Isomorphic™ SOFTWARE

The most advanced technology for building RIA applications

Case study

Developing IT solutions to support research for new, more effective and efficient treatments for heart and lung disease.

Royal Brompton & Harefield NHS Trust

"Filter Builder and Data Source XML Generator helped us to create a solution to dynamically query existing data sources without coding any reports. It also provided an interface for researchers to mine data using nested rules without learning SQL."

Steven Collins, IT Lead, cBRU

Better Data, Better Outcomes

Royal Brompton & Harefield NHS Foundation Trust is a partnership of two specialist hospitals, known throughout the world for their expertise, standard of care and research success. As a specialist trust with a worldwide reputation, their focus is on heart and lung disease. Through numerous research projects (each year between 500 and 600 papers are published by researchers associated with the Trust), they bring benefits to patients in the form of new, more effective and efficient treatments.

RBH has achieved incredible things: performing the first successful heart and lung transplant in Britain, implanting the first coronary stent, and pioneering intricate heart surgery for newborn infants. Countless lives have been saved, diseases prevented and lives extended. However, the technical support for the research process was - until more recently - ad-hoc and inconsistent. Research data was often collected on paper and rekeyed into spreadsheets, or stored in one-off databases. This led to manual labour processes, data availability delays, and data accessibility problems. Analysis was also difficult and inefficient as data was stored in disparate locations, and a lack of tools necessitated custom SQL reports to be written.

Steven Collins is the IT lead at CRC (Cardiovascular Research Centre). His team set out to make researchers significantly more efficient and effective by providing the *'Translational Research Web App'*. The initial goal was to build a multi-function application for a disparate group of users to enter research data.
Steven's team selected *Isomorphic Software's Smart GWT* as the core technology. *"It helped us create dynamic and fast web apps accessible from different operating systems, without worrying about differences between browser versions"*, said Steven. *"Its rich component library helped us to create web forms and web portlets easily, and its validation features prevented all mistakes during data entry"*. The design, development and testing of the application was completed within three months, and was extremely well received. It became the core of the full solution available today.

Challenge

- Build and maintain research applications accessible across operating systems and browsers
- Mine research data across multiple studies, collected in different ways and stored different systems
- Provide powerful data analysis capabilities that don't require end users to write code

Solution

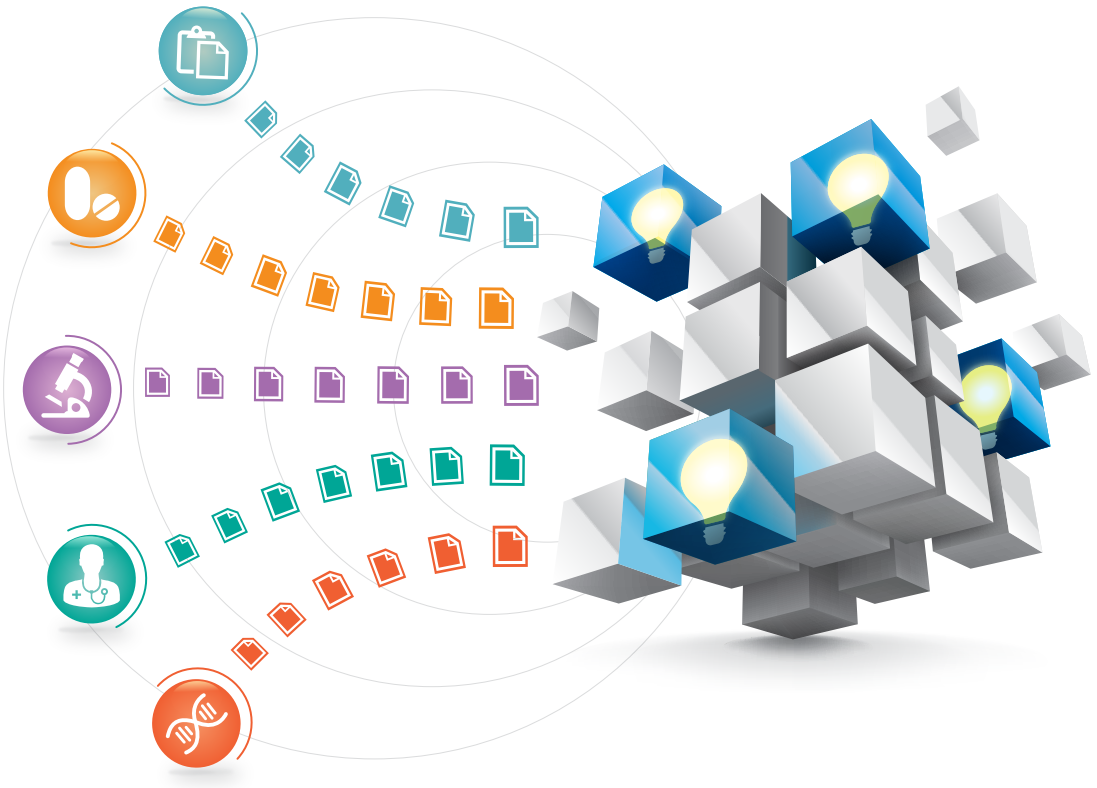
- Smart GWT UI components used to easily build web applications and web portal
- Validation features in Smart GWT ensured excellent data quality by eliminating input errors
- Filter Builder and Data Source XML Generator combined disparate data sources, and provided ability to perform complex queries via UI, without writing code

