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

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PARTS UNLIMITED

Parts Unlimited: Business Executives

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

FOR IMMEDIATE RELEASE

Friday, August 29
Company: Parts Unlimited (PAUD)
Rating: SELL
Price Target: $8 (current $13)

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 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 Meyers

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Part 1

CHAPTER 1

• Tuesday, September 2

"*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 Marines. 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 to 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 my 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 Parts 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.

CHAPTER 2

• Tuesday, September 2

"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 is 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 screw up is preventing us from paying our employees, violating countless state labor laws, and, no doubt, the union is going to scream bloody murder."

His 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 IT 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 it 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 PM, 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 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 PM 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 on 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 aesthetics. 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 Systems. 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 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 3 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 a 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 applications 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 it's 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 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 events. 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.

CHAPTER 3

• *Tuesday, September 2*

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… A 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 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 on vacation. I'm guessing he probably messed up something, and we need to fix it by 3 PM."

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 kinds 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 their 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 to become a peer of the CIO, saying it would resolve an inherent conflict of interest. To my knowledge, he hadn't succeeded.

It's no secret that Luke and Damon sidelined John as much as possible, so he couldn't interfere with people who did real work. John still managed to show up at meetings, despite their best efforts.

"What? I have no clue what's going on," he says in aggrieved tone, my question apparently striking a nerve. "I'm being kept in the dark, like usual. I'll probably be the last to find out, too, if history is any guide. Until you told me, I thought I was still reporting to Luke. And now that he's gone, I don't know who I'm reporting to. You got a call from Steve?"

"This is all above my pay grade—I'm as much in the dark as you are," I respond, playing it dumb. Quickly changing the subject, I ask, "What can you tell us about the timekeeping app change?"

"I'll call Steve and find out what's going on. He's probably forgotten Information Security even exists," he continues, making me wonder whether we'll ever be able to talk about payroll.

To my relief, he finally says, "Okay, yeah, you were asking about Max. We had an urgent audit issue around storage of PII—that is, personally identifiable information like SSNs—that's Social Security numbers, obviously, birthdays, and so forth. European Union law and now many US state laws prohibit us from storing that kind of data. We got a huge audit finding around this. I knew it was up to my team to save this company from itself and prevent us from getting dinged again. That would be front-page news, you know?"

He continues, "We found a product that tokenized this information, so we no longer have to store the SSNs. It was supposed to be deployed

almost a year ago, but it never got done, despite all my badgering. Now we're out of time. The Payment Card Industry auditors, that's PCI for short, are here later this month, so I fast-tracked the work with the time-keeping team to get it done."

I stare at my phone, speechless.

On the one hand, I'm ecstatic because we've found the smoking gun in John's hand. John's mention of the SSN field matches Ann's description of the corrupted data.

On the other hand: "Let me see if I've got this right…" I say slowly. "You deployed this tokenization application to fix an audit finding, which caused the payroll run failure, which has Dick and Steve climbing the walls?"

John responds hotly, "First, I am quite certain the tokenization security product didn't cause the issue. It's inconceivable. The vendor assured us that it's safe, and we checked all their references. Second, Dick and Steve have every reason to be climbing the walls: compliance is not optional. It's the law. My job is to keep them out of orange jumpsuits, and so I did what I had to do."

"'Orange jumpsuits?'"

"Like what you wear in prison," he says. "My job is to keep management in compliance with all relevant laws, regulations, and contractual obligations. Luke and Damon were reckless. They cut corners that severely affected our audit and security posture. If it weren't for my actions, we'd probably all be in jail by now."

I thought we were talking about a payroll failure not being thrown in jail by some imaginary police force.

"John, we have processes and procedures for how you introduce changes into production," Patty says. "You went around them, and, once again, you've caused a big problem that we're having to repair. Why didn't you follow the process?"

"Ha! Good one, Patty," John snorts. "I did follow the process. You know what your people told me? That the next possible deployment window was in four months. Hello? The auditors are on-site next week!"

He says adamantly, "Getting trapped in your bureaucratic process was simply not an option. If you were in my shoes, you'd do the same thing."

Patty reddens. I say calmly, "According to Dick, we have fewer than

four hours to get the timekeeping app up. Now that we know there was a change that affected SSNs, I think we have what we need."

I continue, "Max, who helped with the deployment, is on vacation today. Wes or Brent will be contacting you to learn more about this tokenization product you deployed. I know you'll provide them with whatever help they need. This is important."

When John agrees, I thank him for his time. "Wait, one more question. Why do you believe that this product didn't cause the failure? Did you test the change?"

There's a short silence on the phone before John replies, "No, we couldn't test the change. There's no test environment. Apparently, you guys requested a budget years ago, but…"

I should have known.

"Well, that's good news," Patty says after John hangs up. "It may not be easy to fix, but at least we finally know what's going on."

"Was John's tokenization change in the change schedule?" I ask.

She laughs humorlessly. "That's what I've been trying to tell you. John rarely goes through our change process. Nor do most people, for that matter. It's like the Wild West out here. We're mostly shooting from the hip."

She says defensively. "We need more process around here and better support from the top, including IT process tooling and training. Everyone thinks that the real way to get work done is to just do it. That makes my job nearly impossible."

In my old group, we were always disciplined about doing changes. No one made changes without telling everyone else, and we'd bend over backward to make sure our changes wouldn't screw someone else up.

I'm not used to flying this blind.

"We don't have time to do interrogations every time something goes wrong," I say, exasperated. "Get me a list of all the changes made in the past, say, three days. Without an accurate timeline, we won't be able to establish cause and effect, and we'll probably end up causing another outage."

"Good idea," she nods. "If necessary, I'll e-mail everyone in IT to find out what they were doing, to catch things that weren't on our schedule."

"What do you mean, 'e-mail everyone?' There's no system where people put in their changes? What about our ticketing system or the

change-authorization system?" I ask, stunned. This is like Scotland Yard e-mailing everyone in London to find out who was near the scene of a crime.

"Dream on," she says, looking at me like I'm a newbie, which I suppose I am. "For years, I've been trying to get people to use our change management process and tools. But just like John, no one uses it. Same with our ticketing system. It's pretty hit-or-miss, too."

Things are far worse than I thought.

"Okay, do what you need to do," I finally say, unable to hide my frustration. "Make sure you hit all the developers supporting the timekeeping system as well as all the system administrators and networking people. Call their managers, and tell them it's important that we know about any changes, regardless of how unimportant they may seem. Don't forget John's people, too."

When Patty nods, I say, "Look, you're the change manager. We've got to do better than this. We need better situational awareness, and that means we need some sort of functional change management process. Get everyone to bring in their changes so we can build a picture of what is actually going on out there."

To my surprise, Patty looks dejected. "Look, I've tried this before. I'll tell you what will happen. The Change Advisory Board, or CAB, will get together once or twice. And within a couple of weeks, people will stop attending, saying they're too busy. Or they'll just make the changes without waiting for authorization because of deadline pressures. Either way, it'll fizzle out within a month."

"Not this time," I say adamantly. "Send out a meeting notice to all the technology leads and announce that attendance is not optional. If they can't make it, they need to send a delegate. When is the next meeting?"

"Tomorrow," she says.

"Excellent," I say with genuine enthusiasm. "I'm looking forward to it."

When I finally get home, it's after midnight. After a long day of disappointments, I'm exhausted. Balloons are on the floor and a half-empty bottle of wine sits on the kitchen table. On the wall is a crayon poster saying, "Congratulations Daddy!"

When I called my wife Paige this afternoon telling her about my

promotion, she was far happier I was. She insisted on inviting the neighbors over to throw a little celebration. Coming home so late, I missed my own party.

At 2 PM, Patty had successfully argued that of the twenty-seven changes made in the past three days, only John's tokenization change and the SAN upgrade could be reasonably linked to the payroll failure. However, Wes and his team were still unable to restore SAN operations.

At 3 PM, I had to tell Ann and Dick the bad news that we had no choice but to execute plan B. Their frustration and disappointment were all too evident.

It wasn't until 7 PM when the timekeeping application was back up and 11 PM when the SAN was finally brought back online.

Not a great performance on my first day as VP of IT Operations.

Before I left work, I e-mailed Steve, Dick, and Ann a quick status report, promising to do whatever it takes to prevent this type of failure from happening again.

I go upstairs, finish brushing my teeth, and check my phone one last time before going to bed, being careful not to wake up Paige. I curse when I see an e-mail from our company PR manager, with a subject of "Bad news. We may be on the front page tomorrow…"

I sit on the bed, squinting to read the accompanying news story.

Elkhart Grove Herald Times

Parts Unlimited flubs paychecks, local union leader calls failure 'unconscionable'

Automotive parts supplier Parts Unlimited has failed to adequately compensate its workers, with some employees receiving no pay at all, according to a Parts Unlimited internal memo. The locally headquartered company admitted that it had failed to issue correct paychecks to some of its hourly factory workers and that others hadn't received any compensation for their work. Parts Unlimited denies that the issue is connected to cash flow problems and instead attributes the error to a payroll system failure.

The once high-flying $4 billion company has been plagued by flagging revenue and growing losses in recent quarters. These financial woes, which some blame on a failure of upper management, have led to rampant job insecurity among local workers struggling to support their

families.

According to the memo, whatever the cause of the payroll failure, employees might have to wait days or weeks to be compensated.

"This is just the latest in a long string of management execution missteps taken by the company in recent years," according to Nestor Meyers Chief Industry Analyst Kelly Lawrence.

Parts Unlimited CFO Dick Landry did not return phone calls from the *Herald Times* requesting comment on the payroll issue, accounting errors and questions of managerial competency.

In a statement issued on behalf of Parts Unlimited, Landry expressed regret at the "glitch," and vowed that the mistake would not be repeated.

The *Herald Times* will continue to post updates as the story progresses.

Too tired to do anything more, I turn off the lights, making make a mental note to myself to find Dick tomorrow to apologize in person. I close my eyes, and try to sleep.

An hour later I'm still staring at the ceiling, very much awake.

CHAPTER 4

· *Wednesday, September 3*

I drink my coffee as I open up my laptop at 7:30 AM, hoping to get through my e-mails and voicemails before my 8 AM meeting. I stare at the screen. In the twenty-two hours since I was promoted, 526 new e-mails have arrived in my inbox.

Holy crap.

I skip all the messages about yesterday's failure and am startled by all the congratulatory notes from vendors, wanting to meet for lunch. How did they find out? I'm pretty sure most of my organization still doesn't know.

I read an e-mail from Ellen, my former boss' assistant, who is now assigned to support me, congratulating me and asking when we can meet. I reply, telling her I'd like to take her out for coffee this morning. I send a note to the IT service desk, requesting that Ellen be granted access to my calendar.

A blinking red light on my desk phone catches my attention. It reads, "7:50 AM 62 new voicemails."

My jaw drops. It would take an hour I don't have just to listen to them. I e-mail Ellen again, asking her to go through all my voicemails, transcribing any that require action.

Before I hit send, I quickly add, "If there are any messages from Steve or Dick, please call me right away on my cell phone."

Grabbing my clipboard, I hurry toward my first meeting when my phone vibrates. It's an urgent e-mail:

> From: Sarah Moulton
> To: Bill Palmer
> Cc: Steve Masters
> Date: September 3, 7:58 am
> Priority: Highest
> Subject: Latest Phoenix slip
>
> Bill, as you know, Project Phoenix is the most important project this company is undertaking. I've heard disturbing rumors that you are holding up the release.
>
> I don't need to remind you that our competition isn't standing still. Each day that goes by, our market share goes down. I need everyone to have a sense of urgency. Especially from you, Bill.
>
> We have an emergency project management meeting at 10 am today. Please join us, and be prepared to explain these unacceptable delays.
>
> Steve, I know how important this project is for you, given the commitments you've made to the board. Please feel free to attend. We'd love your perspective.
>
> Regards,
> Sarah

Goddamnit.

I forward the e-mail to Wes and Patty, flagging it as high priority. Something seems wrong in a world where half the e-mail messages sent are urgent. Can everything really be that important?

