

## Success: Tecolote Research

### Profile

Tecolote Research, Inc. was founded in Santa Barbara, California, in 1973, and is now the largest and oldest firm providing specialized cost research and estimating support to high technology acquisition programs. The company has grown from an original staff of two to a current staff of over 350 technical and support personnel located nationwide. Tecolote Research, Inc. is located in 25 locations across the country.

### Problem

For years, Tecolote has relied on individual single-tier applications and paper-based systems to perform internal company operations such as contract management, project management, and human resource management. The company has outgrown the capabilities of these systems resulting in the following:

- A multitude of "home-grown" applications at each location requires duplicate data to be maintained by employees.
- Company-sensitive data is not secured in a centralized location. Also, the complexity of security requirements cannot be implemented strictly through the database. Therefore, security must be implemented through custom business objects.
- Company growth has resulted in a more urgent need for a centralized information management system including support for increased manageability, accessibility, and mobility for users.

### Solution

Tecolote decided to construct an n-tier application framework using Microsoft SQL Server, Microsoft Transaction Server, and Visual Basic. The first module, Contracts Management, was developed using the framework. After designing and creating the database for the module in SQL Server, the development team was ready to create the middle tier business objects. After determining how the 3-tier architecture would be designed, the development team decided that a 3rd party tool could be used to generate the code for the business objects. Doing so would decrease programming time by:

- Eliminating the need to create application server and client side business objects from scratch.
- Allowing the development team to worry about defining business rules rather than how they are implemented.

- Eliminate the need to code a custom data transfer mechanism between client machines and the application server for each business object.
- Automatically implementing simple business rules (non-blank columns and data type constraints) and relationships between business objects.
- Eliminating the need to design a complex 3-tier architecture.

After evaluating tools that could get us started on the right track, the development team decided that Visible Developer, by Visible Systems, was the best tool for the job. Visible Developer allowed the development team to create application server and client side business objects for all database tables. It was simple to incorporate additional business logic into classes and recreate them if data structures were altered. After the business objects were created, the development team created user interface elements for the application. VB forms and classes were created to implement the user interface tier for the application.

## Benefits

The n-tier application architecture and development tools, including Visible Developer, have allowed Tecolote to create a system which will easily allow the incorporation of additional modules. In addition to helping developers concentrate on more difficult issues, end-users of the application have benefited as well:

- *Rapid Application Development* - allows users to see the product early in the development process.
- *Quickly and Easily Change Business Rules* - business rules change in the business object rather than in desktop components.
- *Flexibility of UI* - User interfaces may be swapped out easily depending on user preferences.