



Inside an IT Audit

Meridith Levinson 09 November, 2004 11:25:51

When CIO Sheila Beauchesne started her new job, she wanted to set goals and win the confidence of her executive colleagues. To do that, she needed to know how her IT costs stacked up against other organizations'. So she called in the IT auditors.

Reader ROI

- 📡 The importance of conducting IT audits
- 📡 How to conduct an IT audit
- 📡 What information to gather
- 📡 What information can be difficult to obtain

In December 2003, Sheila Beauchesne left her CIO job at troubled Martha Stewart Living Omnimedia in New York City to become senior vice president and CIO at Bluegreen Corporation, a Florida real estate developer and vacation resort operator. Bluegreen is a growing company that set records for revenue and profits in 2003. (2003 revenue was \$US438.5 million, 29 percent higher than 2002; net income was \$US25.8 million, 138 percent more than 2002.) With that growth in mind, Beauchesne's new boss, CEO George Donovan, asked her to turn Bluegreen's 60-person IT department into a utility that would provide the company with a robust, fail-safe IT infrastructure. Donovan also wanted Beauchesne to provide applications that would enhance Bluegreen's sales and marketing activities.

Beauchesne, 39, wanted to start strong. But before she could begin thinking about turning Bluegreen IT into a power plant for growth, she needed a clear idea of what the company was spending on technology. She also wanted to know how Bluegreen's IT spending compared to organizations of similar size. The problem was that Bluegreen's IT accounting wasn't detailed enough. She had only a vague idea what IT was really costing her company.

What Beauchesne needed was an IT audit.

"If You Don't Measure It, You Can't Manage It"

Audits are part of a CIO's job as steward of an organization's IT budget, says Susan Dallas, a research director with Gartner. "CIOs are the custodians of probably the biggest part of a corporation's spending right now. If they don't know where all that money is going, they can't manage it and won't have control over it," she says.

IT audits are also a best practice.

CIO (US) approached Beauchesne with the idea of arranging an IT audit for Bluegreen that CIO could report on. Beauchesne agreed, as did Global Information Partners (GIP), a 10-person IT consulting company founded in 2001 and based near Atlanta. GIP performed the Bluegreen audit during February and March, and delivered a final presentation on April 1. The audit took seven weeks and consumed 80 hours of Bluegreen staff time - spent gathering data on staffing, hardware and software costs, and the number of supported users - plus countless more hours for follow-up questions on subjects like help desk operations and the number of full-time equivalent employees (FTEs) devoted to various functions within IT. GIP estimates an audit of this scope would cost a company of Bluegreen's size about \$US85,000.

Today, the audit findings are helping Beauchesne decide where to focus her energy. She also now possesses something invaluable to all CIOs: concrete information on where her costs and service levels don't measure up to other companies of similar size. This is data she can use to build better business cases for her projects and to justify additional IT expenditures to her CEO and to CFO John Chiste.

"If I can show my CEO where we're below the benchmark, that's good info for me to have when I want to justify where we may need to change spending patterns," Beauchesne says.

Audit Begins Well

On February 12, 2004, in a cramped, windowless office at Bluegreen headquarters, the three GIP auditors gather at 9am to prep for their first meeting with Beauchesne and Krista Parker, Bluegreen's IT financial auditor whom Beauchesne has made the audit's point-person. The purpose of the meeting is for the auditors to describe their auditing and benchmarking methodologies, learn more about how Bluegreen and its IT department operate, and to discuss what Beauchesne wants to get out of the process.

The auditors - GIP founder Ted Williams, along with Gail Small and David Burkett (a fourth GIP auditor was not present for the meeting) - are impressed by the two-inch (50mm)-thick, three-ring binders that Beauchesne's executive assistant has delivered to them in preparation for the kick-off meeting. They contain six worksheets with a total of 96 questions that Small e-mailed to Beauchesne eight days earlier, as well as an organizational chart, descriptions of 17 different positions in Bluegreen's IT department, a list of business applications in use, descriptions of IT projects in progress - and information on staffing for the help desk, network support, server maintenance, application development and more. There are also numbers for desktop hardware and software, annual server failures, supported end users, desktops and laptops replaced each year, help desk call volumes and storage capacity. "We never get this level of organization," says Burkett.

Burkett estimates that 85 percent to 90 percent of the data-gathering component of the audit is complete and thinks the audit will be relatively easy. "Sometimes audits can be so complicated, the first thing I have to do is figure out an approach. I don't think we'll have that here," he says.

