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Russ Agrusa, Chief Executive Officer,
ICONICS

Situation

Founded in 1986, ICONICS is a leading global provider of industrial automation software used to monitor and control operations, with more than 225,000 installations in 60 countries. The company's solutions support mission-critical operations and business processes across a broad variety of industries and are installed in organizations such as London's Heathrow Airport, Merrill Lynch, Ontario Power, the Transneft pipeline, and the Pentagon. ICONICS has offices in Australia, China, the Czech Republic, France, Italy, India, Germany, the Netherlands, and the United Kingdom, and across the United States.

A recipient of many Microsoft awards, ICONICS was named 2008 Gold Certified ISV Partner of the Year in recognition of its GENESIS64 product line. The result of more than four years of effort, GENESIS64 was a total redesign of the company's flagship product line to take advantage of the new features and architecture provided by the Windows Vista operating system—including support for 64-bit computing.

“The 64-bit support in Windows Vista gave us a way to speed the development of industrial automation solutions,” says Russ Agrusa, Chief Executive Officer at ICONICS. “We also looked at what else was new in Windows Vista, coming up with a list of features that we used to deliver a better solution—such as connectivity based on Windows Communication Foundation, key performance indicators displayed as Gadgets for Windows Sidebar, and the use of Windows Presentation Foundation to provide hardware-accelerated 3-D visualizations of how equipment is running within a customer's environment.”

In 2008, with Windows 7 Beta becoming available, ICONICS once again began to look at how a new version of Windows

could enable a better customer experience. “With the initial development of GENESIS64, we had to do a lot of work to align with the new architecture of Windows Vista,” says Agrusa. “With Windows 7, because it's based on the same architecture as Windows Vista, our approach was similar to Microsoft's in developing the Windows 7 operating system—that is, how to build on an existing, stable product architecture to make new things possible and existing tasks faster and easier.”

ICONICS focused on how solutions that customers develop using GENESIS64 are typically deployed and used. “Industrial automation applications commonly run on industrial computers with touchscreens and are used for equipment monitoring and control by operators who may be in a control room or on the shop floor,” says Agrusa. “Within those environments, we need to enable users to visualize and interact with 3-D representations of complex physical systems in natural, realistic ways. For example, an operator may need to visualize a holding tank that has pipes coming out the front and back. If there's an alarm condition on the valve for the pipe in the back, we need to enable the customer to easily spin the tank around on the screen and react to the alarm condition more quickly, with fewer steps.”

Solution

Scheduled for release in late 2009, the next version of GENESIS64 builds on several new features in Windows 7 to deliver a richer user experience. “When we first got our hands on Windows 7, we examined the operating system closely to see what was new and how we could best take advantage of it, quickly zeroing in on features such as multitouch and the Windows Taskbar,” says Agrusa. “Because we were already on Windows Vista, getting the most out of

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Tim Donaldson, Director of Marketing,
ICONICS

Windows 7 was easy—a natural progression of the work we had already done.”

Multitouch Gestures: Making New Things Possible

Perhaps the most useful new Windows 7 feature that ICONICS built on is support for multitouch gestures, which enables users to control what happens on a touchscreen by using their fingers. For example, users can zoom in on part of the screen by moving two fingers apart, or zoom out by moving two fingers closer together. Similarly, users can rotate an image on the screen by moving one finger around another, or can right-click by holding one finger on the target and tapping the screen with a second finger.

“With single-touch, where people could only use one finger, it took several more steps to accomplish a simple task,” says Tim Donaldson, Director of Marketing at ICONICS. “For example, to zoom in on an area on the screen, users had to click on the toolbar, select zoom mode, drag to select a rectangular area, and then turn zoom mode off—essentially mimicking what they would do with a mouse using one finger. With multitouch, users can accomplish the same goals much faster—often with a single, intuitive gesture. For example, if a user needs to rotate the view of a holding tank to see a valve on the back, he or she can just rotate one finger around the other to spin the tank around on the screen.”

Simplifying Everyday Tasks

ICONICS built on several other new Windows 7 features to streamline everyday tasks:

Windows Taskbar. In Windows 7, the Windows Taskbar makes it possible for programs to provide more information in more intuitive ways. For example,

ICONICS developers were able to design their applications so that, if a program detects an error or security issue, a warning indicator is displayed directly on the Taskbar icon as an overlay, enabling the operator to see that an abnormal condition exists even when the application is minimized. Developers also customized the Windows Taskbar icons for GENESIS64 to show progress indicators for long-running tasks, such as saving a large visualization.

