



## Overview

**Country or Region:** United States

**Industry:** Retail

### Customer Profile

Located in Chandler, Arizona, C.R.I.S. Camera Services is a 35-employee photographic and digital imaging equipment services company.

### Business Situation

The company's Linux-based IT infrastructure and systems prevented it from operating at peak efficiency and were difficult to manage.

### Solution

By switching to a Windows® operating system environment and Microsoft Dynamics™ NAV software, C.R.I.S. improved business efficiency and reduced time spent managing its information technology.

### Benefits

- 20 percent increase in technician productivity
- Expected 40 percent increase in annual revenues
- Projected four-month return on investment
- 75 percent reduction in IT administration effort

## Repair Firm's Move from Linux to Windows Leads to Expected 40 Percent Revenue Gain

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Josh Treadwell, IT Manager, C.R.I.S. Camera Services

C.R.I.S. Camera Services, a leading U.S. photographic and digital imaging equipment service company, had a Linux-based IT infrastructure that was hard to manage and could no longer satisfactorily support the 35-person company's growing business. By switching from Linux to Microsoft® software, C.R.I.S. is improving its business efficiency while at the same time reducing the effort required to manage the technology that supports the business. Microsoft Dynamics™ NAV gives the company a powerful business management solution that has improved technician productivity by 20 percent and will help the company to realize an expected 40 percent increase in annual revenues, providing a four-month return on the company's investment. At the same time, moving to the Windows® operating system has reduced the time and effort required to manage the company's IT infrastructure by 75 percent.

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Josh Treadwell, IT Manager,  
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## Situation

C.R.I.S. Camera Services is one of the premier photographic and digital imaging equipment service companies in the United States. The company was founded in 1984 as the United States distributor for Kyoritsu Electric Company camera test equipment. Although the company still sells some equipment, its business today is based primarily on film-based and digital camera repair.

Since its inception, C.R.I.S. has used several technology platforms upon which to run its business, starting with PC-MOS before moving to Novell NetWare, and later to the Windows NT® Server operating system version 4.0. In 2000, to avoid U.S.\$11,000 in licensing fees associated with an upgrade to Windows® 2000 Server, the company decided to switch to Linux.

Since deploying Linux, C.R.I.S. has grown significantly. In 2002, the company was designated by Ricoh Corporation as the exclusive United States service center for its digital and film cameras. C.R.I.S. also provides extended warranty repair for one of the country's largest photographic equipment retail store chains, repairing a total of 3,000 to 4,000 cameras per month.

By early 2006, C.R.I.S. found that its Linux-based infrastructure could no longer meet its current needs, let alone its plans for continued growth. At the time, its IT systems were based on Red Hat Linux 9, including a file and database server running Samba and MySQL, and a Web and e-mail server running Sendmail, Apache, and software from osCommerce for a small online store.

A significant area of concern was the company's accounting system, which C.R.I.S. had paid to have customized to keep track of each repair order. Based on an older version of Visual AccountMate, the system utilized a

file-based data store that resided on the Linux server and was accessed from Windows-based desktops using Samba.

“Performance was slow, and the system was limited to 16 simultaneous users—we couldn't get any additional licenses without upgrading,” says Mark Treadwell, Owner and President of C.R.I.S. “Most seats were used by accounting and customer support, which forced our 15 technicians to share one PC, often waiting in line to enter data instead of starting on their next repair. They were wasting an hour per day on nonproductive tasks because of the limitations of our old system.”

Along with support for additional users, C.R.I.S. needed better visibility into its internal workflows. In the past, the only way managers knew the status of repairs was to inventory the work that each technician had done at the end of the day. “We've invested heavily in process reengineering over the past few years to improve our operational efficiency,” says Mark Treadwell. “To realize further gains in that area, we needed more granular visibility into the flow of work through the company.”

While those business system limitations were frustrating for Mark Treadwell, who was focused on business efficiency and growth, the company's Linux environment itself was troublesome for Josh Treadwell, IT Manager at C.R.I.S. Along with being the company's only IT person, Josh also assists with sales and marketing. The time he spent simply keeping the Linux systems running securely and reliably frequently took him away from those other tasks.