I call Wes' cell phone. "I just got your e-mail from Sarah," he says. "What utter bullshit."

"What's this all this about?" I ask.

He says, "I'm pretty sure it's about Brent not finishing up that configuration work for the Phoenix developers. Everyone is chasing their tails because the developers can't actually tell us what the test environment should look like. We're doing our best, but every time we deliver something, they tell us we did it wrong."

"When did they tell us about it?" I ask.

"Two weeks ago. It's the typical bullshit with Development, but worse. They're so freaked out about hitting their deadlines, they're only now starting to think about how to test and deploy it. Apparently, they're making it our problem. I hope you're wearing your asbestos underwear like me. Sarah is going to be at that meeting with torches, wanting to throw us onto the bonfire."

It's amazing to me how handoffs between Development and IT Operations always get screwed up. But given the perpetual tribal warfare between the two groups, maybe I shouldn't be surprised.

I reply, "I get the picture. Look, make sure you dig into this Dev specification issue personally. We've got to get this nailed down—grab everyone involved, whether they're in Dev or Ops, and lock them in a room until they come up with a written specification. Phoenix is so important, we can't afford to screw this up."

Wes says he's on it, and I ask, "Is there anything else Sarah could pop on us?"

He pauses to think and finally says, "No, I don't think so. We have a pretty valid reason, with the payroll run failure, for why Brent wasn't able to complete his work."

I agree. Feeling like our asses are sufficiently covered, I say, "See you at ten."

Less than an hour later, I'm walking to Building 9 in the hot sunshine, where many of the Marketing folks call home. To my surprise, I join a small army of IT people walking the same way. Why?

Then it hits me. The majority of our marketing projects can't be done without IT. High touch marketing requires high tech. But if there's so many of us assigned to these Marketing projects, shouldn't they be coming to us?

I imagine that Sarah likes it this way, the spider sitting back, enjoying seeing all the company minions making their way to her lair.

I arrive and immediately see Kirsten Fingle, who runs the Project Management Office sitting at the head of the table. I am a big fan of hers. She is organized, levelheaded, and a stickler for accountability. When she first joined the company five years ago, she brought a whole new

level of professionalism to our organization.

At her right, Sarah leans back in her chair, tapping away on her iPhone, oblivious to the rest of us.

Sarah is my age: thirty-nine. She's very guarded about her age, always saying things in a way that would lead one to conclude she's much older, but never actually lying.

Yet another maddening thing about Sarah.

There are about twenty-five people in the room. Many of the business line owners are here, some of whom work for Sarah. Chris Allers is also here. Chris is a little older than me, and looks lean and fit. He'll just as often be seen joking with someone as kicking their ass about missing a deadline. He has a reputation as a capable and no-nonsense manager. With nearly two hundred developers working for him, he needs to be.

To help with Phoenix, his team has grown by fifty people in the last two years, many through offshore development shops. Chris is constantly asked to deliver more features and do it in less time, with less money.

Several of his managers are in the room, too. Wes is also here, sitting right next to Chris. As I start to look for an open chair, I note how everyone seems unusually tense. And then I see why.

There, sitting right next to the only open seat at the table, is Steve.

Everyone seems to be going to great lengths to not stare at him. As I casually take my seat next to Steve, my phone vibrates. It's a text message from Wes:

Shit. Steve has never attended a project management meeting. We are totally screwed.

Kirsten clears her throat. "First on our agenda is Phoenix. The news isn't good. This project went from yellow to red about four weeks ago, and it's my personal assessment that the deadline is in grave jeopardy."

She continues in her professional voice, "To refresh your memory, last week, there were twelve tasks in the critical path of Phoenix Phase 1. Only three of those tasks were completed."

There is a collective groan in the room, and several people mutter to one another. Steve turns to look at me. "Well?"

I explain, "The critical resource in question is Brent, who has been

one hundred percent utilized helping to recover from the payroll failure, which we all know about. This was a totally unforeseen emergency but obviously one that we had to handle. Everyone knows how important Phoenix is, and we are doing everything we can to make sure Brent can stay focused."

"Thanks for that super creative explanation, Bill," Sarah immediately responds. "The real issue here is that your people don't seem to grasp how important Phoenix is to the company. Our competition is killing us in the market. You've all seen and heard the commercials about their new services. They're beating us on innovation, both in the retail stores and online. They've already lured away some of our biggest partners, and our sales force is starting to panic. I'm not the type to say, 'I told you so,' but their latest product announcement shows why we can't be acting as if this is just business as usual."

She continues, "See, Bill, in order for us to increase market share, we must ship Phoenix. But for some reason, you and your team keep dragging your feet. Maybe you're not prioritizing correctly? Or maybe you're just not used to supporting a project this important?"

Despite all my mental preparation, I feel my face get hot with anger. Maybe it was the condescending way she was parroting Steve to me. Or how she wasn't even looking at me while she was addressing me, instead looking at Steve to see how he reacts. Or the way she basically called me out-of-touch and incompetent.

Everyone is silent as I force myself to take a deep breath.

My anger dissipates. This all just corporate theater. I don't like it but accept it for what it is. I almost made the Marines my career when I was up for promotion to staff sergeant. You don't become a senior NCO in the Marines without being able to play politics.

"Interesting," I say to Sarah. "You tell me which is more important: getting our factory employees paid or getting the Phoenix tasks done? Steve told me to resolve the payroll failure. How would you have prioritized this differently than Steve?"

At my mention of Steve, Sarah's expression changes. "Well, maybe if IT didn't cause the failure in the first place, you wouldn't have blown your commitments to us. I don't think we can depend on you and your team."

I nod slowly, not taking the bait. "I look forward to any suggestions

you have to offer, Sarah."

She looks at me, then at Steve. Apparently deciding there are no more points to be gained here, she rolls her eyes. I see Wes shaking his head in disbelief at this discussion, staying uncharacteristically quiet.

Sarah continues, "We've spent over $20 million on Phoenix, and we're nearly two years late. We must get to market." Looking over at Chris, she asks, "Given the delays from Bill's group, when is the soonest we can go live?"

Chris looks up from his papers. "I've looked into this since we talked last week. If we expedite some things and if the virtualized environments from Bill's team work as expected, we can go into production one week from Friday."

I gape at Chris. He just made up an arbitrary date to go into production, with complete disregard for all the things we need to do before deployment.

I have a sudden flashback. In the Marines, we had a ritual for all the senior NCOs. We'd hang out with beers and watch *Star Wars: Return of the Jedi*. Every time Admiral Ackbar would cry, "It's a trap!" we'd all laugh uproariously, yelling for a replay.

This time, I'm not laughing.

"Now just wait a goddamned minute here!" Wes interjects, pounding the table. "What the hell are you trying to pull? We just found out two weeks ago about the specifics of the Phoenix deployment. Your guys still haven't told us what sort of infrastructure we need, so we can't even order the necessary server and networking gear. And by the way, the vendors are already quoting us three week delivery times!"

He is now facing Chris, pointing at him angrily. "Oh, and I've heard that the performance of your code is so shitty, we're going to need the hottest, fastest gear out there. You're supposed to support 250 transactions per second, and you're barely doing even four! We're going to need so much hardware that we'll need another chassis to put it all in and probably have to pay a custom-manufacturing fee to get it in time. God knows what this will do to the budget."

Chris wants to respond, but Wes is relentless. "We still don't have a concrete specification of how the production and test systems should be configured. Oh, do you guys not need a test environment anymore? You haven't even done any real testing of your code yet, because that fell off

the schedule, too!"

My heart lurches as all the implications sink in. I've seen this movie before. The plot is simple: First, you take an urgent date-driven project, where the shipment date cannot be delayed because of external commitments made to Wall Street or customers. Then you add a bunch of developers who use up all the time in the schedule, leaving no time for testing or operations deployment. And because no one is willing to slip the deployment date, everyone after Development has to take outrageous and unacceptable shortcuts to hit the date.

The results are never pretty. Usually, the software product is so unstable and unusable that even the people who were screaming for it end up saying that it's not worth shipping. And it's always IT Operations who still has to stay up all night, rebooting servers hourly to compensate for crappy code, doing whatever heroics are required to hide from the rest of the world just how bad things really are.

"Guys, I understand the desire to get Phoenix into production as quickly as possible," I say to Steve and Chris as calmly as I can. "But based on what we've heard from Wes, I think it is incredibly premature to deploy. We still don't know what equipment we need to hit the performance objectives, nor have we done any capacity testing to confirm our guesses. It's unlikely we have adequate documentation to run this thing in production, let alone get everything monitored and backed up."

In my most persuasive voice, I continue, "I want Phoenix in the market as badly as anyone else, but if the user experience is bad enough, we'll end up driving our customers to the competition."

I turn to Chris. "You can't just throw the pig over the wall to us, and then high-five each other in the parking lot, congratulating yourselves on how you made the deadline. Wes is telling us that the pig will probably break its leg, and it'll be my guys who work all-nighters and weekends to keep that pig alive."

Chris replies hotly, "Don't give me that bullshit about 'throwing the pig over the wall.' We invited your people to our architecture and planning meetings, but I can count on one hand the number of times you guys actually showed up. We routinely have had to wait days or even weeks to get anything we need from you guys!"

Then he just holds up his hands, as if everything is outside of his control. "Look, I'd like more time, too. But from the very beginning, we all

knew that this was a date-driven project. That was a business decision we all made."

"Exactly!" Sarah exclaims before I can respond. "This just shows how Bill and his team lack the necessary sense of urgency. Perfection is the enemy of good. Bill, we simply do not have the luxury of time to polish this to whatever gold standard you're proposing. We need to create positive cash flow, and we cannot do that without taking back market share. And to do that, we need to deploy Phoenix."

She looks over at Steve. "We understand risk, don't we, Steve? You've been doing an absolutely amazing job selling this to analysts and even the guys on CNBC—I don't think we want egg on our face by shipping even later than we already are."

Steve nods his head and rubs his chin, rocking back and forth in his chair as he thinks. "Agreed," he finally says, leaning forward. "We've made commitments to our investors and analysts that we were going to launch Phoenix this quarter."

My jaw drops. Sarah has blunted all my arguments, leading Steve down a reckless, destructive path.

Exasperated, I say, "Does anyone think this is really odd? I've been in this room when we discussed installing new water fountains in the front of every store. We gave that team nine months to plan the rollout. Nine months! And all of us agreed that was reasonable.

"Now we're talking about Phoenix, which impacts thousands of point of sale systems, and all of the back-office order entry systems. This is at least ten thousand times more complex than rolling out new water fountains, with way more risk to the business. And you're only giving us one week to plan and execute the rollout?"

I throw my hands up, imploring Steve, "Doesn't this seem a bit reckless and unfair?"

Kirsten nods, but Sarah says dismissively, "Bill, that's a touching story but we're not discussing water fountains, we're discussing Phoenix. Besides, I believe the decision has already been made."

Steve says, "Yes, it has. Thank you for sharing what you view as the risks, Bill." He turns to Sarah. "When is the launch date?"

Sarah replies quickly, "Marketing launch is next Saturday, September 13. Phoenix will deploy at 5 PM the previous day."

Steve writes the date in the back of his notebook and says, "Good.

Keep me posted on progress, and let me know if there's anything I can do to help."

I look over at Wes, who mimes with his hands an airplane crashing into the table in front of him and bursting into flames.

In the hallway, Wes says, "I thought that went pretty well, boss."

I'm not laughing. "What the hell happened in there? How did we get into this position? Does anyone know what's required from us to support this launch?"

"No one has a damned clue," he says, shaking his head in disgust. "We haven't even agreed on how to do the handoff with Development. In the past, they've just pointed to a network folder and said, 'Deploy that.' There are newborn babies dropped off at church doorsteps with more operating instructions than what they're giving us."

I shake my head at his awful imagery, but he's right. We've got a serious problem here.

He continues, "We're going to have to assemble a huge team, including Chris' guys, to figure out how we're going to pull this off. We have problems at every layer: networking, servers, databases, operating systems, applications, Layer 7 switching—the whole wad of crap. It's going to be late nights for all of us for the next nine days."

