

From the authors of *The Visible Ops Handbook*



The Phoenix Project

A Novel About IT, DevOps,
and Helping Your Business Win

Gene Kim, Kevin Behr, and George Spafford

Parts Unlimited: Business Executive

Steve Masters, CEO, acting CIO

Dick Landry, CFO

Sarah Moulton, SVP of Retail Operations

Maggie Lee, Senior Director of Retail Program Management

Bill Palmer, VP of IT Operations, former Director of Midrange Technology Operations

Wes Davis, Director of Distributed Technology Operations

Brent Geller, Lead Engineer

Patty McKee, Director of IT Service Support

John Pesche, Chief Information Security Officer (CISO)

Chris Allers, VP of Application Development

Parts Unlimited: Board

Bob Strauss, Lead Director, former Chairman, former CEO

Erik Reid, Board Candidate

Nancy Mailer, Chief Audit Executive

Friday, August 2

Company: Parts Unlimited (PAUL)

Rating: SEL

Price Target: \$8 (current \$1

Effective immediately, Parts Unlimited CEO, Steve Masters, is stepping down from his role as chairman after eight years of holding that position. Board Director Bob Strauss, who served as company chairman and CEO two decades ago, is returning from retirement to assume the role of chairman.

Parts Unlimited stock has tumbled 19 percent in the last 30 days under heavy trading, down 52 percent from its peak three years ago. The company continues to be outmaneuvered by its arch rival, famous for its ability to anticipate and instantly react to customer needs. Parts Unlimited now trails the competition in sales growth, inventory turns and profitability.

The company has long promised that its “Phoenix” program will restore profitability and close the gap by tightly integrating its retailing and e-commerce channels. Already years late, many expect the company to announce another program delay in its analyst earnings call next month.

We believe that institutional investors such as Wayne-Yokohama pressured Bob to reconfigure the board as the first of many actions to right the ship in Elkhart Grove. A growing number of investors are pushing for more significant leadership changes and strategic options, such as splitting up the company.

Despite Masters’ past achievements that transformed Parts Unlimited into one of the top automotive parts manufacturers and retailers, we believe splitting up the chairman and CEO roles is long overdue. Parts Unlimited needs fresh leadership, either from the outside or from within. We believe Sarah Moulton, SVP of Retail Operations, and a rising star at the company could just be what the company needs.

According to our sources, the board has given Strauss and Masters six months to make dramatic improvements. If they can’t pull this off, expect more changes and turbulent times.

—Kelly Lawrence, Chief Industry Analyst, Nestor Meyer

###

“Bill Palmer here,” I say, answering my cell phone on the first ring.

I’m late, so I’m driving ten miles per hour over the speed limit, instead of my usual five. I spent the morning at the doctor’s office with my three-year-old son, trying to keep the other toddlers from coughing on us, constantly being interrupted by my vibrating phone.

The problem of the day is intermittent network outages. As the Director of Midrange Technology Operations, I’m responsible for the availability and smooth functioning of a relatively small IT group at Parts Unlimited, a \$4 billion per year manufacturing and retail company based in Elkhart Grove.

Even in the technology backwaters I’ve chosen to make my turf, I need to track network issues closely. Because these issues disrupt the services my group provides, people will blame the outages on me.

“Hi, Bill. This is Laura Beck, from Human Resources.” She’s not the person I usually deal with from HR, but her name and voice sound familiar...

Holy crap. I try not to swear out loud when I remember who she is. From the monthly company meetings. She’s the VP in charge of HR.

“Good morning, Laura,” I say with forced cheer. “What can I do for you?”

She responds, “When will you be in the office? I’d like to meet as soon as possible.”

I hate vague requests to meet. I only do that when I’m trying to schedule a time to chew someone out. Or fire them.

Wait. Is Laura calling because someone wants to fire me? Was there an outage I didn’t respond to quickly enough? As an IT Operations guy, the career-ending outage is the joke my peers and I tell one another daily.

We agree to meet at her desk in a half hour, but when she doesn’t share any more details, I say in my most cajoling voice, “Laura, what’s this all about? Is there a problem in my group? Or am I the one in trouble?” I laugh extra loudly, so she hears it over the phone.

“No, it’s nothing like that,” she says breezily. “You could even say this is good news. Thanks, Bill.”

When she hangs up, I try to think of what good news would even look like these days. When I can’t, I turn the radio back on and immediately hear a commercial from our largest retailing competitor. They’re talking about their unparalleled customer service and a breathtaking new offering that allows people to customize their cars with their friends online.

The ad is brilliant. I’d use the service in a second, if I weren’t such a loyal company man. How do

they keep bringing such incredible new capabilities to market while we remain stuck in the mud?

I turn the radio off. Despite all our hard work and late nights, the competition keeps leapfrogging us. When our Marketing people hear this ad, they'll go ballistic. Because they're likely art or music majors, not people with a technology background, they'll publicly promise the impossible and IT will have to figure out how to deliver.

Each year, it gets harder. We have to do more with less, to simultaneously maintain competitiveness and reduce costs.

Some days, I think that it can't be done. Maybe I spent too much time as a sergeant in the Marine. You learn that you argue your case as best as you can with your officer, but sometimes you have to say, "Yes, sir," and then go take that hill.

I pull into the parking lot. Three years ago, finding an empty parking spot was impossible. Now, after all the layoffs, parking is rarely a problem.

When I walk into Building 5 where Laura and her staff reside, I immediately notice how nicely furnished it is. I can smell the new carpeting and there's even classy wood paneling on the walls. Suddenly, the paint and carpet in my building seem decades overdue for replacement.

That's IT's lot in life. At least we're not in a dingy, dimly lit dank basement, like in the British TV show, *The IT Crowd*.