He'll soon find out that's not quite the case.

At 10:30am, Beauchesne enters the room - having been delayed by a board meeting - accompanied by Parker.

Williams explains that GIP will benchmark Bluegreen against companies of similar size, with similar business objectives, that are above average or "top quartile" performers. GIP gets its comparison data by conducting informal surveys and by purchasing it from other benchmarking and IT research firms. GIP's database also includes information the company gathered in the course of previous audits.

Burkett then explains that he'll interview members of Beauchesne's staff and that he'll study purchase orders, invoices and reports from the company's accounting system. He also asks Beauchesne some questions, such as whether IT charges its costs back to the business, how businesspeople view IT, and if her company has trouble attracting and retaining skilled IT workers.

Beauchesne tells him IT doesn't charge its costs back to the business, that there's no centralized accounting for IT spending, and that a chunk of the company's total IT costs are buried within Bluegreen business units. She says Bluegreen doesn't have trouble attracting or retaining workers, and that business and IT have a pretty good working relationship. Her answers will help inform GIP's analysis of and recommendations for Bluegreen's IT department.

Beauchesne mentions a few observations she's made in the six weeks since she joined the company. She thinks there's room for improvement in her four-person help desk. She wants to know how many calls that should be going to the help desk end up going to IT staff with whom Bluegreen business employees are friendly. She thinks Bluegreen's IT costs will turn out to be high due to the variety of desktop operating systems her department supports (Windows 95, 98, 2000 and XP). She suspects that Bluegreen doesn't spend enough money on new application development.

Overall, the auditors are looking to get a general picture of not only the numbers that make Bluegreen tick, but top management's attitude toward IT and the dollars attached to it.

Williams notes that his firm is often hired by new CIOs who, like Beauchesne, want a baseline of their IT costs, and sometimes by CIOs who've been with a company for a while and need to fix an acute problem.

"It's not that we have things that are broken," Beauchesne says. "We know we have to do things better." She explains the company is growing and that IT has to grow with the business. "I want to make sure IT is facilitating everything the business wants to do. I never want to have systems be the reason that something has to be slowed down."

Inevitably, Questions Surface

Once the introductory meeting concludes, auditors Small and Burkett stay in the room and begin analyzing the data Bluegreen has provided. They are searching for anomalies. Burkett keys numbers from the binder into a spreadsheet on his laptop and does "rough calculations" to validate Bluegreen's data and to make sure he understands it. Small jots notes into a spiral bound notebook. It doesn't take long before Burkett and Small begin to find discrepancies. Among them:

- Burkett thinks the figure Bluegreen provided for its desktop hardware budget is too small to be correct. Based on more than 30 years of experience in IT, he suspects that either the number doesn't include some PCs, or the company is running some very old PCs. Whichever, Bluegreen isn't spending enough. Burkett resolves to check the figure with Parker.
- Burkett thinks the figure Bluegreen provided for the total number of FTEs who develop new applications and maintain existing ones (30) should be higher than the number of FTEs who just maintain existing apps (49). In discussing the discrepancy with Parker, he realizes that the numbers she provided don't represent full-time equivalents - that is, the amount of employee time devoted to a particular function - but the number of employees who do that function on any given day. Burkett says smaller companies like Bluegreen generally don't measure staffing levels in terms of full-time equivalents. So, questions posed in that manner produce answers that are frequently a source of confusion. Parker tells Burkett that she'll have to ask the questions again to get a more accurate count of FTEs. Burkett was right to note this discrepancy. Final audit results show that 19.5 FTEs work on developing new applications and 13.1 FTEs work on maintaining existing ones.
- Small suspects that Bluegreen's estimate of potential help desk users (10) is incorrect. Knowing the total number of help desk users vis-a-vis the number of people who staff the help desk will help Small understand the burden the help desk is under, and why its service is less than stellar. Since the help desk was one of the areas Beauchesne singled out, GIP wants to make sure its assessment is sound.
- Small is also sceptical of the time Bluegreen has provided for the average length of calls to the help desk: two minutes. She notes that two minutes isn't even enough time for a user to describe a problem or reboot. Williams speculates that if it is, indeed, two minutes, people are probably calling for password resets.

To clarify the two-minute issue, Small visits Gary Kaul, Bluegreen's manager of IT support, in his office.

Kaul tells her he has three FTEs; on average, he says, it takes a level-one help desk employee two minutes to open a trouble ticket and transfer the user to level-two support.

