



# Upside Research

## Implementation Brief

### Micro-News Network: Emergency Alert System Built with Compuware OptimalJ

#### Business Problem

Micro-News Network delivers solutions that enable organizations to provide emergency alert notifications to their employees and/or communities. MNN collects, analyzes and distributes time sensitive emergency information directly to those affected via cell phone, pagers, PDAs, email, telephone, and/or MNN's proprietary device. Clients are from federal, state and local governmental agencies as well as commercial organizations such as refineries, manufacturing plants, shopping malls, and schools. "Our main focus is delivering time-sensitive, area-specific information before, during, and after an emergency," explains Don Ball, Chief Marketing Officer.

The foundation of Micro-News Network's services is its technology. The company has created proprietary software applications to use in its own central operation center, to quickly deliver information to customers. In addition, Micro-News Network wanted to create a standalone system that customers could own and operate on their premises to assist with emergency management.

A key objective was to create a highly flexible application that could run on anything from a Windows desktop to a Solaris data center environment, while preserving their development investment. "We wanted to create an application that would be appropriate for individual use and could scale up to support our operations center," says Richard Seegmiller, CIO.

The development team needed to build an entry-level system that would be standalone and support around 1000 recipients. It needed to be capable of sending messages via email, which could be received via pager, PDA, cell phone, or computer. With the application design established, the next step was choosing a technology and finding tools to assist with development.

#### Solution Details

The IT staff evaluated both .Net and J2EE technology at the beginning of this new project. After determining that .Net would not provide platform and server flexibility that a J2EE solution would, Micro-News Network decided Java was the way to go.

The next step was to find a J2EE development tool that could help rapidly create the application they wanted to build and somehow to handle the complexity of traditional J2EE development. Seegmiller said, "When taken in components, the pieces are simple. But when you start to put them together into an enterprise application, J2EE can become very complex and development can become a rather daunting undertaking."

#### Company

Micro-News Network

#### Industry

Emergency Notification

#### Challenges

Finding a development tool and technology that would leverage existing resources and enable the company to build a standalone application for clients that could scale to its operation center

#### Product Solution Components J2EE, Compuware OptimalJ

#### Results

- Saved 60-80% development time and costs with OptimalJ
- Project created high-quality code that eases integration
- Resulting application is now being demonstrated to first customers
- 90% projected savings on future application modifications

To accelerate its development effort, MNN looked for outside consultants that could assist in the creation of the application. "Our research indicated that it would take 4-6 people about six weeks to develop a basic framework for the application using J2EE," stated Seegmiller. This pace was more expensive and slower than the team wanted to achieve, so it began looking for development tools that could significantly speed the J2EE development process. The solution the company settled on was Compuware OptimalJ.

Compuware OptimalJ is a model-driven development tool that automates the development of infrastructure code needed for application development. "We chose OptimalJ because it provided a number of features that fit with our objectives," stated Seegmiller. "OptimalJ lets you build a data model and express it in a technology, such as J2EE, and then it generates functional code." Seegmiller also noted that Compuware OptimalJ generates all the CRUD – create, read, update, and delete – functions needed to support the defined data model. In addition, Compuware OptimalJ provides code patterns that are consistent with the best practices in the industry, enabling Seegmiller's team to save steps, since the code patterns have already been through rigorous testing. Micro-News Network was also able to create its own code patterns that it used frequently and add them to the Architecture Edition of Compuware OptimalJ.

Because Micro-News Network has a small IT development staff, Seegmiller hired contractors to get the project started. An architect familiar with J2EE and Compuware OptimalJ as well as a developer familiar with Java worked together on the project. The developer who had no prior OptimalJ experience spent about 12 hours going through tutorials and at the end was able to begin developing with the product.

"While someone skilled in J2EE will have an easier time with Compuware OptimalJ, the fact that one of our developers picked it up quickly reflects the ease of using the tool," stated Seegmiller. It took the team of two developers about a week to build the first application, an impressive feat.

"What those developers did in a matter of days would have taken six to eight weeks with another product and the quality of the code would not have been nearly at the level of what we have now," believes Seegmiller.

## **Business Benefits**

- One of the largest benefits has been a timesaving. Micro-News Network saved between 60-80% of time on the initial development of its new application. As for the level of effort for the project, Seegmiller believes it is an order of magnitude in savings.
- The resulting applications and generated code are robust. "I've gotten myself wrapped around the axle a few times trying to add or delete things from the database while testing the data model. However, I've never had a loss of data, incorrect data captured, or a system crash from the code that OptimalJ has generated," notes Seegmiller. "The OptimalJ code is concrete and just doesn't break."
- The quality of the code developed in Compuware OptimalJ is another benefit. The code was more complete than if it had been developed by traditional coding methods, the resulting application was more reliable, and the documentation was more comprehensive than other tools on the market.
- The fact that Compuware OptimalJ generates code to support the basic CRUD functions is a significant benefit for Micro-News Network because it enables them to utilize existing development best practices.
- The graphical representation of the data model serves as the foundation of the documentation for OptimalJ, so "what is drawn is what is built," explains Seegmiller. If MNN needs to make adjustments, they simply make them in the graphical model and then regenerate the code.

- Maintenance of the resulting applications has been a “big win” according to Seegmiller, because the process of generating the code from model to technology to lines of code is an integrated process. This is a huge benefit over solutions that require a separate modeling environment from the development environment.
- MNN estimates that by using a model-driven approach to its application development it has a 90% savings on the cost and time required for refinement and management of future application changes. “Compared to having programmers reconciling different data models and trying to hand code the changes, I can see that future adjustments to our code could easily amount to a 90% savings by using Compuware OptimalJ,” says Seegmiller.

## **MNN Learnings**

Seegmiller sees significant value in using a model-driven development approach to J2EE development. “If you have a team of J2EE programmers, you can improve their programming efficiency, getting more done with the same amount of resources, or you can get the same amount done with fewer programmers.”

While Compuware OptimalJ made a significant difference in development cost, time, and resource requirements, it didn’t do everything. “I’d love to see OptimalJ linked more to the generation of Use Cases,” says Seegmiller. Instead, MNN developed the Use Cases and user interface components of their application separately, after generating the core application infrastructure with OptimalJ.

In the old days of automated code generation, companies were often concerned with the flexibility of the resulting code and how hard it would be to maintain over time, as they added in special cases or custom code. This doesn’t seem to be a problem with OptimalJ. “We haven’t felt constricted by using a model-driven development environment,” says Seegmiller. “It’s easy to integrate your business logic and keep it separate from the generated code, and when you couple that with the included source code control system (CVS), one can have a fairly strong level of confidence that they can roll back to a known, working version if something does go wrong.”

## **Upside Analysis**

Micro-News Network has seen significant return on its investment in Compuware’s OptimalJ tool. The company was able to slash its development costs for the new application by more than half, both in personnel and time. This has delivered a significant advantage by enabling the new application to come to market faster, meeting customers’ needs. The decision to go with a J2EE model-based development was forward-thinking, and Micro-News Network believes it has made the right decision. The company is now exploring other applications to build with Compuware OptimalJ.

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### **About Upside Research**

Upside Research is a research and consulting firm focused on helping clients put application development, Web services, business process management, integration, and enterprise infrastructure challenges in perspective. Upside Research helps organizations find practical ways to achieve their IT goals and profit from the diversity of a changing technology landscape.

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