“With Linux, there are too many variables and dependencies—every little change has a tendency to snowball,” says Josh Treadwell. “Software updates always took at least a full weekend, and it could take as many as five

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C.R.I.S. Camera Services

days to get everything working again. Between those events, I spent an average of two hours per day on system administration—including an hour spent poring over the newsgroups each morning to make sure I didn’t miss anything. Linux may be fine for a simple little server, but things can get complicated very quickly when running multiple applications. It was hard to keep everything secure and running reliably with so many different moving parts.”

### **Solution**

C.R.I.S. replaced Red Hat Linux, Apache, MySQL, and several other open source programs and system management tools with Windows Small Business Server 2003 R2 Premium Edition—the second release of the Windows Small Business Server 2003 operating system—to establish a more reliable and manageable IT infrastructure with enhanced security. Upon that new IT infrastructure, C.R.I.S. deployed Microsoft Dynamics™ NAV to gain support for additional users as well as the workflow management and reporting capabilities that were lacking in its Visual AccountMate system.

“I originally thought we would stay on Linux to avoid licensing fees, but an extensive evaluation of what we needed and which vendor could meet those needs made it clear that a Microsoft® solution offered clear, compelling business advantages,” says Mark Treadwell. “Unlike in the past, when we made the decision to use Linux based on up-front costs alone, the decision to use Microsoft software was made with a long-term perspective, based on total return on investment. I didn’t see any way that we could have stayed on Linux and put in place what the company needs to grow.”

### **Decision Process**

The company’s selection of a new technology solution was driven by business needs, as defined by the capabilities it needed in a new

business management system. C.R.I.S. engaged MRSI, a local consulting firm, to create a requirements document that captured desired processes and workflows, including identifying ways for the company to be more productive.

“Initially, we felt an option that included Microsoft was an automatic negative, due to the potential for higher licensing fees,” says Mike Litecky, Vice President of Operations at C.R.I.S. “However, we soon realized that ease of use and functionality were more important than up-front costs. It ultimately came down to two products, Microsoft Dynamics NAV and NetSuite, and Microsoft Dynamics NAV was the only solution that could meet all of our business needs. During the process, we also realized that the Windows platform offered several benefits from an IT management perspective. I went into the evaluation process thinking that Linux was cheap and easy, but I only had that view because I hadn’t been working with it. In the end, the decision to go with an all-Microsoft solution was an easy one.”

### **Full-Featured, Preintegrated IT Infrastructure**

As part of the transformation, C.R.I.S. replaced the half dozen or so stand-alone Linux programs it was using with Windows Small Business Server 2003 R2 Premium Edition. Designed specifically to meet the needs of small companies, Small Business Server 2003 will provide C.R.I.S. with a preintegrated, comprehensive IT infrastructure to replace the several stand-alone open source programs that the company had been forced to manually assemble and integrate in the past. For example, the core Windows Server® 2003 operating system, which is part of Windows Small Business Server 2003 R2 and includes built-in file and print sharing as well as a built-in Web server, made it possible for the company to replace Red Hat Linux, Apache,

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Mark Treadwell, President,  
C.R.I.S. Camera Services

and Samba with a single solution component. The Active Directory® directory service in Windows Server will present a single point of management for all network resources, as well as single sign-on employee access to those systems—a capability the company had unsuccessfully tried to implement on Linux.

Windows Small Business Server 2003 also offers several other IT infrastructure components that are designed from the ground up to take full advantage of the capabilities provided by the Windows Server operating system, and thus will further reduce the complexity of the company’s IT infrastructure. Microsoft SQL Server™ 2005 Workgroup Edition will replace MySQL as the company’s central data store, giving C.R.I.S. better insight into its business through built-in reporting capabilities. Similarly, Microsoft Exchange Server 2003 and the Microsoft Office Outlook® 2003 messaging and collaboration client are both included to offer integrated mail and messaging services, including shared calendaring. Windows Server Update Services, another feature of Windows Small Business Server R2, will automate the deployment of software updates to all Windows-based systems on the company’s network.