When I get to Laura's office, she looks up and smiles. "Good seeing you again, Bill." She extends her hand, which I shake. "Have a seat while I see whether Steve Masters is available to meet."

Steve Masters? Our CEO?

She picks up and dials her phone while I sit down, looking around. The last time I was here was a couple of years ago when HR notified us that we needed to dedicate a room for nursing mothers. We were critically short of office and meeting space, and we had big project deadlines looming.

We merely wanted to use a conference room in a different building. However, Wes made it sound like we were a bunch of 1950s *Mad Men* Neanderthals. Shortly afterward, we were both summoned here for a half day of political rehabilitation and sensitivity training. Thanks, Wes.

Among other things, Wes is in charge of the networks, which is why I track network outages so closely.

Laura thanks the person on the other end of the phone and turns back to me. "Thanks for coming down on short notice. How is your family doing these days?" she asks.

My brow furrows. If I wanted to chitchat, there are many people I'd rather talk to than someone in HR. I force myself to banter about our families and kids, trying not to think about my other pressing commitments. Eventually I say, without much grace, "So, what can I do for you this morning?"

"Of course." She pauses, and then says, "Effective as of this morning, Luke and Damon are no

longer with the company. This went all the way to the top, with Steve getting involved. He's chosen you to be the VP of IT Operations."

She smiles broadly, holding out her hand again, "You're our newest VP in the company, Bill. I think some congratulations are in order?"

Holy crap. I numbly shake her hand.

No, no, no. The last thing I want is a "promotion."

Luke was our CIO, or Chief Information Officer. Damon worked for him and was my boss, in charge of IT Operations across the entire company. Both gone, just like that.

I didn't see this coming. There wasn't any chatter on the subspace radio. Nothing.

For the last decade, like clockwork, new CIOs would come and go every two years. They stay just long enough to understand the acronyms, learn where the bathrooms are, implement a bunch of programs and initiatives to upset the apple cart, and then they're gone.

CIO stands for "Career Is Over." And VPs of IT Operations don't last much longer.

I've figured out that the trick to a long career in IT Operations management is to get enough seniority to get good things done but to keep your head low enough to avoid the political battles that make you inherently vulnerable. I have absolutely no interest in becoming one of the VPs who just give each other PowerPoints all day long.

Fishing for more information, I joke, "Two executives leaving at the same time? Were they stealing money from the stores late at night?"

She laughs, but quickly returns to her HR-trained deadpan, "They both chose to pursue other interests. More than that, you'll have to find out from them."

As the saying goes, if your colleague tells you they've decided to quit, it was voluntary. But when someone else tells you they've decided to quit, it was mandatory.

Ergo, my boss and his boss were just whacked.

This is exactly why I don't want a promotion. I'm extremely proud of the team I've built over the last ten years. It's not the largest group, but we're the most organized and dependable, by far. Especially compared to Wes.

I groan at the thought of managing Wes. He doesn't manage a team—he's barely one step ahead of a chaotic mob.

As I break out in a cold sweat, I know I will never accept this promotion.

All this time, Laura has been talking, and I haven't heard a single word. "—and so we'll obviously need to talk about how we're going to announce this transition. And Steve wants to see you as soon as possible."

"Look, thanks for the opportunity. I'm honored. But I don't want this role. Why would I? I love m

current job, and there are tons of important things that still need to be done.”

“I don’t think this is optional,” she says, looking sympathetic. “This came straight from Steve. He chose you personally, so you’ll have to talk with him.”

I stand up and reiterate firmly, “No, really. Thanks for thinking of me, but I’ve already got a great job. Good luck finding someone else.”

Minutes later, Laura is walking me to Building 2, the tallest building on campus. I’m angry at myself for getting sucked into this insanity.

If I run now, I’m pretty sure she wouldn’t be able to catch me, but then what? Steve would just send a whole squad of HR goons to fetch me.

I don’t say anything, definitely not feeling like small talk anymore. Laura doesn’t seem to care, walking briskly beside me, nose buried in her phone, occasionally gesturing directions.

She finds Steve’s office without ever looking up, obviously having made this walk many times before.

This floor is warm and inviting, furnished just like it was in the 1920s, when the building was constructed. With dark hardwood floors and stained glass windows, it’s from an era when everyone wore suits and smoked cigars in their offices. The company was booming then—Parts Unlimited made various widgets inside almost every make of automobile, when horses were being vanquished from daily life.

Steve has a corner office, where a no-nonsense woman is keeping guard. She’s about forty, radiating cheerfulness and a sense of organization and order. Her desk is tidy, with Post-it notes everywhere on the wall. There’s a coffee mug with the words “Don’t Mess With Stacy” by her keyboard.

“Hi, Laura,” she says, looking up from her computer. “Busy day, huh? So, this is Bill?”

“Yep. In the flesh,” Laura replies, smiling.

To me she says, “Stacy keeps Steve in line. You’ll grow to know her well, I suspect. You and I can finish up later.” Then she leaves.

Stacy smiles at me. “Pleasure. I’ve heard a lot about you already. Steve is expecting you.” She points to his door.

I immediately like her. And I think about what I’ve just learned. It’s been a busy day for Laura. Stacy and Laura are on very familiar terms. Steve has HR on speed dial. Apparently, people who work for Steve don’t last long.

Great.

Walking in, I’m a little surprised to find Steve’s office looks just like Laura’s. It’s the same size as my boss’ office—or rather, my ex-boss’ office—and potentially my new office if I’m stupid, which I

am not.

Maybe I was expecting Persian rugs, water fountains, and large sculptures everywhere. Instead, there are photos on the wall of a small propeller airplane, his smiling family, and, to my surprise, one of him in a US Army uniform on a runway somewhere tropical. I note with surprise the insignia visible on his lapels.