I nod unhappily. This type of all-hands effort is just another part of life in IT, but it makes me angry when we need to make some heroic, diving catch because of someone else's lack of planning.

I say, "Get your team assembled, and ask Chris to assemble his respective team as well. Stop trying to do this by e-mail and in the ticketing system. We need everyone in the same room."

"Speaking of commitments," I say, "What was Chris referring to when he said that our guys never showed up to the Phoenix architecture and planning meetings? Is that true?"

Wes rolls his eyes in frustration. "Yeah, it's true that his people would invite us at the last minute. Seriously, who can clear their calendar on less than a day's notice?"

"Although, in fairness," he says, after a moment, "we did get ample notice on a couple of the big planning meetings. And one of the most critical people who needed to be there wasn't able to make it, due to

escalations. You can probably guess who that is…"

I groan. "Brent?"

Wes nods, "Yep. He's the guy we need at those meetings to tell those goddamned developers how things work in the real world and what type of things keep breaking in production. The irony, of course, is that he can't tell the developers, because he's too busy repairing the things that are already broken."

He's right. Unless we can break this cycle, we'll stay in our terrible downward spiral. Brent needs to work with developers to fix issues at the source so we can stop fighting fires. But Brent can't attend, because he's too busy fighting fires.

I say, "We need the our best minds to prepare for this deployment, so make sure Brent is there."

Wes looks sheepish for a moment. I ask him, "What?"

"I think he's working a network outage right now." he replies.

"Not anymore," I say. "They're going to have to fix it without him. If someone has a problem with that, send them to me."

"Okay, whatever you want, boss." he says, shrugging his shoulders.

After the project management meeting, I'm in no mood to talk to anyone. I sit at my desk and grumble when my laptop doesn't wake up. The disk drive light just keeps blinking. When nothing shows on the screen, I grab my empty mug that I keep on my desk by the picture of Paige and my two sons and walk to the coffee machine in the corner.

When I get back to my desk, a window on the screen tells me that it's going to install some critical new updates. I sit down, click "Okay" and watch the status bar crawl across the screen. Suddenly, I see the dreaded "blue screen of death." My laptop is now completely locked up and unusable.

It happens again even after I reboot. I mutter in frustration, "You've got to be kidding me!"

Just then, Ellen, my new assistant, pokes her head around the corner. Holding out her hand she says, "Good morning. Congratulations on the promotion, Bill!" Noticing my blue-screened laptop, she says sympathetically, "Ooh, that doesn't look good."

"Umm, thanks." I say, reaching out to shake her hand. "Yeah, about

this laptop, can you get a hold of someone in desktop support? There's some serious crap headed our way from Phoenix, and I'm going to need it."

"No problem," she says, nodding with a smile. "I'll tell them our new VP is hopping mad, demanding that his laptop get fixed. Of all people, you need a working computer, right?

"You know," she adds, "I've heard that a bunch of other people are having problems like this today. I'll make sure you get to the top of the list. You can't afford to wait in line."

More bricked laptops? This is surely evidence that the universe is out to get me today.

"By the way, I need some help coordinating some emergency Phoenix meetings. Has anyone granted you access to my calendar yet?" I ask.

She rolls her eyes. "No. That's actually why I came down here. I wanted to see if you could print out your next couple of days. Obviously, that's out of the question. I'll have the desktop support person do that while he's here. Sometimes it takes weeks for the e-mail administrators get around to stuff like this."

Weeks? That's unacceptable. I quickly look at my watch and realize I'll have to tackle this later. I'm already late.

"Do your best," I say. "I'm off to Patty's enterprise change management meeting. Call me if you need anything, okay?"

Being ten minutes late to Patty's meeting, I hurry into the room, expecting to see either a bunch of people waiting for me impatiently or perhaps a meeting already underway.

Instead, I see only Patty sitting at the conference table, typing away on her laptop.

"Welcome to the CAB , Bill. I hope you can find an empty chair." she says.

"Where is everybody?" I ask.

I'm baffled. When I ran the midrange group, my team would never miss our change management meetings. It was where we coordinated and organized all our work to make sure we didn't shoot ourselves in the foot.

"I told you yesterday that change management around here is hit-or-miss," Patty says, sighing. "Some groups have their own local change-management process, like yours. But most groups do nothing at all.

Yesterday's outage is just proof that we need to have something at the enterprise level. Right now, the left hand rarely knows what the right hand is doing."

"So, what's the problem?" I ask.

She purses her lip. "I don't know. We sent a bunch of people to ITIL training, so they could get up to speed on all the best practices. We brought in some consultants, who helped us replace our ticketing system with an ITIL-compliant change management tool. People were supposed to put change requests into it, where it would get routed for approvals. But, even after two years, all we have is a great process on paper that no one follows and a tool that no one uses. When I pester people to use them, all I get are complaints and excuses."

I nod. ITIL stands for IT Infrastructure Library, which documents many IT best practices and processes, and the ITIL program has had a reputation of spending years merely walking in circles.

I'm bothered that Wes isn't here. I know he's busy, but if he's not here, why would any of his people bother to show up? Efforts like this must start and be continually maintained from the top.

"Well, they can bring their complaints and excuses to me," I say adamantly. "We're rebooting the change management process. With my total support. Steve's told me to make sure people can stay focused on Phoenix. Screwups like the SAN failure made us miss a Phoenix deliverable, and now we're paying for it. If someone wants to skip a change management meeting, they obviously are in need of some special compassionate coaching. From me."

At Patty's puzzled expression at my Phoenix reference, I tell her about how Wes and I spent our morning being run over by the bus. Sarah and Chris were at the wheel, but Steve was in back, cheering them on to floor it.

"Not good," she says, disapprovingly. "They even ran over Kirsten, huh?"

I nod silently but refuse to say more. I always liked that phrase in *Saving Private Ryan*: "There's a chain of command: gripes go up, not down."

Instead, I ask her to walk me through the current change process and the way it's been automated in the tools. It all sounds good. But there's only one way to see if the process works.

I say, "Schedule another CAB meeting for the same time Friday. I'll send out an e-mail to all the CAB members letting them know that this is mandatory."

When I get back to my cubicle, Ellen is at my desk, bending over my laptop, writing a note.

"Everything working, I hope?" I ask.

She startles at the sound of my voice. "Oh, my God. You scared me," she says laughing. "Support left you a replacement laptop because they couldn't get your laptop to boot, even after a half hour of trying."

She points at the far side of my desk, and I do a double take.

My replacement laptop appears to be almost ten years old—it's twice as large as my old one, and looks three times as heavy. The battery has been taped on, and half the keyboard lettering is worn off from heavy use.

For a moment, I wonder if this is a practical joke.

I sit down, and bring up my e-mail, but everything is so slow that several times I thought it had locked up.

Ellen has a sympathetic expression on her face. "The support guy said that this is all they have available today. Over two hundred people are having similar problems, and many aren't getting replacements. Apparently, people with your laptop model also have had theirs break because of some security patch."

Damn. I forgot. It's Patch Tuesday, when John and his team roll out all their security patches from our major vendors. Once again, John is causing huge issues and disruptions for my team and me.

I merely nod and thank her for the help. After she's gone, I sit down and type out an e-mail to all the CAB members, my keystrokes often taking ten seconds to show up on the screen.

> From: Bill Palmer
> To: Wes Davis, Patty McKee, IT Operations Management
> Date: September 3, 2:43 PM
> Priority: Highest
> Subject: Mandatory CAB meeting Friday, 2 PM
>   Today, I attended the weekly CAB meeting. I was extremely

disappointed that I was the only one there, besides Patty, especially given the totally avoidable, change-related failure yesterday.

Effective immediately, managers (or their assigned delegates) are required to attend all scheduled CAB meetings and to perform their assigned duties. We are resurrecting the Parts Unlimited change management process and it will be followed to the letter.

Any person(s) caught circumventing change management will be subject to disciplinary action.

There will be a mandatory CAB meeting Friday at 2 PM See you there.

Call me if you have any questions or concerns.

Thanks for your support,

Bill

I hit send, waiting fifteen seconds for the e-mail to finally leave my outbox. Almost immediately, my cell phone rings.

It's Wes. I say, "I was just about to call you about the laptops. We've got to get replacements to our managers and employees so they can do their jobs, you hear?"

"Yeah, we're on it. But I'm not calling about that. And I'm not calling about Phoenix, either," he says, sounding irritated. "Look, about your memo on change management: I know you're the boss, but you better know that the last time we did one of these change management kumbayas, we ran IT straight into the ground. No one, and I mean absolutely *no one*, could get a goddamned thing done. Patty insisted on having everyone take a number and wait for her pointy-heads to authorize and schedule our changes. It was absolutely ridiculous and a total waste of time."

He's unstoppable: "That software application she made us use is a total piece of crap. It takes twenty minutes to fill out all the goddamned fields for a simple five-minute change! I don't know who designed the process, but I think they assumed that we all get paid by the hour and want to talk about doing work instead of actually doing work.

"Eventually, the Networking and Server Team staged a rebellion, refusing to use Patty's tool," he continues heatedly. "But John waved an audit finding around and went to Luke, our old CIO. And just like you did, Luke said that following policies was a condition of employment, threatening to fire anybody who didn't follow them.

"My guys were spending half their time doing paperwork and sitting in that damned CAB meeting," he continues. "Luckily, the effort finally died, and John was too clueless to catch on that no one was actually going to the meetings anymore. Even John hasn't gone to one of those meetings in over a year!"

Interesting.

"I hear you," I say. "We can't repeat that, but we also can't have another payroll disaster. Wes, I need you there, and I need you to help create the solution. Otherwise, you're part of the problem. Can I count on you?"

I hear him sigh loudly. "Yeah, sure. But you can also count on me calling 'bullshit' if I see Patty trying to create some sort of bureaucracy that sucks out everybody's will to live."

I sigh.

Before, I was merely worried that IT Operations was under attack by Development, Information Security, Audit, and the business. Now, I'm starting to realize that my primary managers seem to be at war with each other, as well.

What will it take for us to all get along?

CHAPTER 5

· *Thursday, September 4*

I wake up with a jolt when the alarm clock goes off at 6:15 AM. My jaw still hurts from clenching it all night. The dismal prospects of the up-coming Phoenix launch was never far from my mind.

As usual, before climbing out of bed, I quickly scan my phone for any bad news. Usually, I would spend about ten minutes replying to e-mails—it always feels good to lob a couple of balls off my side of the court.

I see something that makes me bolt upright so abruptly that I wake up Paige. "Oh, my God. What, what?" she asks frantically, not fully awake.

"It's another e-mail from Steve. Hang on, darling…" I say to her, while I squint to read it.

> From: Steve Masters
> To: Bill Palmer
> Cc: Nancy Mailer, Dick Landry
> Date: September 4, 6:05 AM
> Priority: Highest
> Subject: URGENT: SOX-404 IT Audit Findings Review

Bill, please look into this ASAP. I don't need to tell you how critical it is to have a clean SOX-404 audit.

Nancy, please work with Bill Palmer, who is now in charge of IT Operations.

Steve

>>> Begin forwarded message:

We just concluded our Q3 internal audit in preparation for the upcoming SOX-404 external audit. We discovered some very concerning deficiencies that we need to discuss with you. Due to the severity and urgency of the findings, we need to meet with IT this morning.

Nancy

Indeed, there's a two-hour meeting scheduled for 8 AM on my calendar, set up by Nancy Mailer, Chief Audit Executive.

Holy crap. She is incredibly smart and formidable. Years ago during the retail acquisition integration, I watched her grill a manager from the business we were acquiring. He was presenting their financial performance, when she started a rapid-fire interrogation, like a cross between Columbo, Matlock, and Scarface.

He quickly broke, admitting that he was exaggerating his division's performance.

Recalling that meeting, my armpits feel damp. I haven't done anything wrong. But given the tone of the e-mail, she is clearly hot on the trail of something important, and Steve just threw me in her path.