Small asks Kaul whether Bluegreen's help desk just answers calls or if it has other duties during downtime periods; how it handles requests to move employees, and provides phone and computer services for new employees (the help desk opens a ticket and sends it to a technician in the telecom group); if trouble tickets opened by a help desk employee stay with that person (no), or if they're assigned to someone else to resolve (yes); if the system Bluegreen uses to track calls also analyzes the reasons why calls come in (no); and if the help desk has established internal service levels (not yet).

Small is sensitive to the fact that some of the information Kaul provides is unflattering to his operation. During the course of their exchange, Small mentions several times that she does not mean to pass judgment and reassures him that his operation is like many others. The 30 minutes Small spends with Kaul gives her a clearer picture of the way Bluegreen's help desk operates and helps her shape her recommendations for improvement.

Clarification questions - such as the ones posed by Small and Burkett as they reviewed the binders - are routine and relatively easy to address. But one question that proves much less straightforward and more problematic is how Parker and the auditors will pinpoint the actual amount Bluegreen spends across the enterprise on desktop software, server software and specific pieces of hardware - such as desktop PCs, thin clients, laptops, servers and printers. The reason that question is so difficult to answer is because, says Burkett, "all acquisition costs are blended together whether they're for hardware, software or servers". In other words, Bluegreen doesn't track its IT expenditures in any detail. As a result, the auditors can't simply run a report off the accounting system to find out what the company spent on servers last year.

This lack of visibility into what Bluegreen actually spends on IT hardware and software threatens to undermine the audit. Burkett will have to do exactly what he didn't think he'd have to do: devise a way to calculate Bluegreen's enterprise-wide IT costs.

Two Ways to Calculate Costs

Using a whiteboard in the Bluegreen conference room, Burkett sketches two approaches.

The first uses a reference group composed of two public-sector organizations, one insurance company and two utilities. The concept is to use data from this reference group to fill in the blanks in Bluegreen's numbers. Where he doesn't have the information from Bluegreen, Burkett plugs in the reference group's averages for hardware and software costs. Burkett believes this approach will work reasonably well because he's not looking to determine costs that vary by company, such as employee salaries. Everybody buys their desktops, monitors, servers, laptops and other hardware from the same cadre of vendors - and it all costs pretty much the same.

The second approach is to use a Bluegreen call centre in Indianapolis as a proxy for the rest of the company. Parker has lots of numbers on Bluegreen's IT spending in that call centre. Burkett can then apply the call centre prices to the rest of the company to determine Bluegreen's total hardware and software spending.

"We're basically using the same vendors companywide so the same costs would have been incurred regardless," says Parker.

Burkett plans to pursue both approaches and discuss the results with Beauchesne.

Counting Staff or Counting Functions?

During the next four weeks, Burkett and Parker communicate about three times a week via phone and e-mail, following up on questions and chasing additional data. On February 24, Parker e-mails Burkett Bluegreen's data connectivity costs with MCI, reports indicating the amount Bluegreen spent on service contracts and on leasing equipment, and two Excel spreadsheets that Bluegreen used to track IT costs at the Indianapolis call centre. Meanwhile, the auditors are also looking at the help desk and IT staffing levels in general. Small sends Kaul some follow-up questions by e-mail, which he answers promptly. But questions concerning the number of FTEs who perform various IT functions - How many level-one help desk support workers are there? How many workers develop new applications, maintain existing ones, or

install and maintain network hardware? - prove difficult for IT managers to answer. They are accustomed to counting staff jobs in total, not by functions.

On March 8, three weeks after the first meeting, Burkett e-mails Parker to ask her to circulate a spreadsheet among the IT managers that he hopes will help them determine the number of FTEs devoted to different IT functions. Four days later, Parker sends the spreadsheet back and Burkett finally has his FTE figures. He now has the information he needs to tell Beauchesne whether she has enough people devoted to developing new applications and how her staffing levels measure up to the benchmark groups.

Still, certain numbers remain in question. For example, Burkett has two different figures from two sources for the total number of PCs in the organization. He's not 100 percent clear on how much the company spends on level-two desktop support. And in spite of Small's earlier efforts, questions remain about the help desk. Burkett plans a return trip to Bluegreen for March 16 and 17 to answer the remaining questions by interviewing eight of Beauchesne's IT managers and to present his preliminary findings to Beauchesne.