So, Steve was a major.

He is sitting behind his desk, scrutinizing what appear to be paper spreadsheets. There's a laptop open behind him, displaying a browser full of stock graphs.

"Bill, good to see you again," he says, standing and shaking my hand. "It's been a long time. About five years, right? It was after you pulled off that amazing project to integrate one of the manufacturing acquisitions. I trust life has been treating you well?"

I'm surprised and a bit flattered that he remembered our brief interaction, especially when it was so long ago. I smile in return, saying, "Yes, very well, thank you. I'm amazed you remember something so far back."

"You think we give out awards like that to just anyone?" he says earnestly. "That was an important project. To make that acquisition pay off, we needed to nail it, which you and your team did superbly."

"I'm sure Laura has told you a bit about the organizational changes I've made. You know Luke and Damon are no longer with the company. I intend to fill the CIO position eventually, but in the meantime, all of IT will report to me."

He continues, brisk and businesslike, "However, with Damon's departure, I have an organizational hole I need to fill. Based on our research, you're clearly the best candidate to take over as VP of IT Operations."

As if he just remembered, he says, "You were a Marine. When and where?"

I announce automatically, "222nd Marine Expeditionary Unit. Sergeant. I was in for six years but never saw combat."

Remembering how I joined the Marines as a cocky eighteen-year-old, I say with a small smile, "The Corps really straightened me out—I owe them a lot, but I sure hope neither of my sons join under the same conditions I did."

"I bet," Steve laughs. "I was in the Army for eight years myself, slightly longer than I was obligated to. But I didn't mind. ROTC was the only way I could pay for college, and they treated me well."

He adds, "They didn't coddle us like they did you Marines, but I still can't complain."

I laugh, finding myself liking him. This is the longest interaction we've had. I suddenly wonder if this is what politicians are like.

I try to stay focused on why he summoned me here: He's going to ask me to undertake some kamikaze mission.

"Here's the situation," he says, motioning me to have a seat at his conference table. "As I'm sure you're aware, we must regain profitability. To do that, we need to increase our market share and average order sizes. Our retail competitors are kicking our ass. The whole world knows this, which is why our stock price is half what it was three years ago."

He continues, "Project Phoenix is essential to closing the gap with the competition, so we can finally do what the competition has been doing for years. Customers need to be able to buy from us from wherever they want, whether it's on the Internet or in our retail stores. Otherwise, we'll soon have no customers, at all."

I nod. I might be in the technology backwaters, but my team has been involved with Phoenix for years. Everyone knows how important it is.

"We're years late delivering," he continues. "Our investors and Wall Street are howling. And now my board is losing confidence in our ability to hit our commitments."

"I'll be blunt," he says. "The way things are going, I'll be out of a job in six months. As of last week, Bob Strauss, my old boss, is the new chairman of the company. There's a vocal group of shareholders trying to split up the company, and I don't know how much longer we can fend them off. What's at stake here is not just my job, but the nearly four thousand employees who work here at Par Unlimited."

Suddenly, Steve looks much older than the early fifties I had guessed him to be. Looking right at me, he says, "As acting CIO, Chris Allers, our VP of Application Development, will report to me. And so will you."

He stands up and starts to pace, "I need you to keep all the things that are supposed to be up, well up. I need someone reliable, who isn't afraid to tell me bad news. Above all, I need someone I can trust to do the right thing. That integration project had many challenges, but you always kept a cool head. You've built a reputation as someone who is dependable, pragmatic, and willing to say what you really think."

He's been candid with me, so I reply with the same. "Sir, with all due respect, it seems very difficult for senior IT leadership to succeed here. Any request for budget or staff is always shot down, and executives are replaced so quickly, some never even get a chance to fully unpack."

With finality, I say, "Midrange Operations is critical to getting Phoenix done, too. I need to stay there to see those things through to completion. I appreciate you thinking of me, but I can't accept. However, I promise I'll keep my eyes open for any good candidates."

Steve looks at me appraisingly, his expression surprisingly grave. "We've had to cut budgets

across the entire company. That edict came straight from my board. My hands were tied. I won't make promises I can't keep, but I can promise you I'll do whatever it takes to support you and your mission.

"Bill, I know you didn't ask for this job, but the company's survival is at stake here. I need you to help me save this great company. Can I count on you?"

Oh, for chrissakes.

Before I can politely decline again, I suddenly hear myself saying, "Yes, sir, you can count on me."

I panic, realizing that Steve somehow used some Jedi mind trick on me. I force myself to stop talking before I make more dumb promises.

"Congratulations," Steve says, standing up and shaking my hand firmly. He clasps my shoulder. "I knew you'd do the right thing. On behalf of the entire executive team, we're grateful for you stepping up."

I look at his hand grasping mine, wondering if I can backpeddle my way out.

Not a chance in hell, I decide.

Swearing to myself, I say, "I'll do my best, sir. And could you at least explain why no one who accepts this position lasts very long? What do you want most from me? And what don't you want?"

With a resigned half smile, I add, "If I fail, I'll try to make sure it's in a new and novel way."

"I like that!" Steve says, laughing loudly. "What I want is for IT to keep the lights on. It should be like using the toilet. I use the toilet and, hell, I don't ever worry about it not working. What I don't want is to have the toilets back up and flood the entire building." He smiles broadly at his own joke.

Great. In his mind, I'm a glorified janitor.

He continues, "You have a reputation of running the tightest ship in the IT organization. So I'm giving you the entire fleet. I expect you to make them all run the same way."

"I need Chris focused on Phoenix execution. Anything in your area of responsibility that takes focus away from Phoenix is unacceptable. That applies not just to you and Chris, but everyone else in this company. Is that clear?"