I've always run a very tight ship in my midrange technology group. This kept Audit from interfering too much. Sure, there would still be a lot of questions and documentation requests, requiring us to spend a few weeks collecting data and preparing responses. Occasionally, they would find something, but we would quickly fix it.

I like to think that we built a mutually respectful working relationship. However, this e-mail portends something more ominous.

I look at my watch. The meeting is in ninety minutes, and I don't have a clue about what she wants to talk about.

"Shit!" I exclaim, as I jostle Paige's shoulder. "Honey, can you drive the kids into school today? Something really bad just came up involving the Chief Audit Executive and Steve. I need to make some phone calls and get to the office right away."

Annoyed, she says, "For two years, you've always taken the kids on Thursdays! I have an early start today, too!"

"I'm sorry, honey. This is really important. The CEO of the company asked me to handle this. Steve Masters. You know, the guy on TV and who gives the big speeches at the company holiday party? I can't drop another ball after a day like yesterday. And the newspaper headline the night before that—"

Without a word, she storms down the stairs.

When I finally find the conference room for the 8 AM meeting, I immediately notice how silent it is, devoid of the usual small talk that fills the time while attendees trickle in.

Nancy sits at the head of the table, with four other people sitting around her. Sitting next to her is John along with his ever-present, black three-ring binder. As always, I'm surprised by how young he is. He's probably in his mid-thirties with thick, curly black hair.

John has a haggard look about him, and like many college students, has continually gained weight in the three years he's been here at Parts Unlimited. Most likely from all the stress associated with his failing moral crusade.

John actually reminds me more of Brent than anyone else in the room. However, unlike Brent who normally wears a Linux T-shirt, John wears a starched, collared shirt that's slightly too large.

Wes is conspicuously underdressed compared to everyone in the room, but he obviously doesn't care. The last person in the room is a young man that I don't recognize, presumably the IT auditor.

Nancy begins, "We have just concluded our Q3 internal audit in preparation for the upcoming external SOX-404 audits. We have a grave situation. Tim, our IT auditor, found an eye-opening number of IT control issues. Worse, many are repeat findings going into the third year. Left unresolved, these findings may force us to conclude that the company no longer has sufficient controls to assert the accuracy of its financial statements. This could result in an adverse footnote from the external auditors in the company 10-K filings with the US Securities and Exchange Commission.

"Although these are only preliminary findings, due to the gravity of

the situation, I have already verbally informed the audit committee."

I blanch. Although I don't understand all the audit jargon, I know enough that this could ruin Dick's day and mean potentially more bad front-page news.

Satisfied that I understand the severity of the situation, Nancy nods. "Tim, please walk us through your conclusions."

He takes out a huge stack of stapled papers, handing one out to everyone assembled. "We have just concluded our audit of the IT general controls at Parts Unlimited for all of the critical financial systems. It took a team of four people over eight weeks to create this consolidated report."

Holy crap. I lift the two-inch thick stack of papers in my hand. Where did they find a stapler this big?

It's a printed Excel spreadsheet, with twenty rows per page in tiny eight-point type. The last page is numbered page 189. "There must be a thousand issues here!" I say in disbelief.

"Unfortunately, yes," he responds, not entirely able to hide his smug satisfaction. "We found 952 IT general control deficiencies, of which sixteen are significant deficiencies and two are potential material weaknesses. Obviously, we're very alarmed. Given how soon the external audit starts, we need your remediation plan as soon as possible."

Wes is hunched over the table, one hand on his forehead, the other hand flipping through page after page. "What kind of horseshit is this?"

He holds up one page. "'Issue 127. Insecure Windows operating system MAX_SYN_COOKIE setting'? Is this a joke? In case you haven't heard, we've got a real business to run. Sorry if that interferes with this full-time audit employment racket you've got going on here."

Trust Wes to say what people are thinking but are too smart to actually say aloud.

Nancy responds gravely, "Unfortunately, at this point, the phase of control review and testing is over. What we require from you now is the 'management response letter.' You need to investigate each of these findings, confirm them, and then create a remediation plan. We'll review it and then present to the audit committee and the board of directors.

"Normally, you would have months to prepare your response letter and execute your remediation plan," she continues, suddenly looking apologetic. "Unfortunately, the way the audit testing calendar worked

out, we only have three weeks until the external auditors arrive. That's regrettable. We'll make sure to give IT more time in the next audit cycle. But this time around, we require your response by…"

She looks at her calendar. "One week from Monday, at the very latest. Do you think you can make it?"

Oh, shit.

That's just six working days away. We'll need half that time just to read the entire document.

Our auditors, who I've long believed are a force for justice and objectivity, are crapping on me, too?

I pick up the huge stack of papers again and look at a couple of random pages. There are many entries like Wes read, but others have references to inadequate security settings, presence of ghost login accounts, change control issues, and segregation of duties issues.

John flips his three-ring binder open and says officiously, "Bill, I brought up many of the same issues with Wes and your predecessor. They convinced the CIO to sign a management waiver, stating that he accepted the risk, and do nothing. Given that some of these are now repeat audit findings, I don't think we'll be able to talk our way out of it this time."

He turns to Nancy. "During the previous management regime, IT controls clearly weren't a priority, but now that all the security chickens are coming home to roost, I'm sure Bill will be more prudent."

Wes looks at John with contempt. I can't believe John is grandstanding in front of the auditors. It's times like this that make me wonder whose side he's really on.

Oblivious to Wes and me, John says to Nancy, "My department has been remediating some other controls, which I think we should be given credit for. For starters, we've completed the tokenization of the PII on our critical financial systems, so at least we dodged that bullet. That finding is now closed."

Nancy says dryly, "Interesting. The presence of PII is not in the scope of the SOX-404 audit, so from that perspective, focusing on the IT general controls might have been a better use of time."

Wait. John's urgent tokenization change was for nothing?

If that's true, John and I need to talk. Later.

I say slowly, "Nancy, I genuinely don't know what we can get to you

by Friday. We're buried in recovery work and are scrambling to support the upcoming Phoenix rollout. Which of these findings are the most important for us to respond to?"

Nancy nods to Tim, who says, "Certainly. The first issue is the potential material weakness, which is outlined on page seven. This finding states that an unauthorized or untested change to an application supporting financial reporting could have been put into production. This could potentially result in an undetected material error, due to fraud or otherwise. Management does not have any control that would prevent or detect such a change.

"Furthermore, your group was also unable to produce any change management meeting minutes, which is supposed to meet weekly, according to your policy."

I try not wince visibly, recalling that no one even showed up at the CAB meeting yesterday, and during the payroll incident, we were so oblivious to John's tokenization change that we ended up bricking the SAN.

If we were clueless about those changes, I sincerely doubt that we'd notice if someone disabled a control that would enable a minor, say, $100 million fraudulent transaction.

"Really? That's unbelievable! I'll look into that." I say with what I hope is the right amount of surprise and moral outrage. After I pretend to take detailed notes on my clipboard, circling and underlining random words, I nod, prompting Tim to continue.

"Next, we found numerous instances where developers have administrative access to production applications and databases. This violates the required segregation of duty required to prevent risk for fraud."

I look over to John. "Really? You don't say. Developers making changes to an application without an approved change order? That certainly sounds like a security risk. What would happen if someone coerced a developer, say Max, into doing something unauthorized? We've go to do something about that, right, John?"

John turns bright red, but says politely, "Yes, of course. I agree and would be happy to help."

Tim says, "Good. Let's move onto the sixteen significant deficiencies."

A half hour later, Tim is still droning on. I stare glumly at the huge stack of findings. Most of these issues are just like the huge, useless

reports we get from Information Security, which is another reason why John has such a bad reputation.

It's the never-ending hamster wheel of pain: Information Security fills up people's inboxes with never-ending lists of critical security remediation work, quarter after quarter.

When Tim finally finishes, John volunteers, "We must get these vulnerable systems patched. My team has a lot of experience patching systems, if you require assistance. These audit findings are an awesome opportunity to close some big security holes."

"Look, both of you guys have no idea what you're asking for!" Wes says to John and Tim, clearly exasperated. "Some of the servers that those manufacturing ERP systems run on are over twenty years old. Half the company will grind to a halt if they go down, and the vendor went out of business decades ago! These things are so fragile that if you even look at them at the wrong time of day, they'll crash and require all sorts of voodoo to get them to successfully reboot. They'll never survive the changes you're proposing!"

He leans over the table, putting his finger in John's face. "You want to patch it yourself, fine. But I want a signed piece of paper from you saying that if you push the button and the entire business grinds to a halt, you'll fly around and grovel to all the plant managers, explaining to them why they didn't hit their production targets. Deal?"

My eyes widen with amazement when John actually leans forward into Wes' finger and says angrily, "Oh, yeah? How about when we're on the front page of the news because we lost consumer data that we're responsible for protecting? You'll personally apologize to the thousands or millions of families whose data are now being sold by the Russian Mafia?"

I say, "Settle down, everyone. We all want to do what's right for the company. The trick is figuring out what we have time to do and what systems can actually be patched."

I look at the stack of papers. Wes, Patty, and I can assign people the task of investigating each issue, but who will actually do the work? We're already buried with Phoenix, and I fear that this new massive project might be the straw that breaks the camel's back.

I say to Nancy, "I'll get with my team right away, and we'll come up with a plan. I can't promise you that we'll have our response letter

completed by then, but I can promise you that we'll get you everything we can. Will that be adequate?"

"Quite so," Nancy says amicably. "Going through the preliminary audit findings and identifying next steps were the only objectives for this meeting."

As the meeting adjourns, I ask Wes to stay behind.

Noticing this, John remains behind, as well. "This is a disaster. All my objectives and bonuses are tied to getting a clean compliance report for the SOX-404 and PCI audits. I'm going to fail because you Ops guys can't get your shit together!"

"Join the club," I say.

To get him off my back, I say, "Sarah and Steve decided to move up the Phoenix deployment date to next Friday. They want to skip all the security reviews. You probably should talk to Chris and Sarah right away."

Predictably, John swears and storms out, slamming the door behind him.

Exhausted, I lean back in my chair and say to Wes, "This is just not our week."

Wes laughs humorlessly. "I told you that the pace of things around here would make your head explode."

I gesture at the audit findings. "We're supposed to protect all our key resources for Phoenix, but that's sucking in everybody. We don't have a bunch of people just sitting on the bench we can throw at the audit findings, right?"

Wes shakes his head, his face uncharacteristically pinched with tension.

He flips through his stack of papers again. "We're definitely going to need to bring the technology leads into this. But as you said, they're already assigned to the Phoenix team. Should we reassign them here?"

I honestly don't know. Wes stares at one of the pages for a moment. "By the way, I think a bunch of these will require Brent."

"Oh, for chrissakes." I mutter. "Brent. Brent, Brent, Brent! Can't we do anything without him? Look at us! We're trying to have a management discussion about commitments and resources, and all we do is talk about one guy! I don't care how talented he is. If you're telling me

that our organization can't do anything without him, we've got a big problem."

Wes shrugs, slightly embarrassed. "He's undoubtedly one of our best guys. He's really smart, and he knows a lot about almost everything we have in this shop. He's one of the few people who really understand how all the applications talk together at an enterprise level. Heck, the guy may know more about how this company works than I do."

"You're a senior manager. This should be as unacceptable to you as it is to me!" I say firmly. "How many more Brents do you need? One, ten, or a hundred? I'm going to need Steve to prioritize all this work. What I need from you is what resources we need. If I ask Steve for more resources, I don't want to have to crawl back, begging for more later."

He rolls his eyes. "Look, I'll tell you right now what's going to happen. We'll go to management and present our case. Not only will they say no, they'll cut our budget by another five percent. That's what they've done for the past five years. In the meantime, everyone will continue to want everything at the same time, and keep adding to our list of things to do."

Exasperated, he continues, "And just so you know, I have tried to hire more Brents. Because I never got the budget, I eliminated a bunch of positions just so I could hire four more very senior engineers at the same level of experience as Brent. And you know what happened?"

I merely raise my eyebrows.

