

# PORTER VALLEY SOFTWARE CREATES A GROUND-BREAKING REPORTING ENGINE WITH DATA DYNAMICS ACTIVEREPORTS

## CASE STUDY



Porter Valley Software needed a powerful, flexible, customizable reporting engine for its InspectVue product—one that could rapidly process programmatic data as the report executed; combine sections from multiple reports into a single document, with consistent formatting throughout; enable inspectors to customize their reports with photos and .PDF files; and rapidly generate professional-looking reports with a “Wow!” factor that would impress its customers. They brought in Mark Donohoe of IntuiSoft to create the reporting engine—and Donohoe convinced them to use ActiveReports. The resulting report engine greatly exceeded Porter Valley’s expectations, generating reports more than 10 times faster than their old reporting engine, and enabling users to easily customize reports and import third-party documents. Added benefits from the developer’s perspective included the unprecedented flexibility provided by ActiveReports, which enabled him to rapidly create an agile reporting framework that broke new ground in reporting capabilities and could be easily integrated with any platform.

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IntuiSoft

### Background

Porter Valley Software, located in Porter Ranch, CA, designs reporting software for the inspection industry, including residential and commercial inspectors. Their product, InspectVue, had been using a reporting engine created in Visual Basic 6, which ran on text files rather than a database system. Over the years, their customers had identified several problems with that reporting engine:

- It took too long to generate a report—so long that users would typically initiate a report and then go get a cup of coffee while it ran.
- Because reports were generated on the fly, the software couldn’t compile the table of contents till it completed the report—so the table of contents printed out last, and users would have to manually insert it at the front of the document.
- It was difficult to customize and configure reports to meet specific user requirements.
- Inspectors typically want to include other documents in their reports, such as .PDF files from the libraries they refer to in the course of an inspection. The existing reporting engine required them to upload the documents separately and integrate them manually. What they wanted was a way to automatically integrate these third-party documents into their InspectVue reports.

In 2005, the company decided it to enhance its reporting engine to address these concerns. Their initial plan was to move to Crystal Reports, and they brought in Mark Donohoe, President of IntuiSoft, Inc., to create the new reporting engine.

### Challenge

Donohoe had worked previously with Data Dynamics ActiveReports, a powerful ActiveX report generator that works within the Microsoft Visual Basic environment, and knew that its built-in flexibility would enable him to create a superior solution. “We had some pretty advanced layout and printing requirements, and ActiveReports is the only report engine I know of that was up to the challenge,” said Donohoe.

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“Basically, we wanted a system where each section of each report was like a Lego piece, and users could snap them together in any combination and order they wanted and still get a professional-looking report that was consistent throughout.... ActiveReports was the only component out there that had the capabilities and flexibility they needed. Why should they be out there trying to chisel a wheel out of stone, when Data Dynamics already offered a perfectly good wheel?”

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Specifically, the reporting engine needed to be able to process data programmatically as the report executed, in order to:

- Make the page formatting—including margins, pagination scheme, and headers and footers—consistent across the entire document, even though the document might consist of sections drawn from multiple different reports and sub reports.
- Place photos on the same page as the text describing them, rather than on a separate page by themselves.
- Create the table of contents after determining the report components but before initiating the actual print job, so the table of contents would print out in the correct order.

“Basically, we wanted a system where each section of each report was like a Lego piece, and users could snap them together in any combination and order they wanted and still get a professional-looking report that was consistent throughout,” said Donohoe. “I told them that ActiveReports was the only component out there that had the capabilities and flexibility they needed. Why should they be trying to chisel a wheel out of stone, when Data Dynamics already offered a perfectly good wheel?”

“I also told them that if they wanted to create professional-looking presentations that would really wow their customers, ActiveReports was the only component that offered enough of a “Wow!” factor,” said Donohoe. “Plus it makes my job, as a developer, a lot easier—I can create exactly what I want, quickly and efficiently. Compared to competitive products, it’s like typing with both hands, versus trying to type with one hand chopped off and the thumb of the other missing, and you wonder, ‘Why can’t I type any faster?’”

### Solution

Over the past four years, Donohoe has created seven versions of the solution. “I turned it into a platform that enabled users to choose what they wanted to include in the report and what order they wanted each piece to appear in,” he says. Initially, he worked with the existing code base. Then he convinced Porter Valley to move up to .NET. The first .NET release was XML-based and included versions for both commercial and residential inspectors. Then, moving up to .NET 2.0, Donohoe built a reporting engine that used SQL Server as its back end. While some sections of the reporting engine are the same across all versions, others are specific to a particular type of inspection.

The solution that Donohoe created with ActiveReports makes the user’s job very easy—all the hard work is done behind the scenes. Donohoe built a framework that sits on top of ActiveReports and uses a series of check boxes to enable users to easily specify what is to be included in the report and in what order. For example, they can:

- Specify which elements they want the report to include—such as a cover page, binder cover page (copy of the cover page to be inserted under the plastic cover of the binder), table of contents, and company description.
- Drag and drop different report components to arrange them in the exact order they want.
- Specify headers, footers, and pagination requirements—and have these elements applied consistently across the entire document.
- Include .PDF files from other sources and have them look like an integral part of the report rather than an add-on.