"Absolutely," I say, nodding. "You want the IT systems to be reliable and available, and for the business to be able to depend upon them. You want disruptions to normal operations kept to an absolute minimum so that the business can focus on getting Phoenix done."

Looking surprised, Steve nods. "Exactly. Yes, well put. Whatever you said, that's exactly what I want."

He hands me an e-mail printout from Dick Landry, the CFO.

From: Dick Landry

To: Steve Masters

Date: September 2, 8:27 AM

Priority: Highest

Subject: ACTION NEEDED: payroll run is failing

Hey, Steve. We've got serious issues with this week's payroll. We're trying to figure out if the problem is with the numbers or in the payroll system. Either way, thousands of employees have paychecks stuck in system & are at risk of not getting paid. Seriously bad news.

We must fix this before payroll window closes at 5 PM today. Please advise on how to escalate this, given the new IT org.

Dick

I wince. Employees not getting paychecks means families not being able to pay their mortgages or put food on the table.

Suddenly, I realize that my family's mortgage payment is due in four days, and we could be one of the families affected. A late mortgage payment could screw up our credit rating even more, which we spent years repairing after we put Paige's student loans on my credit card.

"You want me to jump on this and manage the incident to conclusion?"

Steve nods, giving me the thumbs-up. "Keep me posted on the progress, please." His expression turns grave. "Every responsible company takes care of its employees. Many of our factory workers live from paycheck to paycheck. Do not create hardship for their families, you hear? This could get us in trouble with the union, maybe even triggering a work-stoppage, creating some very bad press for us."

I nod automatically. "Restore critical business operations and keep us out of the front-page news. Got it. Thanks."

Why, exactly, I'm thanking him is not clear.

“How’d it go in there?” Stacy asks kindly, looking up from her keyboard.

I just shake my head. “I can’t believe it. He just talked me into taking a new job I don’t want. How did that happen?”

“He can be very persuasive,” she says. “For what it’s worth, he’s one-of-a-kind. I’ve worked for him for nearly ten years, and I’ll follow him anywhere. Anything I can help with to make your job easier?”

Thinking for a moment, I ask, “There’s an urgent payroll issue that needs to be fixed. Dick Landry is on floor three, right?”

“Here you go,” she says, before I’ve finished asking my question, handing me a Post-it note with all of Dick’s contact information. Office location, phone numbers, and everything.

Grateful, I smile at her. “Thanks a lot—you are fantastic!”

I dial Dick’s cell phone on my way to the elevator. “Dick here,” he answers gruffly, still typing in the background.

“This is Bill Palmer. Steve just made me the new VP of IT Operations, and he asked me to—”

“Congratulations,” he interrupts. “Now look, my people found a huge payroll irregularity. When can you get to my office?”

“Right away,” I reply. I hear the click of him ending the call. I’ve had warmer welcomes.

On the third floor, I walk through Finance and Accounting, surrounded by pinstriped shirts and starched collars. I find Dick at his desk, still on the phone with someone. When he sees me, he puts his hand over the mouthpiece. “You from IT?” he asks gruffly.

When I nod, he says into the phone, “Look, I gotta run. Someone who’s supposedly going to help finally here. I’ll call you back.” Without waiting for an answer, he hangs up the phone.

I’ve never actually seen someone who routinely hangs up on people. I brace myself for a conversation that is likely to be short on any comforting “let’s get to know each other” foreplay.

As if in a hostage situation, I slowly raise my hands, showing Dick the printed e-mail. “Steve just told me about the payroll outage. What’s the best way for me to get some situational awareness here?”

“We’re in deep kimchi,” Dick responds. “In yesterday’s payroll run, all of the records for the hourly employees went missing. We’re pretty damned sure it’s an IT issue. This screwup is preventing us from paying our employees, violating countless state labor laws, and, no doubt, the union is going to scream bloody murder.”

He mutters under his breath for a moment. “Let’s go see Ann, my Operations Manager. She’s been

pulling her hair out since yesterday afternoon.”

Walking quickly to keep up, I nearly run into him when he stops and peers through a conference room window. He opens the door. “How’s it going in here, Ann?”

There are two well-dressed women in the room: one, around forty-five years old, studies the whiteboard, filled with flowcharts and a lot of tabulated numbers, and the other, in her early thirties, types on a laptop. Spreadsheets are strewn all over the large conference room table. The older woman gestures with an open marker at what appears to be a list of potential failure causes.

Something about the way they dress, and their concerned and irritated expressions, makes me think they were recruited from a local accounting firm. Ex-auditors. Good to have them on our side, I suppose.

Ann shakes her head in exhausted frustration. “Not much progress, I’m afraid. We’re almost certain this is an IT systems failure in one of the upstream timekeeping systems. All of the hourly factory worker records got screwed up in the last upload—”

Dick interrupts her. “This is Bill from IT. He’s been assigned to fix this mess or die trying, is what I think he said.”

I say, “Hi, guys. I’ve just been made the new head of IT Operations. Can you start from the beginning and tell me what you know about the problem?”

Ann walks over to the flowchart on the whiteboard. “Let’s start with the information flow. Our financial system gets payroll data from all our various divisions in different ways. We roll up all the numbers for salaried and hourly personnel, which includes wages and taxes. Sounds easy, but it’s extremely complex, because each state has different tax tables, labor laws, and so forth.

“To make sure something doesn’t get screwed up,” she continues, “we make sure the summarized numbers match the detailed numbers from each division.”

As I hurriedly jot down some notes, she continues, “It’s a pretty clunky and manual process. It works most of the time, but yesterday we discovered that the general ledger upload for hourly production staff didn’t come through. All of the hourlies had zeroes for their hours worked and amount due.

“We’ve had so many problems with this particular upload,” she says, obviously frustrated, “that I gave us a program that we use to do manual corrections, so we don’t have to bother them anymore.”