Wes says, "Half quit within a year, and I'm not getting anywhere near the productivity I need from the ones who stayed. Although I don't have data to prove it, I'm guessing Brent is even more behind than ever. He complains that he had to spend a bunch of time training and helping the new guys, and is now stretched thinner than ever. And he's still in the middle of everything."

I respond, "You said that people 'add stuff to our list.' What does the list look like right now? Where can I get a copy? Who owns the list?"

Wes replies slowly, "Well, there are the business projects and the various IT infrastructure projects. But a lot of the commitments just aren't written down."

"How many business projects? How many infrastructure projects?" I ask.

Wes shakes his head. "I don't know offhand. I can get the list of business projects from Kirsten, but I'm not sure if anyone knows the

answer to your second question. Those don't go through the Project Management Office."

I have a sinking feeling in the pit of my stomach. How can we manage production if we don't know what the demand, priorities, status of work in process, and resource availability are? Suddenly, I'm kicking myself that I didn't ask these questions on my first day.

Finally, I'm thinking like a manager.

I call Patty. "Wes and I just got hammered by audit and they need a response one week from Monday. I need your help to figure what all our work commitments are, so I can have an intelligent discussion with Steve about resourcing. Can you talk?"

She says, "That's right up my alley. Come on over."

After Wes briefs Patty on the implications of the mammoth audit report that he thumped down on the table, she whistles.

"You know, I really wish you were at that meeting with the auditors," I say. "Most of the biggest issues were around the absence of a functional change management process. I think you could end up being the auditors' best friend."

"Auditors have friends?" she laughs.

"I need you to help Wes estimate the work to fix the audit findings by Monday," I say. "But right now, let's talk about a higher level issue. I'm trying to get the list of what all our commitments to the organization are. How big is that list and how do things get on it?"

After hearing what Wes told me, Patty replies, "Wes is right. Kirsten owns the official business project list, almost all of which have something that we're on the hook for. We have our own IT Operations projects, which are typically managed by the technology budget owner—there is no centralized list of those projects."

Patty continues, "We also have all the calls going into the service desk, whether it's requests for something new or asking to fix something. But that list will be incomplete, too, because so many people in the business just go their favorite IT person. All that work is completely off the books."

I ask slowly, "So, you're saying that we have no idea what the list of our commitments are? Really?"

Wes says defensively, "Until now, no one ever asked. We've always hired smart people and tasked them with certain areas of responsibility.

We've never had to manage things beyond that."

"Well, we need to start. We can't make new commitments to other people when we don't even know what are commitments are now!" I say. "At the very least, get me the work estimate to fix the audit findings. Then for each of *those* resources, tell me what their *other* commitments are that we're going to be pulling them off of."

Thinking for a moment, I add, "For that matter, do the same thing for every person assigned to Phoenix. I'm guessing we're overloaded, so I want to know by how much. I want to proactively tell people whose projects have been bumped, so they're not surprised when we don't deliver what we promised."

Both Wes and Patty look surprised. Wes speaks up first, "But… but we'd have to talk with almost everyone! Patty may have fun grilling people on what changes they're making, but we can't go around wasting the time of our best people. They've got real work to do!"

"Yes, I know they have real work to do," I say adamantly. "I merely want a one-line description about what all that work is and how long they think it will take!"

Realizing how this might come across, I add, "Make sure you tell people that we're doing this so we can get more resources. I don't want anyone thinking that we're outsourcing or firing anyone, okay?"

Patty nods. "We should have done this a long time ago. We bump up the priorities of things all the time, but we never really know what just got bumped down. That is, until someone screams at us, demanding to know why we haven't delivered something."

She types on her laptop. "You just want a list of organizational commitments for our key resources, with a one-liner on what they're working on and how long it will take. We'll start with all Phoenix and audit remediation resources first, but will eventually cover the entire IT Operations organization. Do I have it right?"

I smile, genuinely happy that Patty has framed it so succinctly. I know she's going to do a great job. "Exactly. Bonus points if you and Wes can determine which resources are most over-utilized and how many new resources we need. That would be the basis of an ask to Steve for more staffing."

Patty says to Wes, "This should be pretty straightforward. We can put together fifteen-minute interviews, pull data from our service desk and

ticketing system, get Kirsten's project list…"

Surprisingly, Wes agrees, adding, "We could also look in our budgeting tools to see how we've coded personnel and hardware requests."

I stand up. "Great thinking, guys. Get a meeting set up for us to go over what you find, no later than Friday. I want to have a meeting with Steve on Monday, armed with some real data."

She gives me the thumbs-up. Now we're getting somewhere.

CHAPTER 6

- *Friday, September 5*

In another one of the endless Phoenix status meetings, I realize that the developers are even more behind than we feared. As Wes had predicted, more and more work is being deferred to the next release, including almost all of the testing.

This means that we'll be the ones finding the problems when they blow up in production, instead of the Quality Assurance (QA) Department.

Great.

During a lull in the discussion, I look down at my phone, and see an e-mail from Patty. She wants to meet about resourcing, promising some eye-opening surprises.

I open the attached spreadsheet, seeing an encouraging level of detail, but on my minuscule phone screen, I can't make heads or tails of it. I reply to Patty that I'm on the way and ask her to have Wes meet me there.

When I arrive, I'm surprised to see that Wes has set up a projector, displaying a spreadsheet on the wall. I'm excited that we're meeting to analyze the situation, instead of just reacting to the daily fires.

I grab a seat. "Okay, whatcha got for me?"

Wes starts. "Patty did a great job putting this together. What we found was—well, it was interesting."

Patty explains, "We did our interviews, collected the data, and then did our analysis. Right now, these numbers are only for our key resources. We're already seeing something troubling."

She points at a row in the spreadsheet. "First, we have a lot of projects. Kirsten says she's officially managing about thirty-five major business projects, each of which we have commitments to. Internal to IT Operations, we've already identified over seventy projects, and that number keeps growing with each person we interview."

"Wait," I say, genuinely startled, sitting upright in my chair. "We have 150 IT Operations people, right? If you've already found over 105 projects already, that's 1.5 people per project. Doesn't that seem like a lot to you?"

Wes replies, "Totally. And we know that the project count is low. So by the end, it'll probably be more like one person per project. That's insane."

I ask, "How big are these internal projects?"

Wes switches tabs on the spreadsheet, showing the list of projects they've inventoried, along with the estimated number of man-weeks. "Consolidate and upgrade e-mail server," "Upgrade thirty-five instances of Oracle databases," "Install supported Lemming database server," "Virtualize and migrate primary business applications," and so on.

I groan. While some projects are small, most seem like major undertakings, estimated at three man-years or more.

When Patty sees the expression on my face, she says, "That was my reaction, too. We're on the hook for a huge number of projects. So, let's look at what our capacity is. This is a little harder, since we can't just assign random people to any given project."

She continues, "When we looked at who was assigned to each project and what their other commitments and availability were, here's what we found."

When Wes flips to another spreadsheet tab, my heart drops.

"Grim, huh?" says Wes. "Most of our resources are going to Phoenix. And look at the next line: Compliance is the next largest project. And even if we only worked on compliance, it would consume most of our key resources for an entire year! And that includes Brent, by the way."

Incredulous, I say, "You're kidding. If we put all our projects on hold except for the audit findings, our key resources would be tied up for an

entire year?"

"Yep," Patty says, nodding. "It's hard to believe, but it just shows you how much work is in that stack of audit findings."

I look down at the table, speechless.

If someone had shown me these figures during my first conversation with Steve, I would have run from the room, screaming like a little boy.

It's not too late, I think, smiling at the image.

With practiced calm, I say, "Okay, knowing is always better than not knowing. Keep going."

Wes looks back at the spreadsheet. "The third largest item is incident and break-fix work. Right now, it's probably consuming seventy-five percent of our staff's time. And because these often involve critical business systems, incidents will take priority over everything else, including Phoenix and fixing audit findings.

"By the way, did you know that yesterday, when we were talking with Brent, we had to reschedule the interview twice because he had to go help fix an outage? So there we were interrupting him from Phoenix work, only to be interrupted by an outage!" he says, laughing.

I start to laugh, but then stop abruptly. "Wait. What outage? Why didn't I didn't hear about it? We can't keep running our organization like this!"

"Well, it was another SAN issue, but nothing critical," Wes replies. "A drive went bad a couple of months ago, so the SAN was running with no redundancy. When another drive failed, the entire volume went down. Brent had to help restore some of the databases when we got the SAN back up."

Exasperated, I shout, "Goddamnit, Wes. That was completely preventable! Get one of your junior guys to look at the logs every day for drive failures. Maybe even have him visually inspect the drives and count all the goddamned blinking lights. It's called preventive maintenance for a reason! We need Brent on Phoenix, not piddly shit like this!"

Wes says defensively, "Hey, it's actually a little more complicated than that. We put in the order for replacement drives, but they've been stuck in Procurement for weeks. We had to get one of our vendors to give it to us on credit. This wasn't our fault."

I lose my temper. "Wes, listen to me. I DON'T CARE! I don't care about goddamned Procurement. I don't care how nice your goddamned

vendors are. I need you to do your damned job, and make sure this doesn't happen again!"

I take a deep breath. I realize my frustration is not because of the drive failure, but because we're continually unable to stay focused on the things that matter most to the company.

"Look, let's put this aside for now," I say, looking back at Wes. "I'm serious about getting someone to look at that SAN daily, though. Set up a meeting sometime next week for you, me, and Patty to get to the bottom of these outages. We've got to figure out how to bring down the amount of break-fix work so we can project work done. If we can't Phoenix work done, it's jeopardizing the company."

"Yeah, I got it. I'll try to get it in before the Phoenix rollout." Wes says, nodding sullenly. "And I'll get on that SAN issue this afternoon."

"Okay, back to the spreadsheet," I say.

Patty observes glumly, "You're right. The one consistent theme in the interviews was that everyone struggles to get their project work done. Even when they do have time, they struggle to prioritize all their commitments. People in the business constantly ask our staff to do things for them. Especially Marketing."

"Sarah?" I ask.

"Sure, but it's not only her," she replies. "Practically every executive in the company is guilty of going directly to their favorite IT person, either asking a favor or pressuring them to get something done."

"How do we change the game here and get resourced to do all these projects properly?" I ask. "What should we be asking Steve for?"

Wes scrolls down his spreadsheet. "Based on our rough numbers, we'll probably need to hire seven people: three database administrators, two server engineers, one network engineer, and one virtualization engineer. Of course, you know that it'll take time to find these people and then another six to twelve months before they're fully productive."

Of course, I knew that new hires aren't productive right away. But it was still dispiriting to hear Wes point out that real help was still a long way off, even if Steve approved the headcount.

Later that day, as I'm walking to our second CAB meeting, I feel hopeful. If we can get our old change process going, we might be able to quickly

resolve one of the largest audit issues and get some operational wins, as well.

I'm also pleased at how well Patty and Wes are working together.

As I near the conference room, I hear loud voices arguing.

"—then Patty got that engineer fired for doing his job. He was one of our best networking people. That wasn't your call to make!"

No mistake. That's Wes hollering. Then I hear Patty reply heatedly, "What? You signed off on that termination! Why is this suddenly my fault?"

I knew it was too good to be true.

I then hear John say, "That was the right call. We're going into our third year of a repeat audit finding around change controls. That goes in front of the audit committee. Next time around, it probably won't be just an engineer getting fired, if you get my drift."

Wait. Who invited John to this meeting?

Before John can make things any worse, I quickly step through the door and say cheerfully, "Good afternoon, everyone! Are we ready to review some changes?"

Fourteen people turn to look at me. Most of the technical leads from the various groups are sitting at the table. Wes is standing up behind his chair, fuming, while Patty is standing in the front of the room, arms crossed.

John sits in the back of the room, with his three-ring binder open, very much an unwanted guest.

Using both hands, I set down my antique laptop. It hits the table with a thud and a clatter as the battery falls off, the tape no longer holding it in place, and then I hear a scratching sound as the disk drive spins down.

