

# Software Developed by ASA Expert Is Among Top Tools of Gems and Jewelry Practitioners

When **THOM SORENSEN UNDERWOOD, ASA\***, began his gemology appraisal practice in 1978, he found he loved doing valuations but dreaded preparing reports using the IBM Selectric typewriter-Polaroid camera technology of the time.

His desire to enjoy his work, make some money doing it and have enough free time left to take part in the outdoor activities he loved led to the development of Quantum Leap Software Solutions ([www.qlss.com](http://www.qlss.com)), which has become one of the preferred tools used by gems and jewelry appraisers worldwide for processing data and producing reports.

That same year, Underwood paid \$8,000 for his first computer and started exploring ways he could input data and merge it into a form. He was reasonably successful, he said, but found he made better progress when he hired someone to do the programming for him. "I could tell the programmer what I wanted and have him figure out how to do it," the appraiser said. Underwood fine-tuned the software and used it for his own purposes until 1987, when he shared the accomplishment with fellow gemologist appraisers at a conference. "It became clear that there was a business opportunity," he said. He sold the first copy of Quantum Leap that year to an appraiser from New Zealand.

With the software functioning well, Underwood became interested in the graphic-user interface available on Macintosh computers. "What we do as appraisers is database publishing," he said. "We record data, then we publish it." The graphic-user interface is ideal for this type of work, he explained. By the early 1990s, the Windows platform had become powerful enough to handle Underwood's developing program, and he left Macintosh for Windows because of its larger user base. Each Windows upgrade over the years has required extensive rewriting of the Quantum Leap programming code.

Underwood has worked hard to keep Quantum Leap current with evolving technology. The software now uses a SQL Server (<http://www.microsoft.com/sql/default.mspx>) database with a Visual Basic (<http://msdn.microsoft.com/tobasic/>) interface so it can accommodate a full networking environment with users in multiple offices. It can also be used over a virtual private network (VPN) environment.

## Practical Applications

In practical application, Quantum Leap is modeled after the valuation process, Underwood explained. When using it, an appraiser can retrieve



THOM SORENSEN UNDERWOOD, ASA\* is shown in his laboratory.

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client data and set up worksheets. The software breaks down each part of an appraisal into components. Each component provides dropdown lists allowing appraisers to select the details and elements they need for each item being appraised. Users can skip over nonrelevant details or type in specifics unique to their reports. The software allows them to enter measurements and automatically calculate gemstone weights, as well as do onscreen plotting of stones. Digital images can be easily merged into the report. In the valuation window, the appraiser can select the appropriate valuation approach (usually cost or market in jewelry appraisal) and integrate external sources of value from the Internet.

The software then helps the appraiser create his or her report by merging the data into MSWord. Items and their component parts are already laid out and merged in the proper places. The appraiser can customize the report by sizing and moving pictures or altering page breaks, but the report structure, professional logos, margins and fonts are already in place so they don't have to be recreated each time.

### Flexibility Is Paramount

"One of the underpinnings of Quantum Leap is its flexibility," Underwood explained. There are lots of variables in an appraisal report, and the software is designed to be flexible so it meets this need and conforms to the work styles of individual appraisers. Nancy Stacy, ASA\*, praised the software's flexibility, saying she couldn't use a software that didn't allow her to be in final control of the appraisal product. She said Underwood is very receptive to suggestions for improving the software.

Underwood is most concerned that his software be a "transparent

Underwood (left) discusses valuation science with Diane Flora, director of education for the American Gem Society.



tool that supports the community of valuation science" because "we live in a global age." If one were to develop a new component for jade, for example, he or she would need to be able to export and share that component with other Quantum Leap users via e-mail attachment so they, too, could incorporate it and use it. To further that end, he said, Quantum Leap's Web site has a discussion forum in which users can discuss the profession and the software. Underwood described this as "a community of professionals linked together by a virtual tool."

### External Applications

Currently Underwood is expanding what he calls the external applications information interface for the software. For example, he explained, gemologist appraisers sometimes use a tool called Sarin ([www.kassoy.com/tech/cut02.html](http://www.kassoy.com/tech/cut02.html)), a machine that uses a laser to obtain measurements of precious stones. Underwood has developed an interface that allows the Sarin user to automatically integrate the application's measurement information directly into Quantum Leap. Another example is GIA Square ([www.gemewizard.com](http://www.gemewizard.com)). An evolution published by GemeWizard, GIA Square is a colored-stone color grading system developed in Israel. It provides a color palette interpreting hues, tones and saturation in a digital format that is viewable on any computer flat-screen monitor. When Quantum Leap interfaces with this color palette, it is actually communicating with the GemeWizard host computer in Israel that houses the

primary color files, yet presenting and integrating the color information for the appraiser on his or her local computer, Underwood explained.

### Look to the Future

What does technology hold for the future in the appraisal practice? The experienced appraiser and software developer, who holds a degree in chemistry, suggests that in 10 years, offices may be merely meeting places, while the tools and information we access and generate will be virtual, accessible anywhere, any time. By way of example, he points out that Quantum Leap has no office employees yet successfully supports hundreds of users world wide. The three principals live far from each other—the programmer in Montana, a partner in England and Underwood in San Diego, where he runs his appraisal practice, San Diego Gemological Laboratory. They communicate by e-mail, instant messaging and phone calls, meeting only occasionally. Almost every Quantum Leap installation they do for new users is supported by phone.

Technology is necessary for efficient and cost-effective valuation practices, according to Underwood.▲

—Writer Betty Snyder

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