also easily host the forms on their web server which was running IIS. The cost of the package was also attractive and, unlike some web survey packages, they paid a one-off fee which allowed them to process an unlimited number of forms and responses.

Nina and Darin were impressed with how easy FormArtist Server was to use as a novice. It would allow them to produce very attractive forms quickly and easily without having design skills. This is because of its PowerPoint like WYSIWYG and drag-and-drop approach to form design, and its pre-defined style sheets. They could also see that FormArtist Server's extensive library of data collection objects and form design features and emoticons would allow them to produce visually rich forms that might encourage higher response rates. FormArtist Server's scripting function would also allow them to build intelligence into their forms (such as page-skipping, custom validations etc.) using a simple dialog-driven script manager, rather than having to write JavaScript code. With FormArtist Server, their respondents would be able to access the forms through their browsers, with no plug-ins required, and they could create multi-page forms which didn't require web re-loading between pages, making the form-filling experience quicker and more pleasurable for their respondents.

FormArtist Server also offered them the ability to integrate with their own internal database and through its event driven 'triggers' and API, would allow them to automatically pre-populate each form with information from their Access database so personalising forms and making it easier and quicker for their respondents to complete. They were also satisfied that the data would be secure as FormArtist Server doesn't store any information on the web server's hard disk other than the components themselves, with all forms and data being stored in the FormArtist Server database.

## **Implementation**

Discussions about purchasing a new system started in March 2004 and the system was purchased in May 2004. DCC provided assistance in installing and implementing the system,

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and testing was carried out from May to July. During this time, they reproduced the paper Census questionnaire as an online form which consisted of 14 pages with scripting incorporated. They found that they could easily produce an attractive form design which was in keeping with the College's own identity, incorporating the crests from the Royal Colleges of Physicians and other images. DCC provided a day's training on form design and deployment of forms to their web server, as well as providing ad hoc guidance on scripting and other features. Throughout the implementation process, the RCP was extremely satisfied with the support they received from both DCC and Quask's technical support team who they found to be both quick to respond and helpful. The new system was officially launched in September 2004 in time for the 2004 Census.

For everyone who had indicated that they would fill in the questionnaire online, they were sent an email which contained a link to the Fellows and Members area of their website and from where they could gain access to the form. The emails were sent out in one go using their bulk email facility, and each consultant was required to enter their own unique username and password, and on doing so they were presented with a personalised form that contained their own personal pre-filled data. FormArtist Server had enabled Nina and her team to define which questions they wanted pre-filled so that on form access, data was automatically loaded to the relevant fields. As it was so easy to do, they were now able to pre-fill more questions in the electronic version. One question in particular which focused on how many hours consultants worked in different areas and which included 34 different work activities had always been a difficult one to answer, and the Workforce Unit received lots of calls from consultants asking what they had filled out the previous year. With the new system, this information was automatically loaded into each form on retrieval and all consultants had to do was to update the figures where necessary.

Paper questionnaires were still sent out to those who had not ticked the box for online access, but they were also given the opportunity to complete the questionnaire online by providing them with the URL link. The process of scanning and verification of paper questionnaires was still outsourced to DCC. In all 8,217 consultants were sent the Census and of these 2,529 were emailed the link to the online form and 5,688 were sent the paper version, though they anticipate that for the 2005 Census, a much greater percentage of consultants will utilise the electronic form as they become more aware of it. The only issue they had with the FormArtist Server forms was that of incompatibility with Macs which wasn't a major problem as the number of consultants using Macs was relatively small.

## **Benefits**

Explains Nina Newbery, Medical Workforce Manager at the RCP, "After sending out the questionnaire email notification, we had a flood of responses overnight. Unlike the paper based method, responses were immediate and for the first time we had information at our fingertips. It was also easy to export the data from the FormArtist Server database to our Access package where we could immediately begin the process of data manipulation and analysis. With the paper questionnaire, it would take weeks, even months, to receive the returned data and then we had to wait for the questionnaires to be scanned and verified before we could perform any sort of

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analysis on the data. Here we were able to control the whole process without having to outsource.”

“Issuing the Census electronically has saved us an enormous amount of time and money. In total we have decreased our mailing costs by 31% (saving £1,800) and our processing costs by 32% (saving £2,000). That’s a total saving of £3,800 on the Census alone. In addition, for the surveys where we would normally outsource the processing, we have saved approximately £1,000 per survey. As we have conducted four electronic surveys, that’s a saving of £4,000, giving us a total overall saving of £7,800 in our first year of using FormArtist Server. As our use of the application grows, we anticipate even bigger savings in the forthcoming year.”

Continues Nina “We have also saved enormously on time – the time taken to issue and process the paper questionnaires, and the time taken to pre-fill each questionnaire which is now done at the touch of a button. For the 2004 Census, we are proud to announce that we are now a month ahead of schedule. This saved time gives us the opportunity to focus on the presentation of the report as we are always looking at ways of improving our processes.”

The saved time achieved through their new technology has also allowed the Unit to take on more projects, and in addition to the Census, they have already completed a number of additional online surveys for the College. They recently issued an online questionnaire to 4,000 Specialist Registrars focusing on acute medicine and the European Working Time Directive. Having just completed the Census, creating this survey was extremely quick and straightforward, and they received just under 1,000 responses which they were very pleased with. They have also issued an anonymised online survey on medical professionalism to junior doctors, and to extend the reach of their audience, they encouraged other medical organisations e.g. BMA to also advertise the link in their email broadcasts. As a result, they have been able to gather a large amount of data quickly and painlessly.

As Nina explains, “The great thing about this method is that you can design and deploy a form and email the link one day, and receive the responses the next day! What’s more, we’ve had great feedback from consultants who have commented on how quick and easy the forms are to fill out.”

## **Future**

In the 2005 Census, the RCP are looking to add a print button to the form so that consultants can print out their completed questionnaires for future reference. This is something that has been requested in the past, and the system will enable them to do this. For the 2005 Census, they are also looking at the offline form filling capabilities available in FormArtist Server which will allow respondents to fill in forms without requiring them to be connected to the internet. It will also enable them to save partially completed forms and come back to the form at a later stage to complete which is particularly useful where they need to go away and gather relevant data, ask staff, look at records etc.

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In February 2005, DCC accompanied by Quask, presented their FormArtist Server solution to the other Royal Colleges at a seminar held at the RCP in London. The feedback was very encouraging with many colleges, all of who conduct their own Censuses, expressing an interest in adopting the technology.

### ***For More Information***

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