I wince. I don’t like finance personnel manually changing payroll data outside the payroll application. It’s error-prone and dangerous. Someone could copy that data onto a USB drive or e-mail outside of the organization, which is how organizations lose sensitive data.

“Did you say all the numbers for salaried employees are okay?” I ask.

“That’s right,” she replies.

“But hourly employees are all zeroes,” I confirm.

“Yep,” she again replies.

Interesting. I ask, “Why do you think the payroll run failed when it was working before? Have you had problems like this in the past?”

She shrugs. “Nothing like this has happened before. I have no idea what could have caused it—no major changes were scheduled for this pay period. I’ve been asking the same questions, but until we hear from the IT guys, we’re stuck dead in the water.”

“What is our backup plan,” I ask, “if things are so hosed that we can’t get the hourly employee data in time?”

“For crying out loud,” Dick says. “It’s in that e-mail you’re holding. The deadline for electronic payments is 5 p.m., today. If we can’t hit that window, we may have to FedEx bales of paper checks to each of our facilities for them to distribute to employees!”

I frown at this scenario and so does the rest of the finance team.

“That won’t work,” Ann says, clicking a marker on her teeth. “We’ve outsourced our payroll processing. Each pay period, we upload the payroll data to them, which they then process. In the worst case, maybe we download the previous payroll run, modify it in a spreadsheet, and then re-upload it?”

“But because we don’t know how many hours each employee worked, we don’t know how much to pay them!” she continues. “We don’t want to overpay anyone, but that’s better than accidentally underpaying them.”

It’s obvious that plan B is fraught with problems. We’d basically be guessing at people’s paychecks, as well as paying people who were terminated, and not paying people who were newly hired.

To get Finance the data they need, we may have to cobble together some custom reports, which means bringing in the application developers or database people.

But that’s like throwing gasoline on the fire. Developers are even worse than networking people. Show me a developer who isn’t crashing production systems, and I’ll show you one who can’t fog a mirror. Or more likely, is on vacation.

Dick says, “These are two lousy options. We could delay our payroll run until we have the correct data. But we can’t do this—even if we’re only a day late, we’ll have the union stepping in. So, that leaves Ann’s proposal of paying our employees something, even if it’s the incorrect amount. We’d have to adjust everyone’s paycheck in the next pay period. But now we have a financial reporting error that we’ve got to go back and fix.”

He pinches the bridge of his nose and continues to ramble. “We’ll have a bunch of odd journal entries in our general ledger, just when our auditors are here for our SOX-404 audits. When they see

this, they'll never leave.

"Oh, Christ. A financial reporting error?" Dick mutters. "We'll need approval from Steve. We're going to have auditors camped out here until the cows come home. No one'll ever get any real work done again."

SOX-404 is short for the Sarbanes-Oxley Act of 2002, which Congress enacted in response to the accounting failures at Enron, WorldCom, and Tyco. It means the CEO and CFO have to personally sign their names, attesting that their company's financial statements are accurate.

Everyone longs for the days when we didn't spend half our time talking to auditors, complying with each new regulatory requirement *du jour*.

I look at my notes and then at the clock. Time is running out.

"Dick, based on what I've heard, I recommend that you continue to plan for the worst and we fully document plan B, so we can pull it off without further complications. Furthermore, I request that we wait until 3 p.m. before making a decision. We may be still able to get all the systems and data back.

When Ann nods, Dick says, "Okay, you've got four hours."

I say, "Rest assured that we understand the urgency of the situation and that you'll be apprised of how it's going as soon as I find out myself."

"Thanks, Bill," Ann says. Dick remains silent as I turn around and walk out the door.

I feel better, now that I've seen the problem from the business perspective. It's now time to get under the covers and find out what broke the complex payroll machinery.

While walking down the stairs, I dig out my phone and scan my e-mails. My feeling of calm focus disappears when I see that Steve hasn't sent out an announcement of my promotion. Wes Davis and Patty McKee, who until today were my peers, still have no idea that I'm now their new boss.

Thanks, Steve.

When I enter Building 7, it hits me. Our building is the ghetto of the entire Parts Unlimited campus.

It was built in the 1950s, and last remodeled in the 1970s, obviously built for utility, not aesthetic. Building 7 used to be our large brake-pad manufacturing factory until it was converted into data center and office space. It looks old and neglected.

The security guard says cheerfully, "Hello, Mr. Palmer. How is the morning going so far?"

For a moment, I'm tempted to ask him to wish me luck, so he can get paid the correct amount this week. Of course, I merely return his friendly greeting.

I'm headed toward the Network Operations Center, or as we call it, the NOC, where Wes and Patty are most likely to be. They're now my two primary managers.

Wes is Director of Distributed Technology Operations. He has technical responsibility for over a

thousand Windows servers, as well as the database and networking teams. Patty is the Director of IT Service Support. She owns all the level 1 and 2 help desk technicians who answer the phones around the clock, handling break-fix issues and support requests from the business. She also owns some of the key processes and tools that the entire IT Operations organization relies upon, like the trouble ticketing system, monitoring, and running the change management meetings.

I walk past rows upon rows of cubicles, the same as every other building. However, unlike Buildings 2 and 5, I see peeling paint and dark stains seeping through the carpet.

This part of the building was built on top of what used to be the main assembly floor. When they converted it, they couldn't get all the machine oil cleaned up. No matter how much sealant we put down to coat the floors, oil still has a tendency to seep through the carpet.

I make a note to put in a budget request to replace the carpets and paint the walls. In the Marines, keeping the barracks neat and tidy was not only for aesthetics but also for safety.

Old habits die hard.

I hear the NOC before I see it. It's a large bullpen area, with long tables set up along one wall, displaying the status of all the various IT services on large monitors. The level 1 and 2 help desk people sit at the three rows of workstations.