Wes' angry expression disappears momentarily. "Wow, boss, nice gear. What is that, a Kaypro II? I haven't seen one of those in about thirty years. Let me know if you need an 8-inch floppy to load CP/M on it—I've got one in my attic at home."

Two of the engineers snicker and point. I smile briefly at Wes, grateful for the comic relief.

Remaining standing, I say to everyone, "Let me tell you why I assembled all of you here. Given the urgency of Phoenix, you can bet your ass that I wouldn't waste your time if I didn't think this was important."

I continue, "First, the events that led to the SAN and payroll failure

on Tuesday must not happen again. What started off as a medium-sized payroll failure snowballed into a massive friendly-fire SAN incident. Why? Because we are not talking to one another about what changes we're planning or implementing. This is not acceptable."

"Second, John is right. We spent yesterday morning with our auditors, discussing a bunch of deficiencies they found," I continue. "Dick Landry is already crapping bricks because it could impact our quarterly financial statements. We need to tighten up our change controls, and as managers and technical leads, we must figure out how we can create a sustainable process that will prevent friendly-fire incidents and get the auditors off our back, while still being able to get work done. We are not leaving this room until we've created a plan to get there. Understood?"

When I'm satisfied that everyone has been properly cowed, I open it up for discussion. "So what's preventing us from getting there?"

One of the technical leads quickly says, "I'll start. That change management tool is impossible to use. There's a million mandatory fields and most of the time, the drop down boxes for the 'applications affected' don't even have what I need. It's why I've stopped even putting in change requests."

Another lead hollers out, "He's not kidding. To follow Patty's rules, I have to manually type in hundreds of server names in one of the text boxes. Most of the time, there's not enough room in the field! A hundred server names are supposed to fit in a sixty-four-character text box? What idiot built that form?"

Again, more unkind laughter.

Patty is bright red. She shouts, "We need to use drop-down boxes so we can maintain data integrity! And I'd love to keep the application list up-to-date, but I don't have the resources. Who's going to keep the application catalog and change management database current? You think it just magically updates itself?"

"It's not just the tool, Patty. It's the entire damned process," Wes asserts. "When my guys put in change requests, they have to wait a lifetime to get approvals, let alone get on the schedule. We have the business breathing down our neck to get crap done. We can't wait for you to hem and haw, complaining that we didn't fill out the form right."

Patty snaps, "That's crap, and you know it. Your people routinely break the rules. Like, say, when everyone marks all their change requests as an

'urgent' or 'emergency change'. That field is only for actual emergencies!"

Wes retorts, "We have to do that, because marking them urgent is the only way to get your team to look at it! Who can wait three weeks for an approval?"

One of the lead engineers suggests, "Maybe we make another field called 'Extremely urgent?'"

I wait until the uproar quiets down. At this rate, we're getting nowhere fast. Thinking furiously, I finally say, "Let's take a ten-minute break."

When we reconvene the meeting, I say, "We are not leaving this meeting without a list of authorized and scheduled changes that we're implementing in the next thirty days.

"As you can see, my assistant has brought in a pile of blank index cards. I want each group to write down every change they're planning, one change per index card. I want three pieces of information: who is planning the change, the system being changed, and a one-sentence summary.

"I've drawn a calendar on the whiteboard where we will eventually post approved changes according to their scheduled implementation," I continue. "Those are the rules. Short and simple."

Wes picks up a pack of cards, looking at them dubiously. "Really? Paper cards, in this day and age? How about we use that laptop of yours, which probably even predates paper?"

Everyone laughs, but not Patty. She looks angry, obviously not pleased with the direction things are going.

"This isn't like any change management process I've ever seen," John says. "But I'll put my changes on the board, like the upcoming firewall updates and monitoring changes that're scheduled for the next couple of days."

Surprisingly, John's willingness to jump in inspires others, who begin writing their planned changes on their cards.

Finally, Wes says, "Okay, let's try it. Anything is better than using that damned change management tool."

One of the leads holds up a handful of cards. "I'm done with all the database changes we're planning to make."

When I nod for him to proceed, he quickly reads one of the cards: "Execute the vendor-recommended database maintenance script on

Octave server XZ577 to fix retail store POS performance issues. This affects the order entry database and applications. We'd like to do this next Friday evening at 8:30 PM."

I nod, pleased with the clarity of his proposed change. But Wes says, "That's not a change! That's just running a database script. If you were changing the script, then we'd have something to talk about. Next."

The lead replies quickly, "No, it's definitely a change. It temporarily changes some database settings, and we don't know what production impact it could have. To me, it's just as risky as a database configuration change."

Is it a change or not? I can see both sides of the argument.

After thirty minutes of arguing, it's still not clear that we the definition of what a "change" should be.

Was rebooting a server a change? Yes, because we don't want anyone rebooting servers willy-nilly, especially if it's running a critical service.

How about turning off a server? Yes, for the same reason.

How about turning on a server? No, we all thought. That is, until someone came up with the example of turning on a duplicate DHCP server, which screwed up the entire enterprise network for twenty-four hours.

A half hour later, we finally write on the whiteboard: "a 'change' is any activity that is physical, logical, or virtual to applications, databases, operating systems, networks, or hardware that could impact services being delivered."

I look at my watch, alarmed that we've been in the room for nearly ninety minutes, and we still haven't even approved our first change. I push us to move faster, but at the end of our two-hour meeting, we've only posted five changes on the whiteboard.

Surprisingly, no one else seems frustrated except me. Everyone is vigorously engaged in the discussion, even Patty. Everyone is discussing risks of the proposed changes, even discovering that one change wasn't necessary.

Encouraged, I say, "We'll pick this up on Monday. Get all your cards to Patty as soon as you can. Patty, what's the best way for us to process all the cards?"

She says tersely, "I'll set up a basket later today. In the meantime, pile them up at the front of the table."

When we adjourn, several people tell me on their way out, "great meeting" and "I wish we had more time to discuss changes," and "I'm looking forward to Monday."

Only Patty has remained behind, arms crossed. "We spent a lot of blood, sweat, and tears creating our old change management policy, and everyone still blew it off. What makes you think this will be any different?"

I shrug. "I don't know. But we'll keep trying things until we have a system that works, and I'm going to make sure everyone keeps helping us get there. It's not just to satisfy the audit findings. We need some way to plan, communicate, and make our changes safely. I can guarantee you that if we don't change the way we work, I'll be soon out of a job."

Pointing at her old policy document, she says, "We shouldn't just throw all this work out the window. We spent weeks designing it and hundreds of thousands of dollars with consultants, changing our tools around."

She tears up slightly. I remind myself of how long she's been trying to get this process integrated into the organization.

"I know that there was a lot of good work put into all this process," I say sympathetically. "Let's face it, though. No one was actually following it, as the auditors pointed out. We also know that people were gaming the system, just trying to get their work done."

I say sincerely, "We may be starting over, but we need all your experience and skills to make this work. It's still your process, and I know this is absolutely critical to our success."

"Okay," she says, sighing in resignation. "I suppose I care more about our survival more than whether we use our old process or not."

Her expression changes. "How about I write up the outputs of the meeting and the new instructions for submitting requests for changes?"

Later that afternoon, I'm back in the Phoenix war room when Patty calls. I run out to the hallway. "What's up?"

She sounds stressed. "We've got a problem. I was expecting we'd have fifty changes for us to review next week. But we're already up to 243 submitted changes. I keep getting e-mails from people saying to expect more cards over the weekend… I think we're looking at over four

hundred changes being made next week!"

Holy crap. Four hundred? How many of these four hundred changes are high risk, potentially affecting Phoenix, the payroll application or worse?

I suddenly remember Rangemaster duty in the Marines. As Rangemaster, I was responsible for the safety of everyone on the firing range. I have a horrifying vision of a mob of four hundred unsupervised eighteen-year-olds jumping out of trucks, running to the firing range, firing their rifles into the air, hooting and hollering…

"Umm, at least people are following the process," I say, laughing nervously.

I hear her laugh. "With all the change requests coming in, how are we going to them all authorized by Monday? Should we put a temporary hold on changes until we get them all approved?"

"Absolutely not," I say immediately. "The best way to kill everyone's enthusiasm and support is to prevent them from doing what they need to do. I doubt we'll get a second chance to get this right.

"Send out an e-mail telling everyone submit any change for next week by Monday. Monday changes will not need to be authorized but changes for the remainder of the week will. No exceptions."

I can hear Patty typing over the phone. "Got it. I'll probably need to have some of my people help organize all of the change cards over the weekend. Frankly, I'm stunned by how many changes there are."

So am I.

"Excellent," I say, leaving my concerns unvoiced.

CHAPTER 7

• *Friday, September 5*

When I get back to my desk, I'm looking for the Advil I usually keep on my desk when my cell phone rings. "Palmer here," I say, rummaging through my drawers.

"Hi, Bill. It's Stacy—Steve's assistant. I'm glad I caught you. There's a potential new board member in town named Erik Reid who needs to talk with all the IT executives. He's wondering if you're available for an hour right now."

"Hang on a sec while I pull up my calendar," I reply.

The screen resolution on this old laptop is so low that the weekly view is unusable. I switch to the daily view, and the screen goes blank as the laptop chatters and whirs.

I give up waiting and say earnestly, "Look, I know this is important, but can't this wait until Monday? You would not believe the day I'm having."

She replies quickly, "I wish it could wait, but he's only in town today. And from what I've seen, Bob Strauss, you know, the new company chairman, and Steve are in a tizzy because they're worried that Erik may not accept our offer to join the board. He's apparently some technology hotshot, and Bob and Steve managed to get him in town to woo him. He

insists on meeting the IT leadership team before he leaves."

"Okay, I'm in," I say, suppressing a sigh.

"Good. We have him set up in the conference room right by me. Come on over—there's a great coffee and doughnut spread here."

I laugh. "Well, that's the first good news I've had all day. I'm on my way."

As I walk into the conference room in Building 2, I wave to Stacy, pondering the strange world I've been pulled into. I'm not used to being thrown into the middle of board politics.

As promised, by the window is a large cart with four types of coffee and six boxes of Vandal Doughnuts, a place in town so famous, there's a long line at almost all hours of the day.

A man in wrinkled khaki pants and an untucked denim button-down shirt is kneeling in front of the cart, unpacking the doughnuts onto two platters. I had no idea Vandal Doughnuts delivered.

I pick up a cup and start filling it with coffee, eyeing all the doughnuts. I say, "You know, my wife and I are huge fans of you guys. Back when we were dating, almost every Friday night we'd wait in line for twenty minutes to get our fix. Now that we have kids, she just sends me out to get them for her. Maybe I'll take one home for her tonight."

I grab a huge chocolate doughnut covered with Froot Loops, as well as a giant frosted glazed doughnut with bacon on it and three more that look tasty.

The deliveryman stands up and looks at me, smiling. "Yeah, I can see why. I'm really enjoying these doughnuts. I've never had anything like them before. I've probably eaten five since I've been here. Not great for the low-carb diet I'm on, though…"

Holding out his hand, he says, "I'm Erik."

Holy crap.

I look down. In one hand I have a cup of coffee, and in the other hand I'm holding an overflowing plate.

"Oh, jeez," I say hurriedly. I put everything on the table behind me, turning around again to shake his hand. "Good to meet you. I'm Bill—Bill Palmer."

I look him over again. He has a mustache, is around six feet tall and a bit overweight, and has long graying hair that touches his shoulders. When standing, he looks even more like someone from a delivery

company than a potential board member, let alone some "technology hotshot."

Taking another look at him, I correct myself—I'm pretty sure a delivery person would have less-wrinkled clothes.

"No worries," he says cheerily, grabbing another doughnut from the tray and gesturing toward the table. "Have a seat. I was hoping to talk with each of the IT leaders while I was in town. Of course, I had to talk with Steve and—umm—what's your CFO's name? Darren? Dale? Whatever—They seemed like nice enough fellows. Maybe a little blind, but…"

He gestures dismissively. "I talked with your Development guy, too. Umm, Cary? Calvin? And, I'll be talking with your Security guy next, Jimmy, and your retailing person, Sylvia."