Ammunition for a New Help Desk

In a 40-slide PowerPoint presentation on March 17, Burkett presents his preliminary results to Beauchesne and Parker. Williams and Small call in for the meeting.

Beauchesne is pleasantly surprised by how low her monthly desktop, laptop and thin client hardware costs are. But she doesn't agree with the way Burkett has calculated annual hardware and software costs for client devices across the company. He used a blended rate, which means he used the average cost of all those devices. Beauchesne thinks he'll get a more accurate picture if he multiplies the number of desktops in the company by a desktop rate, the number of servers by a server rate, the number of laptops by a laptop rate - rather than multiplying the total number of client devices by a client device blended rate. Burkett agrees to recalculate.

Beauchesne notices a similar problem with the personnel cost calculations. Burkett used averages across three categories: management, administrative and professional. Beauchesne asks him to factor IT employees' and contractors' individual salaries and rates into his equation for personnel cost. Burkett has reservations about handling such private data, so Parker volunteers to calculate average salaries in more general categories - such as help desk, server support, client devices support, application maintenance and application development.

Beauchesne is also concerned about Burkett's method for calculating server costs. He used the prices Bluegreen paid for computing equipment at the Indianapolis call centre as a model for what the company pays elsewhere. But according to Beauchesne, Bluegreen doesn't pay a standard amount for all servers. The cost varies by the function and size of the server, and whether it's SQL, AS/400 or Windows NT. And since the servers Bluegreen has in Indianapolis are different from the servers at its resorts and at headquarters, the figures GIP obtained on server costs can't be accurate.

When Burkett presents Beauchesne with Bluegreen's total IT spending (not counting local and long-distance phone charges), the CIO becomes confused. She doesn't know exactly which IT costs are included in the number Burkett came up with and what could be missing. She asks

Burkett if the number leaves out "all the maintenance fees that we pay on the software we have".

That's correct, says Burkett.

As for help desk costs, Beauchesne is delighted to see that even if she purchases a new help desk call-tracking and reporting system (which she's been considering), her help desk costs will remain below those of the reference group. (GIP figured cost of personnel per call and total cost per call. Bluegreen's total cost per call is more than 30 percent lower than the reference group of benchmark organizations.) This is information that she'll use when it comes time to request money to purchase a new help desk system.

Burkett concludes the meeting by offering some preliminary recommendations: Establish additional cost centres in IT for desktops, servers and the help desk to get more granular data on IT spending; track which users call the help desk most frequently to identify a cure for their calls, namely, more training or new equipment; and keep purchasing thin clients instead of PCs (provided end users are happy with them) because they're much less expensive than PCs to support. He also goes over the additional data he needs to get before GIP can present its final report.

More Calculations and Benchmarks

Over the next two weeks, Burkett spends his time clarifying information pertaining to the help desk and the network. He speaks with Meg Johnson, Bluegreen's senior systems administrator, to get an idea of Bluegreen's AS/400 systems availability - which Beauchesne wanted him to factor into his report.

Assessing the help desk's effectiveness is more involved. To find out the number of help desk calls that are abandoned versus the ones that go to voice mail (information Bluegreen's phone system does not provide), Burkett asks Kaul if the help desk workers could count the typical number of voice mails they receive in an average day. The help desk employees counted, and Burkett was able to derive the number of abandoned calls.

Beauchesne also wants a better idea of how long it takes help desk workers to wrap up trouble tickets. So, again, Burkett asks Kaul if the help desk workers could track the amount of time it takes them to wrap up calls, and they provide Burkett with an estimate of five minutes.

He also nails down his calculations of the components of Bluegreen's IT costs and finalizes his comparisons with the reference group. To calculate the cost per help desk call, for example, he adds up the software, hardware, labour and training costs associated with the help desk, and divides that amount by the total call volume. To obtain Bluegreen's hardware and software costs for client devices, Burkett takes the prices Bluegreen paid for various types of software and desktops, laptops, and thin clients located in its call centre in Indianapolis and multiplies those prices by the total number of, say, Gateway PCs and Dell laptops located throughout the company. Then he adds the costs of all those different pieces of hardware and software together to come up with the total amount Bluegreen spends on client devices.

In choosing comparisons for the benchmarking process, GIP auditors look for companies (and government agencies) with similar characteristics that provide high-quality IT services at a low cost. In some cases, GIP benchmarks a client against 15 or 20 organizations, but in most cases, fewer can still provide a quality sample for benchmarking. In Bluegreen's case, GIP found five organizations that were similar in annual revenue, number of employees, geographic complexity and IT centralization.

