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**DARTMOUTH MEDICAL SCHOOL
STREAMLINES CLINICAL TRIAL MANAGEMENT**

Why M7's NitroX Web Application Development Tool Excelled Against all other Development Options

SUBJECT

BioInformatics at Dartmouth Medical School (DMS) is designing, coding and implementing the data management for a 5-10 year clinical trial on the treatment and prevention of Colorectal cancer using ChemoPrevention with Calcium and Vitamin D.

Specifically, can inexpensive and easily available supplements like Calcium and Vitamin D reduce or eliminate the likelihood of a Colorectal cancer diagnosis in test subjects that are genetically predisposed to the disease?

CHALLENGE & GOALS

With research facilities spread across the United States, twenty (20) remote research managers, 2,000 research subjects, and five (5) program administrators, the compilation and interpretation of research data through paper-based questionnaires and manual data entry had proven to be an expensive, arduous process with a tremendous time lag and an initially high margin of error.

Paul Courtney, Project Director for BioInformatics at Dartmouth Medical School, required an electronic data management system to automate data collection and accelerate the interpretation of study data by:

- Replacing the current paper-based and manual data-entry system,
- Reducing human data entry errors,
- Increasing the accuracy and validity of the studies research, and
- Automating study management activities.

Courtney performed an extensive review of the commercial applications available to bring the clinical trial process into a fully electronic format. Yet none of the products could fully address the programs needs – requiring the creation of a custom web application. Courtney then began to test web application development tools and quickly came to the unfortunate conclusion that a great deal of time (and therefore, money) was going to need to be devoted to the applications development. That is, until he tried NitroX from M7.

**DEVELOPMENT SIMPLIFICATIONS
NITROX COMPARED**

While the application Dartmouth required possessed a unique feature set, the *web application development* process was simplified and accelerated through the use of NitroX in place of other development tools the following ways:

FUNCTIONALITY ABSENT IN OTHER DEVELOPMENT TOOLS

- Integrate DMS use of the Struts framework and integrate all Java classes with the front end
- Ability to see the entire application at one time
- Employ advanced Struts tags
- App X-Ray
- Compilation of Java Server Pages
- Generate "Getter & Setter Methods"

NITROX DEVELOPMENT IMPROVEMENTS

All quotes furnished by Paul Courtney, Project Director

- "Nothing came even close to being able to giving us access to Java classes when we were trying to edit a web page. NitroX eliminated all of the guess work."
- "By providing a complete view of the application on one screen, I don't have to jump between screens anymore to get a complete view of the health and development stage of the application."
- "Other tools made it impossible to do anything beyond just basic Struts. When we used advanced Struts tags, they wouldn't display information correctly and wouldn't provide a preview that worked."
- "App X-Ray is unbelievable in the amount of time and headache it saves. When you're dealing with numerous interdependent files you don't want to have to worry about checking your spelling 20 different times. App X-Ray flags all the places in the application where a change needs to be made to a particular method or error. Like a spell checker, it automatically locates all the errors so you don't have to hunt for them."
- "Being able to have the Java Server Pages compile so you can see immediately if there are any compilation errors identifies stupid little errors that make a mess. NitroX identifies the errors before you even try to run the program. Clean and efficient."
- "When we create a new class, NitroX will automatically generate all of our getter and setter methods which otherwise we would have had to enter manually."

QUANTIFYING THE RETURN ON INVESTMENT

"I cannot even begin to quantify how much time and money NitroX has saved us. Without even having completed the full development of the application, NitroX has already paid for itself over 100 times."

ABOUT M7 CORPORATION

M7 Corporation, Inc, the leader in web application tools based on open source and open standard technologies, is exclusively focused on improving the development of web applications for serious developers who want to avoid platform lock-in. M7 draws on its long history of experience in understanding the complexity of web application development – the proliferation of J2EE platforms, web containers, web application frameworks such as Struts and public and custom tag libraries. Drawing on this depth of understanding, M7 develops innovative products, such as NitroX, which fuel an incredibly high level of productivity in creating, editing, or debugging any part of a complex web application.

Based in Cupertino, CA, M7 is privately held and venture backed by Highland Capital Partners, Redpoint Ventures, CIR Ventures and Genevest. For additional information, visit the company's web site at www.m7.com.

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