“The great thing about Windows Small Business Server is that I get virtually everything we need in one preintegrated package,” says Josh Treadwell. “And with Windows Server Update Services as part of the solution, I can ensure that everything stays up-to-date with virtually no effort at all.”

#### **Comprehensive Business Management Capabilities**

Microsoft Dynamics NAV, which C.R.I.S. deployed on its new Windows Small Business Server-based IT infrastructure, provides the business management capabilities the company needs to better run and grow its business, including the ability to better track

and manage repair orders as they flow through the company—from initial receipt of each device to the documentation required to get paid for each repair. Clifton Gunderson, a certified Microsoft Dynamics NAV reseller, assisted with the customization and implementation of the solution.

“Clifton Gunderson has been a great partner to us,” says Mark Treadwell. “During the evaluation process, they initially faced an uphill battle in getting us to consider a Microsoft solution. However, they persisted, kept our best interests at heart, and, by the end of the day, had us completely sold on both the benefits of Microsoft Dynamics NAV and their value as an implementation partner. I couldn’t be more pleased with their performance.”

Key capabilities provided by Microsoft Dynamics NAV include:

- **Real-time visibility into business processes.** In the past, what work had been done was only clear at the end of the day, after each technician’s progress was manually assessed. As part of its Microsoft Dynamics NAV deployment, C.R.I.S. put a PC on each technician’s desk, enabling the company to track each technician’s progress and monitor his or her efficiency in real time.
- **Familiar interface.** The user interface for Microsoft Dynamics NAV is similar to that of Microsoft Office Outlook 2003, which eased the learning curve for employees and ensures that interacting with the system does not detract from employee productivity.
- **Extensive customizability.** Clifton Gunderson took advantage of the flexibility provided by Microsoft Dynamics NAV to customize the solution to meet all of the company’s business requirements,

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including support for its unique repair-centric workflows and processes.

- **Built-in employee portal.** Through integration with Windows SharePoint® Services, Microsoft Dynamics NAV includes a built-in intranet portal that all employees can use to collaborate, as well as to access the information in the company's new business management system.
- **Flexible integration.** Microsoft Dynamics NAV includes extensive integration capabilities, which C.R.I.S. will use to integrate its new business management solution with a customer-facing portal that is now in development. The portal will provide customers with extensive self-service capabilities, including the ability to submit a new repair order or check on the status of an existing one in real time.
- **Strong security.** Through integration with Active Directory, Microsoft Dynamics NAV makes it easy for C.R.I.S. management to control employee access and permissions.

With the exception of document scanning, which is provided by a third-party add-on, Microsoft Dynamics NAV met all functional requirements out-of-the-box. “The ability to integrate document scanning into the solution was a key reason we chose Microsoft Dynamics NAV over NetSuite, a hosted solution,” says Litecky. “As a warranty service provider, we have to document everything we do in order to get paid. In the past, there was paper piling up all over the place—easily 10,000 to 20,000 pages per month. Moving forward, we can scan all that documentation and have it at our fingertips when it's needed.”

### Benefits

By switching from Linux to Microsoft software, C.R.I.S. has increased its operational productivity and its ability to win new

business. In addition, the company's move to a Windows-based IT infrastructure has improved the security, reliability, and manageability of the network and systems.

“Most small companies look primarily at immediate costs, as we did when adopting Linux a few years ago,” says Mark Treadwell. “Today, to remain competitive and grow, we're now doing what larger companies do and investing significant net profit back into the business. We're examining and reengineering processes to increase efficiency, and are expanding into new business areas that leverage our existing strengths and assets. I expect the investment we've made in Microsoft software to pay for itself within four months.”

### 20 Percent Increase in Technician Productivity

In the past, technicians spent more than an hour each day on paperwork, documenting their work in sufficient detail for C.R.I.S. to get paid for its services by its largest customers. Moving forward, with a PC running Microsoft Dynamics NAV on every technician's desk, every detail and change in status will be captured in real time as part of the normal workflow, providing greater visibility into each technician's productivity while, at the same time, significantly increasing that productivity.

