

# ***Visual PRO/5: A GUI Migration Case Study***

***by John Lee, AddonSoftware General Manager***

Developers in the Business Basic world have faced some interesting challenges in the last few years. Technology has been advancing at exponential rates. Hardware costs have decreased significantly. This combination has presented our customers with access to software packages offering powerful and sophisticated graphical interfaces. And now, in order to compete successfully in today's market, our products have to offer a graphical user interface with the same level of power and sophistication.

Migrating existing, character-based systems is an excellent way to bridge the gap between past successes and a bright future. This approach can be much more advantageous than completely rewriting an application from scratch. One of the biggest advantages is that it allows you to preserve the investment that you've made in your current product: in time, training, product knowledge, features and, most of all, money. For AddonSoftware the decision was simple. We found the cost of rewriting the software to be far more expensive than migrating the product.

With its integrated suite of applications, AddonSoftware faced the additional challenge of needing to retain a character functionality as well. While a graphical user interface works well for many applications, in our market there continues to be a demand for a character-based solution as well. Heads-down, data-entry tasks and shop-floor workstations are good examples of this.

To accomplish these objectives, AddonSoftware has chosen to implement a two-tier architecture. For us, this offers the best and most economical approach to adding a graphical interface to the product. Essentially, it separates the software into two distinct components: the user interface and the business rules (procedural) code. The user interface has been split off removing all PRINT and INPUT statements, as well as any field prompts from the application source code.

Screen literals are now contained in resource files. The Windows-based representation is stored in the BASIS resource (brc) files used by Visual PRO/5®. Character screens are similarly represented using a simple MKEYED file that contains row/column and literal information. Both files are essentially keyed by a Control ID. The screens are populated using a series of simple subroutines that are passed a Control ID and the value to be displayed. Finally, event management, toolbars and menus are handled by a common standard input routine that is used by all of the application programs.

To be successful using this approach, three things are required.  
You must have:

## ***1. A good foundation from which to work***

So much of what must be done can be accomplished with just the current character-based software, isolating the interface using subroutines, for example.

## ***2. Access to the technology to get the job done***

Visual PRO/5 2.x provides just about everything you need to add true graphical interface, including grids, tabs, menus and toolbars.

### 3. Tools, procedures and a plan to ensure success

This can't be emphasized enough. In developing graphical applications, it isn't uncommon for less than half of the total development time to be spent actually programming. Don't shortcut in this area! The design and the plan are crucial to any successful migration. Implement procedures to help with rapid development. And don't ignore the capabilities offered by current technology. As an example, use PRO5LST to generate text files. Use powerful text manipulation tools like Perl to effect a standard modification of the source code and then use PRO5CPL to convert the text files back to executable form. Efficient use of automation can save hundreds of hours of development time.

BASIS has provided each of us with the tools and a road to the future, without walking away from our existing software, and most importantly, our existing customers. And, from personal experience, I can assure you that it can be a most satisfying and profitable undertaking. If you take a serious look at migrating your current product to the GUI world, I think you'll be excited at what you see.

***John Lee is the General Manager of AddonSoftware and has been involved in software development for over 20 years, using a variety of languages and platforms. After starting with AddonSoftware as a consultant, he joined the staff in 1989 and has filled a number of technical roles for the company over the years. He has been General Manager since 1997 and is currently heading AddonSoftware's own GUI migration effort.***