



How Does NY State Manage its PB Applications?

Maintenance and documentation in the face of frequent staff turnover

Most applications need upgrades and corrections. If you maintain in-house development you want to be particularly sharp about this. You can't afford to lose knowledgeable people to turnover and be left with no one able to maintain mission-critical applications. So you'll have to find a solution to handle any question, evolution or crisis related to these applications. Vincenzo Cianfarani, project manager, explains how New York State Department of Environmental Conservation (DEC) deals with such issues.

"The New York State Department of Environmental Conservation brings together all the

state's programs for protecting and enhancing the environment and therefore the health and welfare of all citizens of New York State. The Bureau of Application Development of the NYS-DEC builds and maintains agency-specific software. The software we build generally automates line-of-business functions but occasionally also automates administrative functions. Developing systems that integrate data across media is an important consideration in all of our development. But the agency has had to face maintenance and documentation issues due mostly to our frequent staff turnover. These issues are common to most companies.

At the NYS-DEC Bureau of Application Development software development is done by bureau staff but frequently projects will employ consultants, although the day-to-day management of all projects is overseen by bureau staff. The development environments for our systems are: PowerBuilder, ColdFusion, and Java. There are several legacy Model 204 (mainframe) systems supported by the Bureau but there's no active development in this environment.

The issues we've had to face concerned our application developed with PowerBuilder. Two main needs were identified: maintenance and documentation, due mostly to our frequent staff turnover.

- Maintenance was a big issue for us considering that between 50% and 60% of the effort expended on software occurs after the system's implementation with adaptive maintenance to meet changing requirements, corrective maintenance to fix bugs, and "perfective" maintenance to improve system performance.
- Besides maintenance we needed to keep up with system documentation. System documentation was a lot of work and we believe that good documentation is vital to realizing the benefits and potential of a system over the long-term. Documentation was always scheduled to occur in parallel with integration testing and preparation of the production environment, but various factors affecting team structures (i.e., team members' reassignment) made the documentation process suffer a little.

These issues were affecting team productivity so the agency decided to find a solution. After some unsuccessful research we found Visual Expert for PowerBuilder and the development team now uses this tool, even the project manager.

- The product manager uses Visual Expert to verify the need for corrective or adaptive maintenance to the systems. At this point the problem reported gets verified and documented and then passed on to the developer.
- The developer uses Visual Expert to quickly identify the trouble code or those objects/code that has to be modified to adapt an application to new requirements. The developer can view the structure of the application, or save it with a view to later use, and browse through the code using the hyperlinks provided. A new developer will find a great advantage in the tool's ability

to display opening hierarchies and dynamically preview the visual objects for the application and in the tool's ability to provide all the cross-references to any component in the application from object functions and events to the database table and, most important in our case, stored procedures and DLL files. A feature also very appreciated by our team is the search feature, much more powerful than the one offered by PowerBuilder. The search lets the user navigate the result set (via hyperlinks) or save it in a separate view. Occasionally we use Visual Expert to quickly give a global overview of the application to someone with limited knowledge of the system or to validate modifications and their impact before implementation by conducting an impact analysis (very used).

Moreover, Visual Expert has also frequently been used at NYS-DEC in assisting new staff, with no knowledge of the agency's systems, in individualizing those "problem spots" that need work to adapt our existing systems to new circumstances, requirements, or technologies. Using Visual Expert features allows for much quicker turnaround, reduces expenses, and frees resources for more productive work.

As to documentation, Visual Expert provides well-structured, user-friendly documents both in html and rtf format. These documents let users (i.e., programmers) to get a quick overview and find relevant information without going through endless hours of code walk-through and debugging. One big plus to the documentation is its accuracy level and the easy way to refresh it, if adaptive maintenance was done on the system, with very few clicks."

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About Novalys

Novalys is a French software vendor. The company designs development tools dedicated to PowerBuilder, Sybase ASE, SQL Server, Oracle, and .NET developers. <http://www.novalys.net>. Visual Expert helps to explore and maintain any existing application. It automates impact analysis, source code documentation, and code review. <http://www.visual-expert.com>. Visual Guard provides authentication, permissions, and auditing features for PowerBuilder and .NET applications. <http://www.visual-guard.com>. ■