It's not exactly like mission control in *Apollo 13*, but that's how I explain it to my relatives.

When something hits the fan, you need all the various stakeholders and technology managers to communicate and coordinate until the problem is resolved. Like now. At the conference table, fifteen people are in the midst of a loud and heated discussion, huddled around one of the classic gray speakerphones that resembles a UFO.

Wes and Patty are sitting next to each other at the conference table, so I walk behind them to listen in. Wes leans back in his chair with his arms crossed over his stomach. They don't get all the way across. At six feet three inches tall and over 250 pounds, he casts a shadow on most people. He seems to be in constant motion and has a reputation of saying whatever is on his mind.

Patty is the complete opposite. Where Wes is loud, outspoken, and shoots from the hip, Patty is thoughtful, analytical, and a stickler for processes and procedures. Where Wes is large, combative, and sometimes even quarrelsome, Patty is elfin, logical, and levelheaded. She has a reputation for loving processes more than people and is often in the position of trying to impose order on the chaos in IT.

She's the face of the entire IT organization. When things go wrong in IT, people call Patty. She's our professional apologist, whether it's services crashing, web pages taking too long to load, or, as in today's case, missing or corrupted data.

They also call Patty when they need their work done—like upgrading a computer, changing a

phone number, or deploying a new application. She does all of the scheduling, so people are always lobbying her to get their work done first. She'll then hand it off to people who do the work. For the most part, they live in either my old group or in Wes' group.

Wes pounds the table, saying, "Just get the vendor on the phone and tell them that unless they get tech down here pronto, we're going to the competition. We're one of their largest customers! We should probably have abandoned that pile of crap by now, come to think of it."

He looks around and jokes, "You know the saying, right? The way you can tell a vendor is lying is when their lips are moving."

One of the engineers across from Wes says, "We have them on the phone right now. They say it'll be at least four hours before their SAN field engineer is on-site."

I frown. Why are they talking about the SAN? Storage area networks provide centralized storage to many of our most critical systems, so failures are typically global: It won't be just one server that goes down; it'll be hundreds of servers that go down all at once.

While Wes starts arguing with the engineer, I try to think. Nothing about this payroll run failure sounds like a SAN issue. Ann suggested that it was probably something in the timekeeping application supporting each plant.

"But after we tried to rollback the SAN, it stopped serving data entirely," another engineer says. "Then the display started displaying everything in kanji! Well, we think it was kanji. Whatever it was, we couldn't make heads or tails of those little pictures. That's when we knew we needed to get the vendor involved."

Although I'm joining late, I'm convinced we're totally on the wrong track.

I lean in to whisper to Wes and Patty, "Can I get a minute with you guys in private?"

Wes turns and, without giving me his full attention, says loudly, "Can't it wait? In case you haven't noticed, we're in the middle of a huge issue here."

I put my hand firmly on his shoulder. "Wes, this is really important. It's about the payroll failure and concerns a conversation I just had with Steve Masters and Dick Landry."

He looks surprised. Patty is already out of her chair. "Let's use my office," she says, leading the way.

Following Patty into her office, I see a photo on her wall of her daughter, who I'd guess is eleven years old. I'm amazed at how much she looks like Patty—fearless, incredibly smart, and formidable—in a way that is a bit scary in such a cute little girl.

In a gruff voice, Wes says, "Okay, Bill, what's so important that you think is worth interrupting a Sev 1 outage in progress?"

That's not a bad question. Severity 1 outages are serious business-impacting incidents that are so

disruptive, we typically drop everything to resolve them. I take a deep breath. “I don’t know if you’ve heard, but Luke and Damon are no longer with the company. The official word is that they’ve decided to take some time off. More than that, I don’t know.”

The surprised expressions on their faces confirm my suspicions. They didn’t know. I quickly relate the events of the morning. Patty shakes her head, uttering a tsk-tsk in disapproval.

Wes looks angry. He worked with Damon for many years. His face reddens. “So now we’re supposed to take orders from you? Look, no offense, pal, but aren’t you a little out of your league? You’ve managed the midrange systems, which are basically antiques, for years. You created a nice little cushy job for yourself up there. And you know what? You have absolutely no idea how to run modern distributed systems—to you, the 1990s is still the future!

“Quite frankly,” he says, “I think your head would explode if you had to live with the relentless pace and complexity of what I deal with every day.”

I exhale, while counting to three. “You want to talk to Steve about how you want my job? Be my guest. Let’s get the business what they need first and make sure that everyone gets paid on time.”

Patty responds quickly, “I know you weren’t asking me, but I agree that the payroll incident needs to be our focus.” She pauses and then says, “I think Steve made a good choice. Congratulations, Bill. When can we talk about a bigger budget?”

I flash her a small smile and a nod of thanks, returning my gaze to Wes.

A couple moments go by, and expressions I can’t quite decipher cross his face. Finally he relents, “Yeah, fine. And I will take you up on your offer to talk to Steve. He’s got a lot of explaining to do.”

I nod. Thinking about my own experience with Steve, I genuinely wish Wes luck if he actually decides to have a showdown with him.

“Thank you for your support, guys. I appreciate it. Now, what do we know about the failure—or failures? What’s all this about some SAN upgrade yesterday? Are they related?”

“We don’t know,” Wes shakes his head. “We were trying to figure that out when you walked in. We were in the middle of a SAN firmware upgrade yesterday when the payroll run failed. Brent thought the SAN was corrupting data, so he suggested we back out the changes. It made sense to me, but as you know, they ended up bricking it.”

Up until now, I’ve only heard “bricking” something in reference to breaking something small, like when a cell phone update goes bad. Using it to refer to a million-dollar piece of equipment where all our irreplaceable corporate data are stored makes me feel physically ill.