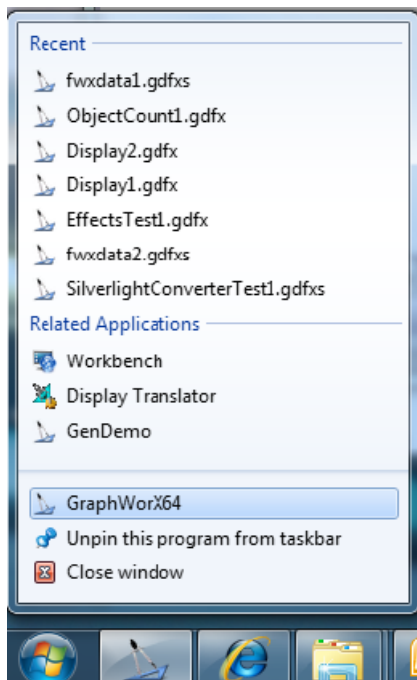
Jump Lists. Windows 7 has Jump Lists for all programs on the Start menu and Windows Taskbar, making it simple to find the documents people have used recently or will need quick access to in the future. Programs also can populate Jump Lists with common tasks that were previously available only from inside the program. ICONICS developers customized the Jump Lists for GENESIS64 to provide quick access to other applications within the product suite, enabling users to easily switch from one GENESIS64 application to a related application or utility.

Libraries. Libraries in Windows 7 provide a single view into files with common characteristics, such as all photos, even when those files are in different folders, on different hard disks, or on different computers. Windows 7 automatically creates Libraries for common file types such as documents, music, pictures, and videos. ICONICS developers modified the GENESIS64 installation routine to create its own library for the product suite, providing users with a single view into the different folders used by GENESIS64 applications (such as those for demo screens and utilities) so that users don't need to manually hunt for the files they need.

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Chris Elsbree, Chief Architect, ICONICS

Figure 1. ICONICS customized the Jump Lists for GENESIS64 to provide quick access to other applications within the product suite.



Users of GENESIS64 also will benefit from faster, easier navigation through built-in operating system features—new methods of interacting with applications that required no development work by ICONICS. For example, through the Snap feature, users can maximize a GENESIS64 window just by dragging its border to the top of the screen, or can view the contents of two windows side by side just by dragging them to opposite sides of the screen, upon which each window will resize to fill that half of the screen—as may be helpful when comparing two floors of a building.

“Windows 7 has many user interface enhancements that will benefit users of our software, with absolutely no development work required on our part,” says Donaldson. “For example, because GENESIS64 already stores thumbnails for files, the new Windows Explorer preview pane will enable users to easily identify the files they need without having to hunt through file names. Similarly, the ability to run Gadgets anywhere on the desktop instead of having them constrained to the Windows Sidebar will make the Gadgets that we’ve developed for Windows Vista that much more useful.”

Development and Logo Certification

ICONICS developed the new version of GENESIS64 using the Microsoft Visual Studio Team System 2008 Team Suite development system, with Visual Studio Team System 2008 Team Foundation Server used for source code control and other aspects of application lifecycle management. The application is based on the Microsoft .NET Framework 3.5 Service Pack 1, which is included in Windows 7. Developers also used the Windows API Code Pack for the .NET Framework, which provides a source code library that can be used to access many of the new Windows 7 features (and some existing features of

older versions of Windows) from managed code.

ICONICS has already obtained a “Compatible with Windows 7” logo for the version of GENESIS64 that it developed for Windows Vista and expects the process to be just as easy for the new version. “Obtaining a ‘Compatible with Windows 7’ logo didn’t require any changes to GENESIS64 itself—only a few minor tweaks to the installation routines,” says Chris Elsbree, Chief Architect at ICONICS. “We fully expect the process to be just as painless for the new version of GENESIS64.”

Benefits

By building on Windows 7, ICONICS is delivering a richer application experience for GENESIS64 users. Furthermore, because the company’s software was already designed for Windows Vista, ICONICS was able to deliver these enhancements to its software both quickly and cost-effectively, with minimal software development. Considering the strong market momentum behind Windows 7, ICONICS expects its new version of GENESIS64 to give the company a strong advantage over competitors—especially those who are simply trying to remain compatible with the new version of the operating system instead of fully taking advantage of Windows 7 to “light up” the customer experience in new ways.