Burkett says the benchmarking process is fairly basic. Using Excel spreadsheets and a Microsoft Access database, he calls up information on the reference group's unit costs and FTE productivity and compares it with Bluegreen's cost and productivity data. He looks for discrepancies. For example, upon seeing that Bluegreen supports twice as many servers per FTE than the reference group, and that server uptime is comparatively low, he suggests that Bluegreen needs to dedicate more people to determine why the downtime is so high, and to invest in performance-monitoring tools.

Burkett sends Beauchesne an advance copy of the final presentation he plans for April 1. A couple of days before then, he walks her through the presentation in a conference call. On a graph that illustrates what portion of IT employees' time is dedicated to the help desk, Burkett uses the term "spare capacity" to denote the time they don't spend working on the help desk. Beauchesne is concerned that her managers might find the wording insensitive. Their time really isn't spare; it's dedicated to other functions. Burkett takes out the phrase.

The Final Analysis: Bluegreen Is Getting What It's Paying For

On April 1, the group assembles in Bluegreen's sleekly decorated boardroom. Beauchesne, Parker and six of Beauchesne's direct reports file in. Her director of application development and senior manager of field operations call in.

GIP's Williams opens by paraphrasing Peter Drucker: "If you don't measure it, you can't manage it." He prefaces the slides Burkett is about to show by saying: "We're going to give you information you probably already know, validate some of your initiatives and provide you with new ideas." He allows that there may be inconsistencies, and encourages the group to discuss them as they go through the presentation.

Burkett takes over and explains how he used Bluegreen's Indianapolis call centre as a model to determine total IT expenditures. Beauchesne interrupts to clarify. "We didn't act like every location was like Indy," she says. "We took the unit costs we paid for various pieces of hardware [and software] and applied that to what we have everywhere else."

"Overall," Burkett continues, "your costs are low compared to the reference group, but you're delivering somewhat lower-quality service. They're spending more; they have more people; they're able to deliver higher levels of service."

Burkett singles out two slides: One graph shows that Bluegreen IT employees support twice as many systems as the reference group; the other indicates that it costs Bluegreen half as much as the reference group to support client devices. He warns that although these slides may look positive, they could also indicate that Bluegreen IT is not doing some things it should - such as virus protection and asset management - and that could haunt them.

The best news for Beauchesne is that GIP characterizes Bluegreen's telecom rates as "very competitive". Bluegreen spends about \$US54,000 less annually than the reference group.

As Burkett goes through the slides and figures, he notes exceptions and caveats - such as where local and long-distance telephone costs haven't been included, and where business software hasn't been factored into enterprise-wide IT costs. Burkett stops regularly to ask the IT staff for feedback and questions. Most of the time, mum's the word. But when Burkett broaches server uptime and quality of service, one of Beauchesne's remote workers pipes up that she thinks the numbers GIP has provided for server uptime makes Bluegreen look better than it really is. Beauchesne agrees, saying that 97 percent uptime isn't good, especially when compared with the reference group's 99.8 percent uptime.

The help desk, as Beauchesne suspected, also shows great room for improvement. Bluegreen's call abandonment rates are astonishingly high, topping out at 48.3 percent compared to the reference group's 4.6 percent. And it takes the help desk over a minute and a half to answer calls, almost double what it takes the reference group.

The Recommendations: Specialize, Centralize, Chargeback, Monitor

Because Bluegreen help desk workers are also tasked with setting up new equipment and loading software onto machines, the auditors recommend staffing up the help desk and to have those employees focus solely on answering help desk calls. The auditors also recommend that Bluegreen develop a help desk customer satisfaction survey.

Because total IT costs across the enterprise were so difficult to determine, GIP advises Bluegreen to centralize all IT spending and to consider developing a catalogue of IT services, with standard prices and service-level objectives, for which IT could then charge the business.

The auditors also suggest that the IT department discuss requirements for server availability with the business. IT should identify root causes of server failure and install performance-monitoring software.

After about 75 minutes, Burkett wraps up. "Questions? Comments? Was it useful?" he asks.

"I love you guys!" shouts one of Beauchesne's managers. He tells Burkett that the findings squared with everything he had ever thought about Bluegreen's IT operations. Another manager notes that Beauchesne can use the findings to justify additional IT spending.

"That's absolutely right," says Beauchesne. "I'm going to put together a summary of these findings and give it to my senior execs, and I'm going to tell them: 'This is what we need to do and, by the way, these things cost money. We've got to invest in these things, and now is the time to do it if we want to grow.'"