Brent works for Wes. He’s always in the middle of the important projects that IT is working on. I’ve worked with him many times. He’s definitely a smart guy but can be intimidating because of how much he knows. What makes it worse is that he’s right most of the time.

“You heard them,” Wes says, gesturing toward the conference table where the outage meeting continues unabated. “The SAN won’t boot, won’t serve data, and our guys can’t even read any of the error messages on the display because they’re in some weird language. Now we’ve got a bunch of databases down, including, of course, payroll.”

“To work the SAN issue, we had to pull Brent off of a Phoenix job we promised to get done for Sarah,” Patty says ominously. “There’s going to be hell to pay.”

“Uh-oh. What exactly did we promise her?” I ask, alarmed.

Sarah is the SVP of Retail Operations, and she also works for Steve. She has an uncanny knack for blaming other people for her screwups, especially IT people. For years, she’s been able to escape any sort of real accountability.

Although I’ve heard rumors that Steve is grooming her as his replacement, I’ve always discounted that as being totally impossible. I’m certain that Steve can’t be blind to her machinations.

“Sarah heard from someone that we were late getting a bunch of virtual machines over to Chris,” she replies. “We dropped everything to get on it. That is, until we had to drop everything to fix the SAN.”

Chris Allers, our VP of Application Development, is responsible for developing the applications and code that the business needs, which then get turned over to us to operate and maintain. Chris’ life is currently dominated by Phoenix.

I scratch my head. As a company, we’ve made a huge investment in virtualization. Although it looks uncannily like the mainframe operating environment from the 1960s, virtualization changed the game in Wes’ world. Suddenly, you don’t have to manage thousands of physical servers anymore. They’re now logical instances inside of one big-iron server or maybe even residing somewhere in the cloud.

Building a new server is now a right-click inside of an application. Cabling? It’s now a configuration setting. But despite the promise that virtualization was going to solve all our problems here we are—still late in delivering a virtual machine to Chris.

“If we need Brent to work the SAN issue, keep him there. I’ll handle Sarah,” I say. “But if the payroll failure was caused by the SAN, why didn’t we see more widespread outages and failures?”

“Sarah is definitely going to be one unhappy camper. You know, suddenly I don’t want your job anymore,” Wes says with a loud laugh. “Don’t get yourself fired on your first day. They’ll probably come for me next!”

Wes pauses to think. “You know, you have a good point about the SAN. Brent is working the issue right now. Let’s go to his desk and see what he thinks.”

Patty and I both nod. It’s a good idea. We need to establish an accurate timeline of relevant event

And so far, we're basing everything on hearsay.

That doesn't work for solving crimes, and it definitely doesn't work for solving outages.

I follow Patty and Wes as they walk past the NOC, into the sea of cubicles. We end up in a giant workspace created by combining six cubicles. A large table sits against one wall with a keyboard and four LCD monitors, like a Wall Street trading desk. There are piles of servers everywhere, all with blinking lights. Each portion of the desk is covered by more monitors, showing graphs, login windows, code editors, Word documents, and countless applications I don't recognize.

Brent types away in a window, oblivious to everything around him. From his phone, I hear the NOC conference line. He obviously doesn't seem worried that the loud speakerphone might bother his neighbors.

"Hey, Brent. You got a minute?" Wes asks loudly, putting a hand on his shoulder.

"Can it wait?" Brent replies without even looking up. "I'm actually kind of busy right now. Working the SAN issue, you know?"

Wes grabs a chair. "Yeah, that's what we're here to talk about."

When Brent turns around, Wes continues, "Tell me again about last night. What made you conclude that the SAN upgrade caused the payroll run failure?"

Brent rolls his eyes, "I was helping one of the SAN engineers perform the firmware upgrade after everybody went home. It took way longer than we thought—nothing went according to the tech note. It got pretty hairy, but we finally finished around seven o'clock.

"We rebooted the SAN, but then all the self-tests started failing. We worked it for about fifteen minutes, trying to figure out what went wrong. That's when we got the e-mails about the payroll run failing. That's when I said, 'Game Over.'

"We were just too many versions behind. The SAN vendor probably never tested the upgrade path we were going down. I called you, telling you I wanted to pull the plug. When you gave me the nod, we started the rollback.

"That's when the SAN crashed," he says, slumping in his chair. "It not only took down payroll but a bunch of other servers, too."

"We've been meaning to upgrade the SAN firmware for years, but we never got around to it," Wes explains, turning to me. "We came close once, but then we couldn't get a big enough maintenance window. Performance has been getting worse and worse, to the point where a bunch of critical apps were being impacted. So finally, last night, we decided to just bite the bullet and do the upgrade."

I nod. Then, my phone rings.

It's Ann, so I put her on speakerphone.

"As you suggested, we looked at the data we pulled from the payroll database yesterday. The last pay period was fine. But for this pay period, all the Social Security numbers for the factory hourlies are complete gibberish. And all their hours worked and wage fields are zeroes, too. No one has ever seen anything like this before."

"Just one field is gibberish?" I ask, raising my eyebrows in surprise. "What do you mean by 'gibberish'? What's in the fields?"

She tries to describe what she's seeing on her screen. "Well, they're not numbers or letters. There's some hearts and spades and some squiggly characters... And there's a bunch of foreign characters with umlauts... And there are no spaces. Is that important?"

When Brent snickers as he hears Ann trying to read line noise aloud, I give him a stern glance. "I think we've got the picture," I say. "This is a very important clue. Can you send the spreadsheet with the corrupted data to me?"

She agrees. "By the way, are a bunch of databases down now? That's funny. They were up last night."

Wes mutters something under his breath, silencing Brent before he can say anything.