I try to hide my pained expression as he's managed to mangle everyone's name.

"I see… And what have your impressions been so far?" I ask carefully.

He stops chewing and brushes some crumbs off his mustache, pausing to think. "It looks like you're in a world of hurt. IT Operations seems to have lodged itself in every major flow of work, including the top company project. It has all the executives hopping mad and they're turning the screws on your Development guy to do whatever it takes to get it into production."

He looks me in the eye. "You're having chronic IT availability issues, causing company executives to be splashed on the front-page news. And now, audit is hot on your tail, meaning more possible front-page news, and maybe even an adverse footnote on the quarterly financial statement. And anyone who knows anything about Phoenix knows that there's a lot more bad news to come on that front…"

As he's talking, I feel my face flush red, whether in anger or embarrassment I'm not sure.

"Things don't look so good for you, pal," he says. "At least not to a prospective board member, who's supposed to oversee and assess your performance."

I purse my lips, resisting the urge to say something that sounds defensive. I say neutrally, "Steve asked me to take this job three days ago. Even though I kept saying no, he eventually convinced me to accept the position. There's sure been a lot of surprises…"

He looks at me for a moment, and then guffaws. "Yeah, I'll bet!" he says, disarmingly. "Ha-ha! Surprises. So, what's your game plan for righting the ship?"

I look up for a moment, trying to figure out how to describe the few corrective actions I've put in place after this week. I reply, "Honestly, I'm still trying to get some situational awareness. Mostly, I'm being whiplashed from one emergency to another. I do know that we need more rigor and discipline in how we work. I'm trying to figure out what processes we rely on to get work done around here. Based on what I've seen, I know we need to improve them so we stop shooting ourselves in the foot."

I think for a moment. "That's just to get us out of firefighting mode. I'm still trying to figure out how to resource an audit remediation project that just fell out of the sky. Based on what I've seen, we're seriously behind on our commitments. We're obviously going to need more people or get a lot more efficient to get all our committed work done."

Erik frowns. "'Rigor and discipline,' huh? I'm guessing you were a non-commissioned officer in the military. An E-6. No, you're too young. An E-5, right?"

I blink in surprise. "That's right. E-5, US Marine Corp. How did you know?"

"Lucky guess," he says glibly. "For one thing, you sure don't look like a chemical engineer or an auditor."

"What?" I ask.

"You're right that you can't achieve the strategic until you've mastered the tactical," he says, ignoring my question. "But what worked for you in the Marines will never work here, considering how they run this circus. Instead of one general in your chain of command, you've got ten generals calling the shots here, and all of them have a direct line to each and every private in your company."

I say slowly, "Wait. You're saying rigor and discipline don't matter?"

"Of course they matter," he says sternly. "But you have a much bigger problem, and it has nothing to do with your argle-bargle of 'efficiencies' and 'process.' Your problem right now is that you obviously don't actually know what 'work' is."

I stare at him.

Who is this buffoon? For a moment, I wonder whether I can assign

Wes or Patty to deal with this guy, but Steve obviously wanted me to handle this personally.

"I know what work is," I say slowly. "We do it every day. If we can't keep the lights on and finish the work that the business requires, I'm out of a job."

"What then, exactly, is your definition of 'work?'" he asks, with a genuinely curious expression on his face.

"Well, I can tell you that Steve has stated over and over to me in no uncertain terms that we need to get Phoenix out the door. That qualifies as work in my mind."

He looks up, appearing to have a conversation with himself. "Yes, that's certainly one type of work. But you're still missing the three other types of work that IT Operations is responsible for. To me, that's nowhere near the level of understanding of work you need in order to fix your problems around project deliverables, outages, and compliance."

He stands up. "Grab your stuff. We're going for a ride."

Confused and annoyed, I look at my watch. It's 4:17 PM. I have too much to do to waste much more time with this guy.

Then he's gone. I look out in the hallway, but he's not there, either. I look at Stacy questioningly, and she points toward the elevators. I run to catch up with him.

He's walked into an elevator that just opened. When he turns around, he holds the door open for me. "You probably don't even see when work is committed to your organization. And if you can't see it, you can't manage it—let alone organize it, sequence it, and have any assurance that your resources can complete it."

I frown, recalling my last meeting with Wes and Patty when they struggled to come up with the list of all our commitments to the organization. I say, "What is this? Some kind of intelligence test?"

"Yes, you could say that," he replies. "But don't worry. It's not just you. Steve has to pass his intelligence test, too. And for that matter, Dick, as well."

I follow him to his blue subcompact rental car and we drive five minutes to MRP-8, one of our manufacturing plants. It's enormous, probably four times bigger than my building, but this one is in immaculate condition, with some obvious recent renovations and add-ons.

A security guard in her late fifties greets us, "Good afternoon, Dr.

Reid. How nice to see you! How are you doing? It's been a long time."

Erik shakes her hand warmly, replying with a wink, "Great seeing you again, Dorothy. We're just here to get a birds-eye view of the plant floor. Can we still get on the catwalk?"

She replies with a flirtatious smile, "It's closed to most people, but for you, I think we can make an exception."

I look at Erik suspiciously. He supposedly couldn't get anyone's name right, and yet he apparently remembers the name of some security guard from years past. And no one ever mentioned anything about a *Dr. Reid*.

After climbing five flights of stairs, we're standing on a catwalk that overlooks the entire plant floor, looking like it goes on for at least two city blocks in every direction.

"Look down there," he says. "You can see loading docks on each side of the building. Raw materials are brought in on this side, and the finished goods leave out the other. Orders come off that printer down there. If you stand here long enough, you can actually see all the WIP, that's 'work in process' or 'inventory' for plant newbies, make its way toward the other side of the plant floor, where it's shipped to customers as finished goods."

"For decades at this plant," he continues, "there were piles of inventory everywhere. In many places, it was piled as high as you could stack them using those big forklifts over there. On some days, you couldn't even see the other side of the building. In hindsight, we now know that WIP is one of the root causes for chronic due-date problems, quality issues, and expediters having to re-juggle priorities every day. It's amazing that this business didn't go under as a result."

He gestures broadly with both arms outstretched, "In the 1980s, this plant was the beneficiary of three incredible scientifically-grounded management movements. You've probably heard of them: the Theory of Constraints, Lean production or the Toyota Production System, and Total Quality Management. Although each movement started in different places, they all agree on one thing: WIP is the silent killer. Therefore, one of the most critical mechanisms in the management of any plant is job and materials release. Without it, you can't control WIP."

He points at a desk near the loading docks closest to us. "See that desk over there?"

I nod but also look pointedly at my watch. 4:45 PM

Oblivious to my impatience, he says, "Let me tell you a story. Decades ago, there used to be a guy named Mark. He was the supervisor for that first work center, right down there by that desk. Those racks hold the folders for incoming jobs. Isn't it amazing that those folders look exactly like they did back then?"

"At any rate," he continues, "one day I see Mark picking up a folder to start some job. I ask him, 'On what basis did you choose that job, versus any of the others?'

"And you know what he tells me? He says, 'It's a job that requires this work center first. And we're open.'"

He shakes his head incredulously. "I could hardly believe it. I tell him, 'Your station is just the first of twenty operations. You don't factor the availability of any of the other nineteen stations in your decision?' And he replies, 'Well, no. This is the way I've done it for twenty years.'"

He laughs. "I suppose to him, it sounds like a reasonable way to pick which job to perform. He's keeping the first station busy, and it's similar to first-in, first-out scheduling. But of course, now everyone knows that you don't release work based on the availability of the first station. Instead, it should be based on the tempo of how quickly the bottleneck resource can consume the work."

I just stare at him blankly.

He continues, "Because of how Mark was releasing work, inventory kept piling up in front of our bottleneck, and jobs were never finished on time. Every day was an emergency. For years, we were awarded the 'best customer of the year' from our air freight shipment company, because we were overnighting thousands of pounds of finished goods to angry customers almost every week."

He pauses and then says emphatically, "Eliyahu M. Goldratt, who created the Theory of Constraints, showed us how any improvements made *anywhere besides the bottleneck* are an illusion. Astonishing, but true! Any improvement made after the bottleneck is useless, because it will always remain starved, waiting for work from the bottleneck. And any improvements made before the bottleneck merely results in more inventory piling up at the bottleneck."

He continues, "In our case, our bottleneck was a heat treat oven, just like in Goldratt's novel, *The Goal*. We also had paint-curing booths that later became constraints, too. By the time we froze the release of all new

jobs, you couldn't even see the bottleneck work centers because they were surrounded by huge piles of inventory. Even from up here!"

Despite myself, I laugh with him. It's obvious in hindsight, but I can imagine that to Mark, it was anything but obvious. "Look, thanks for the history lesson. But I learned most of this already in business school. I don't see how this could possibly be relevant to managing IT Operations. IT is not like running a factory."

"Oh, really?" he turns to me, frowning intensely. "Let me guess. You're going to say that IT is pure knowledge work, and so therefore, all your work is like that of an artisan. Therefore, there's no place for standardization, documented work procedures, and all that high-falutin' 'rigor and discipline' that you claimed to hold so near and dear."

I frown. I can't figure out if he's trying to convince me of something I already believe or trying to get me to accept an absurd conclusion.

"If you think IT Operations has nothing to learn from plant operations, you're wrong. Dead wrong," he says. "Your job as VP of IT Operations is to ensure the fast, predictable, and uninterrupted flow of planned work that delivers value to the business while minimizing the impact and disruption of unplanned work, so you can provide stable, predictable, and secure IT service."

Listening to him, I wonder if I should be writing this down.

He studies me closely. "Well, I can see that we're not ready to have this discussion. Until you gain a better understanding of what 'work' is, any conversation we have about controlling work will be totally lost on you. It would be like talking about acrobatics to someone who doesn't believe in gravity yet.

"Rest assured, though," he says, pointing at the job release desk, "in order to get to where you want to go, eventually you *will* need to figure out what your equivalent to that desk is. You must figure out how to control the release of work into IT Operations and, more importantly, ensure that your most constrained resources are doing only the work that serves the goal of the entire system, not just one silo.

"Once you figure this out, young Bill, you will be well on your way toward understanding the Three Ways," he says. "The First Way helps us understand how to create fast flow of work as it moves from Development into IT Operations, because that's what's between the business and the customer. The Second Way shows us how to shorten and

amplify feedback loops, so we can fix quality at the source and avoid rework. And the Third Way shows us how to create a culture that simultaneously fosters experimentation, learning from failure, and understanding that repetition and practice are the prerequisites to mastery."

Although he now sounds oddly like Master Shifu in the movie *Kung Fu Panda*, I'm listening intently. The need for rigor and discipline, and constantly practicing and honing our skills are important lessons I've kept with me from the Marines. The lives of my men depended upon it there, and my job depends upon it here. Creating that predictability is what I'm most intent on instilling in my IT Operations group.

Erik hands me a slip of paper with a phone number on it. "Remember, there are four types of work. You've named business project work as one. When you have the other three, give me a call."

He takes out his car keys from his pocket and asks, "Do you want a lift back to your office?"

It's 5:10 PM when I finally get back to my cubicle. I log back into my clunker laptop to reply to e-mails. But I can't concentrate.

The last hour with Erik was like being in a strange parallel universe. Or like being forced to watch a psychedelic movie made in a drug-induced haze.

What did Erik mean that there were four categories of work?

I think back to my meeting with Wes and Patty. Wes mentioned we have a separate list for IT infrastructure projects and business projects. Are infrastructure projects another type of work?

As I ponder this, an e-mail notification window pops up on my screen, indicating another e-mail expecting a response.

Are e-mails another type of work?

I doubt it. At the plant, Erik gestured to the entire plant floor. When he mentioned "work," he seemed to mean it at an organizational level not at the level of an individual contributor or manager.

I think about it some more. Then I shake my head and quickly e-mail Steve, letting them know that I connected with Erik. I'm certain that a decade from now, I'll be telling my friends about my brief encounter with the raving madman on the manufacturing plant floor.