"Now," she says, "we have our baseline."

Epilogue: The Audit Does Its Job

Armed with the auditors' findings and recommendations, Beauchesne facilitates her first quarterly executive IT briefing on April 20. There she speaks with Bluegreen CEO Donovan, CFO Chiste and John Maloney, president of the company's resorts operation, who represents IT's primary business customers.

Beauchesne begins her PowerPoint presentation by emphasizing that the numbers come from an objective third party. And she includes all of GIP's recommendations. "I didn't want them to think that I had weeded out the recommendations I didn't like," she says.

GIP's findings lead to a discussion of the state of Bluegreen's IT and what projects it should undertake and what staff it needs to hire. Using the auditors' slides, she shows how, compared with the reference group, Bluegreen has fewer employees supporting Windows servers and the help desk; and how, as a result, server uptime and end-user support suffer.

She explains how the company's accounting system doesn't provide her with the visibility into IT costs that she needs in order to manage them, and how an asset management system would allow her to obtain a more accurate total cost of ownership model for IT and would improve service on the help desk.

Donovan wants to know how many servers, desktop computers, laptops, thin clients and field locations her IT group supports. Because she has just been through this drill with GIP, Beauchesne knows the answers cold. And by providing her CEO with the numbers (72 servers, and 1646 desktops, laptops and thin clients in 97 field locations), she's able to give him a better idea of how Bluegreen's growth has affected IT and of the challenge to meet future demand for IT services.

Donovan also wants to know what happens to end users who never get through to the help desk and why Bluegreen's help desk cost per device is higher than the reference group's. Beauchesne explains that in some cases end users who can't reach the help desk try to deal with their problem on their own, and in other cases, they call someone they know in IT. She says the help desk cost per device is high because the company supports a lot of old equipment and a variety of operating systems.

By the time the 90-minute meeting is over, the CEO and CFO approve Beauchesne's request to hire two field tech support employees, two help desk technicians and one network engineer. They also authorize the purchase of a new help desk and asset management system, which had not been in Beauchesne's 2004 budget.

She also gets the CFO to understand that she needs better reporting capabilities from the company's accounting systems. They agree that Parker will work with someone from accounting to come up with the best way to provide IT with the information it needs to track IT costs.

Beauchesne says the audit enhanced the confidence she felt going into the meeting. "I felt I had a story that made sense, that I had all the information I needed." And because she accomplished so much in that meeting, she's on her way to transforming Bluegreen IT.

Audit Findings and Recommendations

Problems the auditors identified, and their recommendations for how Bluegreen should address them.

Finding: Accounting system does not provide Bluegreen with enough visibility into IT costs to adequately manage them.

Recommendations: 1. Centralize all IT spending inside the IT department. 2. Generate reporting on depreciation costs associated with capital equipment.

Finding: Help desk is understaffed and needs to improve its service level.

Recommendations: 1. Devote additional resources to the help desk. 2. Monitor the reasons why end users call the help desk to determine if there's some root cause that needs to be addressed - such as the need for computer training among end users - that might reduce the number of calls. 3. Install a new call reporting and tracking system.

Finding: New application development efforts cost as much as existing application support.

Recommendation: Application developers need to interface more with business users, use more rigorous methodologies for developing code, and establish procedures for ensuring that new business applications meet or exceed the ROI established in the business cases.

Finding: Server uptime is below average.

Recommendations: 1. Discuss with business users their requirements for server availability. 2. Dedicate additional resources to identifying the causes of downtime and take measures to prevent it. 3. Implement software that will report on server performance.

Additional findings: 1. Costs to support client devices almost 50 percent lower than other organizations. 2. Thin clients are an efficient way to outfit end users, as long as they provide them with the functionality they need.

Additional recommendation: For both findings, auditors recommend developing an asset management system.

What Bluegreen Wanted, but Didn't Get from Its Audit

Bluegreen didn't get everything it wanted from this IT audit. The process uncovered a need to track more details about how workers spend their time and dollars spent on software.

>>The total number of hours business users put into testing and developing new applications and how much that costs.

Bluegreen did not track enough specific information about discrete hours spent on specific tasks by different staff members and so it wasn't possible to derive this information.

>>The cost of managing Bluegreen's data centres.

Bluegreen did not have enough detailed records about costs for software licences and hardware purchases at all of its data centres to make this evaluation.



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