Why SmartClient?

- Ability to rapidly develop applications, and write custom java code to interface with legacy systems
- Smart GWT Showcase with hundreds of samples with source code provided confidence in capabilities
- Smart GWT is cross browser, cross operating system and all device ready

Results

- Designed, built and tested research web application in three months and within a tight budget
- Combined all research data (medical events, patient information, etc.) in a single web portal
- Leveraged dynamic data filtering to create very complex queries through the UI, without writing code



Same Data, New Insights

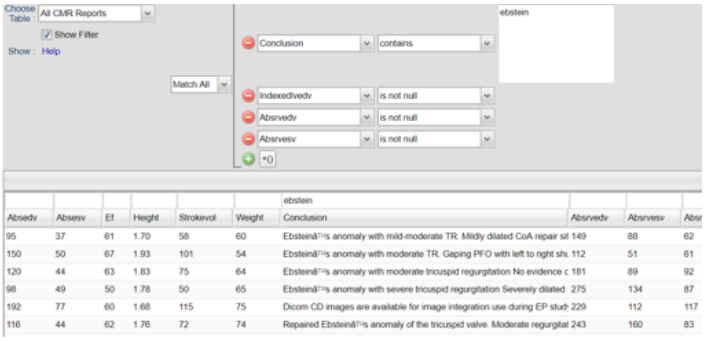
Since the initial application, Steven's team has added a great deal of new capabilities. When designing these capabilities much inspiration was drawn from the Isomorphic showcase. The showcase features hundreds of components, each with sample code, which also proved invaluable when it came to troubleshooting development issues.

The CRC has many research studies going on at any given time, and data gathered in one study can actually be useful in others. Combining data across studies, and with patient information as it is captured over time (for example, medical events, doctor visits and reports) can provide invaluable insights into ongoing benefits and outcomes of treatments.

Providing the ability to mine data across multiple studies, data sources and legacy systems was therefore crucial.
This type of development is typically fraught with risk and difficulties as there are so many unknowns.
However, with Smart GWT, *"the DataSource XML Generator made this unbelievably easy and its ability to use custom java code to interface with legacy systems was essential."*

Empowering World-class Researchers

The latest solution at CRC is the *'Cardiovascular Research Centre Database Internal Web Portal'*. It makes available all research data from all projects, available through a web portal.



Dynamic Data Filtering for 60k to 200 records in seconds

Smart GWT *Dynamic Data Filtering* was leveraged within the web portal. It enables researchers to create very complex queries (e.g. tree / nested, and, or, not) directly through the user interface. This means that researchers can focus on their job, and not have to learn SQL programming to generate their reports. Since access to data is restricted based on user security levels, researchers are allowed to explore and draw new meaningful conclusions, which goes a long way to helping them efficiently and effectively develop new treatments.

So, is it fair to say that *CRC team* is happy they selected Isomorphic's Smart GWT? Absolutely! According to Steven, it is *"Exceptional. To enable the users to explore multiple data sources data through the user interface is nothing short of a miracle."*

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Want more info?
http://SmartClient.com