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- Place pictures on the same page as the text that describes them.

The solution also calculates margins—by determining how wide the content needs to be at its maximum and then applying that value to all elements in the report.

In short, the combination of ActiveReports and Donohoe’s framework enabled the system to handle automatically all the tasks that previously had to be done manually, while giving the report consistent formatting throughout. “Users can now automatically generate a professional-looking output that looks like a single report, even though it may be 10 or 20 reports under the hood,” says Donohoe.

Donohoe has created many reporting engines over the years, but this one was particularly challenging because of factors such as the length of the reports that inspectors generate; the fact that these reports actually consist of sections drawn from many different reports—each with its own formatting; and the need to incorporate objects such as photos and .PDF files. Yet with ActiveReports, Donohoe was able to overcome all of these challenges. At the end of the project, he says, “I was ecstatic—it was hands down some of the best work I’ve ever done. And I never could have created it without ActiveReports.”

Donohoe also noted that the reporting engine was extremely well received by Porter Valley customers and potential customers. “When we demo’d the software at an industry trade show,” he says, “the attendees gave us a standing ovation—for a printing solution!”

In part because of its superior reporting engine, Porter Valley’s software is now used by Allied Schools, a training institute that teaches people to become inspectors. That’s a boon for Porter Valley, because it means students graduate already familiar with their software, so it’s the tool they’re likely to use in the field.

Recently, Porter Valley was acquired by Environmental Services Professionals (ESP)—a company that originally was a Porter Valley customer, and was so impressed with Porter Valley’s software that they ended up purchasing the company. ESP’s software ran on a different platform, but the componentized, flexible nature of Porter Valley’s reporting engine made it easy to integrate with ESP’s systems. “That wouldn’t have been the case if I had been using anything other than ActiveReports,” says Donohoe. “It’s the only reporting component I know that lets you create a truly agile system that’s easy to integrate with any platform.”

### Benefits

Porter Valley’s new reporting engine has solved all the issues that existed with the old engine while also offering additional benefits:

- **Speed.** “ActiveReports has really been optimized for speed,” says Donohoe. “It’s just incredible how fast it is! Even though our reporting engine is a multi-pass system, it is more than 10 times faster than the old single-pass engine. It can generate and display a PDF of several hundred pages in less than a minute!”
- **Customization.** Users can now create reports with exactly the components they want, in any order they want. For example, they can choose to include company information, a building header (with a description and photo of the building being inspected), inspector credentials, and a variety of forms. They can also specify whether photos are to be printed full-page or two or four to a page, and can create and reuse templates—for instance, one for a quick draft, one for a final report, and one for a realtor report, which just lists items that failed inspection and need to be addressed.

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- **Ability to easily import third-party documents.** Previously, if an inspector wanted to import a .PDF file, the reporting engine would print a blank placeholder page and put that in the table of contents. But the .PDF might be longer than just one page, in which case either the document pagination would be off, or the .PDF would have to be placed in an appendix. In any case, the .PDF would be visually inconsistent with the rest of the document. With the ActiveReports-based engine, however, the system can calculate the exact length of the imported document, so it knows where to pick up the pagination in the rest of the report. It can also scale the .PDF down to 80% and put a border around it, so the document headers and footers can be applied to the .PDF, just as they are to the rest of the report.
- **Real-time feedback.** Because the engine is 100% event-driven, the progress bar it displays can tell users exactly what it’s doing at any given moment, rather than just displaying an hour glass. If a user is printing a really long report—say, 1,500 pages and 200 photos—and needs to free up system resources, it’s possible to pause the report, complete other tasks, and then resume processing the report at the point it left off.
- **Fun to work with—and a big productivity booster.** “ActiveReports is really, really helpful for developers,” Donohoe says. “If you’ve been working with a competitive product and you move up to ActiveReports, it’s like you’ve been drawing with a black-and-white palette, and suddenly you’ve got a whole color palette available!” He goes on to note that with ActiveReports, generating a reporting engine is more like architecting a system, rather than just speaking to a printer. Instead of reports being considered as simply output, they become an integral part of the whole solution. “ActiveReports has really opened up the doors to new possibilities for what we can do with report generation,” he says. “And, best of all, it makes reporting fun!”

### About GrapeCity

GrapeCity is a Microsoft Gold Certified Partner and an international award-winning software development firm with headquarters in Japan and U.S. headquarters in Kirkland, WA, employing more than 800 worldwide. GrapeCity’s mission is to turn new ideas for software into marketable products and business solutions. For over 25 years, the company has provided enterprises around the world with state-of-the-art software services to help accomplish this goal. For more information, visit [www.grapecity.com](http://www.grapecity.com) or call (425) 828-4440.

### About Porter Valley Software

Porter Valley Software, based in Porter Ranch, California, is a division of Environmental Service Professionals. Porter Valley is dedicated to developing easy to use computer solutions for the construction and real estate community—solutions that require no previous computer skills or the need for specialized knowledge of word processors or database systems. Its InspectVue product is available in residential and commercial versions.

### About IntuiSoft

Intuisoft, located in Succasunna, NJ, designs compelling custom software solutions on multiple platforms, ranging from PCs and Macs to iPhones and other mobile devices.