“With the productivity benefits provided by our new solution, I expect to see a 20 percent increase in the output of each technician,” says Litecky. “Not only does the system let us get more work done, but it provides great visibility into each individual technician's performance. If it takes one person 30 percent longer than everyone else to make a given repair, we can easily identify the issue and address it with training.”

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Josh Treadwell, IT Manager,  
C.R.I.S. Camera Services

#### **Expected 40 Percent Increase in Annual Revenues**

As part of its growth strategy, C.R.I.S. is looking to expand beyond the repair of digital cameras to service other types of consumer electronic products, such as personal audio players and portable game devices. The flexibility provided by Microsoft Dynamics NAV will help the company to easily support the new workflows needed to service those devices without extensive customization.

“The skills and tools needed to repair a digital camera are the same needed to repair many other types of consumer electronic devices,” says B.J. Adams, Sales and Marketing Manager at C.R.I.S. “With Microsoft Dynamics NAV, we now have a system that can easily support our expansion into those new areas. The ease with which we’ll be able to integrate Microsoft Dynamics NAV with our new Web presence will also help drive new business, in that we’ll be able to meet customer demand for things like online estimates and status reports. For the past few years, we’ve grown revenues at roughly 25 percent per year. This year, with the new capabilities provided by Microsoft Dynamics NAV, I expect a minimum 40 percent revenue increase.”

#### **75 Percent Reduction in IT Administration Effort**

For Josh Treadwell, the company’s move from Linux to Microsoft software has made his job of maintaining the company’s IT systems—and keeping them secure and running smoothly—much easier. “With so many components going into Linux, it’s really hard to keep everything uniform and updated, and to know if you’re current on security patches,” he says. “As you find and apply updates to different components, you get small cracks in the system that necessitate severe debugging or reconfiguration every couple weeks. With Windows, I no longer have those kinds of problems—it just all works.”

Josh Treadwell now spends significantly less time keeping things up and running. “The time spent managing our network and servers has gone down by 75 percent,” he says. “I no longer need to read the newsgroups every morning to keep up on changes to all the software we use. Instead, I get a set of software updates from Microsoft once a month and I can deploy them in a few hours. Everything is tested together by Microsoft; I don’t need to worry about an update to one software component breaking something else.”

The company’s move to a Windows environment has also helped enhance security. Using Active Directory directory service, Josh Treadwell can manage all employee permissions in one place, providing each employee with a single user name and password to access all appropriate network assets. “I tried to implement single sign-on with Linux, but it broke when I applied a software update,” he says. “With the Windows platform, security management is centralized. I can easily keep current on security updates, and I can lock down all our Windows XP-based PCs to prevent people from doing things that can damage their systems. As a result, I spend far less time troubleshooting desktop issues. Coming from a Linux environment, where I had to manually hold everything together, managing our new Windows environment is like a dream come true.”

## For More Information

For more information about Microsoft products and services, call the Microsoft Sales Information Center at (800) 426-9400. In Canada, call the Microsoft Canada Information Centre at (877) 568-2495. Customers who are deaf or hard-of-hearing can reach Microsoft text telephone (TTY/TDD) services at (800) 892-5234 in the United States or (905) 568-9641 in Canada. Outside the 50 United States and Canada, please contact your local Microsoft subsidiary. To access information using the World Wide Web, go to: [www.microsoft.com](http://www.microsoft.com)

For more information about Clifton Gunderson, visit the Web site at: [www.cliftoncpa.com](http://www.cliftoncpa.com)

For more information about C.R.I.S. Camera Services, visit the Web site at: [www.criscam.com](http://www.criscam.com)

## Microsoft Server Product Portfolio

For more information about the Microsoft server product portfolio, go to: [www.microsoft.com/servers/default.aspx](http://www.microsoft.com/servers/default.aspx)

### Software and Services

- Microsoft Server Product Portfolio
  - Windows Small Business Server R2 Premium Edition
- Microsoft Dynamics
  - Microsoft Dynamics NAV 4.0, Advanced Management Edition
- Windows XP Professional

### Hardware

- HP ProLiant ML350 two-processor server computer

### Partner

- Clifton Gunderson