"Umm, yes. We're aware of the problem and we're working it, too," I deadpan.

When we hang up, I breathe a sigh of relief, taking a moment to thank whatever deity protects people who fight fires and fix outages.

"Only one field corrupted in the database? Come on, guys, that definitely doesn't sound like a SAN failure." I say. "Brent, what else was going on yesterday, besides the SAN upgrade, that could have caused the payroll run to fail?"

Brent slouches in his chair, spinning it around while he thinks. "Well, now that you mention it... developer for the timekeeping application called me yesterday with a strange question about the database table structure. I was in the middle of working on that Phoenix test VM, so I gave him a really quick answer so I could get back to work. You don't suppose he did something to break the app, do you?"

Wes turns quickly to the speakerphone dialed into the NOC conference call that has been on this whole time and unmutes the phone. "Hey, guys, it's Wes here. I'm with Brent and Patty, as well as with our new boss, Bill Palmer. Steve Masters has put him in charge of all of IT Ops. So listen up, guys."

My desire for an orderly announcement of my new role seems less and less likely.

Wes continues, "Does anyone know anything about a developer making any changes to the timekeeping application in the factories? Brent says he got a call from someone who asked about changing some database tables."

From the speakerphone, a voice pipes up, “Yeah, I was helping someone who was having some connectivity issues with the plants. I’m pretty sure he was a developer maintaining the timekeeping app. He was installing some security application that John needed to get up and running this week. I think his name was Max. I still have his contact information around here somewhere... He said he was going on vacation today, which is why the work was so urgent.”

Now we’re getting somewhere.

A developer jamming in an urgent change so he could go on vacation—possibly as part of some urgent project being driven by John Pesche, our Chief Information Security Officer.

Situations like this only reinforce my deep suspicion of developers: they’re often carelessly breaking things and then disappearing, leaving Operations to clean up the mess.

The only thing more dangerous than a developer is a developer conspiring with Security. The two working together gives us means, motive, and opportunity.

I’m guessing our CISO probably strong-armed a Development manager to do something, which resulted in a developer doing something else, which broke the payroll run.

Information Security is always flashing their badges at people and making urgent demands, regardless of the consequences to the rest of the organization, which is why we don’t invite them to many meetings. The best way to make sure something doesn’t get done is to have them in the room.

They’re always coming up with a million reasons why anything we do will create a security hole that alien space-hackers will exploit to pillage our entire organization and steal all our code, intellectual property, credit card numbers, and pictures of our loved ones. These are potentially valid risks, but I often can’t connect the dots between their shrill, hysterical, and self-righteous demands and actually improving the defensibility of our environment.

“Okay, guys,” I say decisively. “The payroll run failure is like a crime scene and we’re Scotland Yard. The SAN is no longer a suspect, but unfortunately, we’ve accidentally maimed it during our investigation. Brent, you keep working on the injured SAN—obviously, we’ve got to get it up and running soon.

“Wes and Patty, our new persons of interest are Max and his manager,” I say. “Do whatever it takes to find them, detain them, and figure out what they did. I don’t care if Max is on vacation. I’m guessing he probably messed up something, and we need to fix it by 3 p.m.”

I think for a moment. “I’m going to find John. Either of you want to join me?”

Wes and Patty argue over who will help interrogate John. Patty says adamantly, “It should be me. I’ve been trying to keep John’s people in line for years. They never follow our process, and it always causes problems. I’d love to see Steve and Dick rake him over the coals for pulling a stunt like this.”

It is apparently a convincing argument, as Wes says, “Okay, he’s all yours. I almost feel sorry for

him now.”

I suddenly regret my choice of words. This isn't a witch hunt, and I'm not looking for retribution. We still need a timeline of all relevant events leading up to the failure.

Jumping to inappropriate conclusions caused the SAN failure last night. We won't make these kind of mistakes again. Not on my watch.

As Patty and I call John, I squint at the phone number on Patty's screen, wondering if it's time to heed my wife's advice to get glasses. Yet another reminder that forty is just around the corner.

I dial the number, and a voice answers in one ring, "John here."

I quickly tell him about the payroll and SAN failure and then ask, "Did you make any changes to the timekeeping application yesterday?"

He says, "That sounds bad, but I can assure you that we didn't make any changes to your midrange systems. Sorry I can't be of more help."

I sigh. I thought that by now either Steve or Laura would have sent out the announcement of my promotion. I seem destined to explain my new role in every interaction I have.

I wonder if it would be easier if I just sent out the announcement myself.

I repeat the abridged story of my hasty promotion yet again. "Wes, Patty, and I heard that you were working with Max to deploy something urgent yesterday. What was it?"

"Luke and Damon are gone?" John sounds surprised. "I never thought that Steve would actually fire both of them over a compliance audit finding. But who knows? Maybe things are finally starting to change around here. Let this be a lesson to you, Bill. You Operations people can't keep dragging your feet on security issues anymore! Just some friendly advice..."

"Speaking of which, I'm suspicious about how the competition keeps getting the jump on us," he continues. "As they say, once is coincidence. Twice is happenstance. Third must be enemy action. Maybe our salespeople's e-mail systems have been hacked. That would sure explain why we're losing so many deals."

John continues to talk, but my mind is still stuck at his suggestion that Luke and Damon may have been fired over something security related. It's possible—John routinely deals with some pretty powerful people, like Steve and the board as well as the internal and external auditors.

However, I'm certain Steve didn't mention either John or Information Security as reasons for the departure—only the need to focus on Phoenix.

I look at Patty questioningly. She just rolls her eyes and then twirls her finger around her ear. Clearly, she thinks John's theory is crazy.

"Has Steve given you any insights on the new org structure?" I ask out of genuine curiosity—John is always complaining that information security was always prioritized too low. He's been lobbying t

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