Richer Application Experience

ICONICS is taking advantage of Windows 7 to deliver distinctive, intuitive applications that significantly enhance the user experience. Through support for multitouch gestures, the company is enabling users of touchscreen computers, which are common in the industries that ICONICS serves, to interact with the complex environments that they manage using GENESIS64 in newer, more natural and intuitive ways—

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with fewer steps and less reliance on menu commands. Similarly, streamlined integration with the Windows desktop through Jump Lists, the Windows Taskbar, and Libraries is making it easier for users to “get where they need to go” more quickly, with less guesswork and fewer steps.

“Multitouch support is by far the most compelling new capability we’re providing by building on Windows 7,” says Agrusa. “Combined with multitouch, the previous work we did in the areas of 3-D visualization and vector graphics for Windows Vista gives us a product that’s unique in the market—and ideally suited to meeting the needs of our customers.”

Solid Performance and Reliability

GENESIS64 running on Windows 7 also will benefit ICONICS users through improved performance. “Compared to Windows Vista, Windows 7 boots more quickly, launches applications faster, and feels more responsive,” says Agrusa. “For customers who are already running GENESIS64 on Windows Vista, I expect the decision to move to Windows 7 and take advantage of the latest version of GENESIS64 to be an easy one, and the fact that both operating systems use the same architecture minimizes any potential issues with application compatibility, drivers, and so on.”

Agrusa also sees Windows 7 as providing an easy upgrade path for customers who are still running Windows XP. “The Windows XP Mode that’s built into Windows 7 removes a huge roadblock for customers who want to run our software on Windows 7, but are prevented from doing so because of compatibility issues with other vendors’ applications,” says Agrusa. “With Windows XP Mode, they can upgrade to Windows 7 and the latest version of GENESIS64, yet can still run their existing

applications for Windows XP within that environment.”

Rapid Software Development

ICONICS developers were able to build the company’s new version of GENESIS64 on Windows 7 with little time and effort. “The entire project only took a few developer-months,” says Elsbree. “Integration with the new Windows Taskbar only took a few weeks of effort, and taking advantage of multitouch gestures took about a month. The entire development process was pretty straightforward because we had already done a lot of the technical ‘heavy lifting’ in creating our version for Windows Vista.”

Adds Agrusa, “Staying on top of new Microsoft technology enabled us to immediately take advantage of Windows 7. ICONICS will continue to examine every new product released by Microsoft closely to see how we can build on it to deliver a better customer experience.”

Strong Market Advantage

Agrusa expects the work ICONICS is doing with Windows 7 to give the company an even stronger position in the marketplace. “In early 2008, we released a version of GENESIS64 that took full advantage of Windows Vista while many of our competitors were merely ensuring compatibility, which gave us a big competitive advantage,” says Agrusa. “I fully expect that we’ll see the same thing with our new version for Windows 7, with the work we’ve done in areas such as multitouch and Taskbar integration enabling us to provide a product that continues to provide greater value than our competitors.”

Agrusa also sees the strong market momentum behind Windows 7 as a contributor to ICONICS’ competitive edge. “Within our customer base, we’re seeing a much stronger interest in Windows 7 than we did

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www.microsoft.com

For more information about ICONICS, visit the Web site at:

www.iconics.com

in Windows Vista when it first came out," says Agrusa. "Customers see Windows 7 as a stable, enterprise-ready platform, and we're hearing from their IT departments that they're planning to deploy it. Given the strong early market acceptance of Windows 7, I have absolutely no doubt that the work we've done to fully take advantage of it will help us sell more products."

Windows 7

Works the way you want: Windows 7 will help your organization use information technology to gain a competitive advantage in today's new world of work. Your people will be able to be more productive anywhere. You will be able to support your mobile work force with better access to shared data and collaboration tools. And your IT staff will have better tools and technologies to help enhance corporate IT security, protect data, and efficiently deploy and manage systems.

For more information about Windows 7, go to:

www.microsoft.com/windows/windows-7

Software and Services

Windows 7

Microsoft Visual Studio

- Microsoft Visual Studio Team System 2008 Team Suite
- Microsoft Visual Studio Team System 2008 Team Foundation Server

Technologies

- Microsoft .NET Framework 3.5
- Windows API Code Pack