I need to get moving. Page will be seriously annoyed if I come home

late on a Friday night. When I undock the laptop from the docking station, an incredibly loud alarm pierces the air.

"Holy crap!" I shout, realizing that the sound is coming from my laptop. Fumbling, I try to turn down the volume, to power it off, but nothing makes the sound stop.

Frantically, I flip the laptop over and try to take the battery out, but the tape keeps it attached. I grab a letter opener, finally managing to slash the tape and get the battery out.

The laptop finally goes silent.

CHAPTER 8

- *Monday, September 8*

I spent all weekend working on a PowerPoint slide deck for my meeting with Steve this morning. Despite all that work, I wish I could have done more to prepare.

I force myself to relax, visualizing having a healthy and vigorous business discussion with him, walking out with everything I ask for. I keep reminding myself how important this is for the company and my organization. Everyone worked so hard to prepare for this and now success or failure depends on how well I can communicate it all to Steve.

Stacy smiles when I arrive and says warmly, "Go on in. I'm sorry we could only get you thirty minutes."

I stop just inside the door, where Sarah is sitting with Steve at the table. Sarah is telling Steve, "—you did an amazing job telling the story of where we're going. These were some of the most skeptical analysts around, but they clearly got excited. You've also given them a reason for us to talk again when Phoenix goes live. They also seem pretty impressed with the Phoenix roadmap."

They're telling analysts about the Phoenix roadmap? With so many features being delayed to the next release, I question the wisdom of making insufficiently informed promises to the market.

Steve just nods and replies happily, "Let's see if it changes their impressions of us. Good job scheduling the call. Catch you later today for the next one."

Sarah gives me a smile and says, "Hey, Bill. You're up and at it early today, aren't you?"

Gritting my teeth, I just ignore her comment. "Good morning, everyone." Trying to show an interest, I say, "Sounds like you had a good call."

Sarah smiles even more broadly. "Yes, they're really excited about our vision and agree that it's going to be a real game changer for us. This is what we need to change how we're perceived by the broader market and Wall Street."

I look levelly at her, wondering whether these briefings that we give the outside world might be what is causing such pressure on Chris' team to release features so prematurely.

I grab a seat across from Steve. I can't quite turn my back on Sarah, but I do my best.

I don't want to give Steve my handouts until Sarah has left the room, but she continues to talk with Steve, recounting their meeting and how to change the talk track for their next analyst call.

As they talk, all I can think of is how she's eating into my time with Steve.

Eleven minutes later, Steve laughs at a joke from Sarah, and she finally leaves the office, closing the door behind her. Steve turns to me and says, "Sorry about going over—our next Phoenix analyst briefing is in twenty minutes. So, what's on your mind?"

"You've impressed upon me from the very beginning that I need to help maximize the probability of success of the Phoenix rollout," I start. "Based on my observations of the past week, we are stretched dangerously thin, to the point that I believe Phoenix is in considerable jeopardy.

"I've had my staff establish what our levels of demand and capacity truly are," I continue. "We've started to inventory everything we're being asked to do, regardless of how big or small. Based on the analysis so far, it's clear to me that the demand for IT work far exceeds our ability to deliver. I've asked them to make more visible what the pipeline of work looks like, so we can make more informed decisions about who should be working on what and when."

With as much gravitas as I can muster, I say, "One thing is very clear, though. We are definitely understaffed. There's no way that can deliver everything we've promised. Either we need to cut down the project list, or we've got to staff up."

Trying to replicate the reasoned and logical argument I've spent all weekend rehearsing, I continue, "The other big problem is that we have too many different projects competing for our attention. You've been consistent and clear that Phoenix is the most important, but we can't seem to keep resources dedicated to it. For instance, last Thursday, internal audit delivered to us a set of findings that we must investigate and assemble a response letter for in one week. Doing so will impact Phoenix."

I've been watching Steve as I talked, and so far, he's remained expressionless. I look at him calmly and ask, "What I'd like to get out of our meeting is an understanding of the relative priority of Phoenix versus the audit findings and to talk about the number of projects and how to adequately staff them."

In my mind, I've done a good job in being the competent and passionate manager who is dispassionately struggling to decide how to best serve the business, without making moral judgments.

Steve replies in an exasperated voice, "What kind of bullshit prioritization question is this? If I went to my board and told them that I need to do either sales or marketing, and asked them which of those I should do, I'd be laughed out of the room. I need to do both, just like you need to do both! Life is tough. Phoenix is the top company priority, but that doesn't mean you get to hold the sox-404 audit hostage."

I count to three before saying, "Obviously, I'm not being clear. Both Phoenix and the compliance project share certain key resources, such as Brent. The compliance project *alone* would tie up these people for a year, but we need them focused on Phoenix. On top of that, our infrastructure is so fragile, that we have daily failures, which often require these same resources to restore normal operations. If a similar outage to the payroll run failure happened today, we'd likely have to pull Brent off both the Phoenix and compliance work to figure out what went wrong."

I look at him dead-on and say, "We've looked at different resourcing options, including hiring and moving people around, but none of them will have any effect fast enough to make a difference. If Phoenix is really the top priority, we need to put some of the compliance work on hold."

"Out of the question," he says, before I can even finish. "I've seen that big pile of audit findings, and we will be in very hot water if we don't get those issues fixed."

This is definitely not going according to plan. "Okay…" I say slowly. "We'll do our best, but let me state for the record that we're too under-staffed to do a good job on either one, let alone both."

I wait for him to acknowledge my point. Seconds go by before he fi-nally nods.

Realizing this is probably the best I'm going to get, I indicate to the first page of the handout I gave him. I say, "Let's zoom up and talk about project demand and capacity. We're currently supporting over thirty-five business projects through Kirsten's Project Management Office, and at current count, seventy-plus other smaller business projects and in-ternal initiatives. And there are others out there that we just haven't counted yet. With our 143 IT Operations people, nothing is getting done as promised."

I point him to the second page of the handout, saying, "As you can see, my team and I have come up with a request for six additional re-sources that we're most short-handed on."

I go for the close, saying, "My goal is to increase our throughput so we won't be in this position again, and to get as many of these projects done as we can. I'd like your approval to get these openings immediately, so we can start our search. Talent like Brent is not easy to find, and we need to start sooner rather than later."

In my rehearsals, this is when Steve would run his finger down the figures, ask me some questions, and we'd have a meaningful discussion about how to make the best trade-offs. Maybe he'd even pat me on the back and compliment me on the quality of my analysis.

But Steve doesn't even pick up my handouts. Instead, he looks at me and says, "Bill, Phoenix is already $10 million over budget, and we must get cash-flow positive soon. You have some of the most expensive re-sources in the entire company. You have to use what you've got."

He crosses his arms and continues, "Last year, we had some IT ana-lysts come in and benchmark our company against our peers. They told us that we're spending way more on IT than our competitors."

"You may think that with three thousand employees, six more em-ployees won't make a difference. But, trust me, every expense is under

scrutiny. If I can't close the profitability gap, I'll have to do another layoff. Your math of adding another $2 million in labor costs just doesn't work."

He continues in a more sympathetic voice. "My suggestion to you? Go to your peers and make your case to them. If your case is really valid, they should be willing to transfer some of their budget to you. But let me be clear: Any budget increases are out of the question. If anything, we may have to cut some heads in your area."

I spent hours role-playing worst-case scenarios over the weekend. Apparently, I'm going to have to practice being more pessimistic.

"Steve, I don't know how I can be more clear about this," I say, feeling a little desperate. "This stuff isn't magic. All this work being piled on us is done by real people. Commitments like the compliance work are made without any regard for what's already on people's plates, like Phoenix."

Realizing I have little to lose, but trying to shock some sense into him, I say, "If you really care about closing the gap with the competition by having Phoenix succeed, you sure aren't acting like it. To me, it seems like you're just being suckered to rush to the gunfight late, showing up with only a knife."

I expected some kind of reaction but he merely leans back, crossing his arms in front. "We're all doing our best. So you better go back and do the same."

Just then, the door opens as Sarah walks in. "Hi, Steve. Sorry to interrupt, but we have the next analyst call in two minutes. Shall I dial us in?"

Shit. I look down at my watch. 9:27.

She even robbed me of my last three minutes.

Utterly defeated, I finally say, "Okay, got it. Keep pushing. I'll keep you posted."

Steve nods in thanks, and then turns to Sarah as I close the door behind me. On my way out, I toss the presentation I had worked all weekend into Stacy's recycling bin.

I try to wave away the stench of failure as I walk to the CAB meeting. I'm still thinking about how I'm going to break the bad news to Wes and Patty when I walk into the conference room that Patty has coined the "Change Coordination Room."

All thoughts of Steve disappear when I see what's there.

Almost every area of the wall is now covered in whiteboards. Index cards cover nearly every inch of the whiteboards on two of the walls. It's not just one deep—in some places there are hooks attached to the board, with ten cards hanging off them.

On the conference room table are twenty, maybe even thirty, more piles of cards.

On the far side of the table, two guys who work for Patty have their backs to us, studying a card. After a moment, they tape it between two other cards in front of them.

"Holy crap," I say.

"We've got a problem." Patty says from behind me.

"Not enough space for more whiteboards?" I say, only half joking.

Before Patty answers, I hear Wes enter the room. "Holy shit!" he says. Where did all these cards come from? Are they all for this week?"

I turn to ask him, "Are you surprised? Most of these are coming from your group."

He looks around at all the boards and then at the cards on the table, " I knew that my guys were really busy, but, there must be a couple of hundred changes here."

Patty turns her laptop around to show us the spreadsheet she has open, "Since last Friday afternoon, there have been 437 changes submitted for this week."

Wes for once is speechless. He finally shakes his head and says, "And now we're supposed to go through and approve all of them? This meeting was only scheduled for an hour—we'd need days to go through all of these!"

He looks at me. "Mind you, I'm not saying that we shouldn't, but if we're going to do this every week…"

Again, Wes stops speaking, overwhelmed at the task in front of us.

Quite honestly, I feel the same way. Apparently, getting all the managers to submit their changes for the week was just the first step. I didn't expect that the process would fall apart as we went beyond collecting the data and actually set out to process and authorize the changes.

I force myself to say cheerfully, "This is a great start. Like most things, things get worse before they get better. We've got enthusiastic support from the technical managers, so now we've got to figure out how to get

these changes scrutinized and scheduled on an on-going basis. Any ideas?"

Patty is first to speak up. "Well, no one says that we have to be the ones reviewing all the changes—maybe we can push down some of these to delegates."

I listen to Wes and Patty trade ideas back and forth, before I say, "Let's go back to our goals: get the left and right hands to know what the other is doing, give us some situational awareness during outages, and give audit some evidence that we're addressing change control.

"We need to focus on the riskiest changes," I continue. "The 80/20 rule likely applies here: Twenty percent of the changes pose eighty percent of the risk."

I stare again at piles of cards in front of us and pick up a couple at random, searching for some inspiration.

Holding up a card that has a big frowny face drawn on it, I ask, "What's PUCCAR?"

"That goddamned app," Wes says with disgust, "is the Parts Unlimited Check Clearing and Reconciliation application that someone implemented almost two decades ago. We call it 'pucker' because every time we change it, it blows up, and no one knows how to fix it. The vendor went out of business during the dot-com boom, but we've never gotten funding to replace it."

I ask, "If we know it's that prone to crashing, why do we need to change it?"

Wes says quickly, "We try not to. But sometimes the business rules change, and we also have to keep it patched. It's running an operating system that's out of maintenance, so it's always dicey…"

"Good! It's a risky change. What other types of changes are being submitted like PUCCAR?" I ask.

We make a pile of nearly fifty cards proposing changes to the Rainbow, Saturn, and Taser applications, and also changes to the network and certain shared databases, which could impact a significant portion, or even all, of the business.

"Even looking at those cards makes my heart palpitate," Wes says. "These are some of the dangerous changes we make around here."

He's right. I say, "Okay, let's mark all of these as 'fragile.' These are high risk and must be authorized by the CAB. Patty, changes like this

should be at the top of the pile during our meetings."

Patty nods, taking notes saying, "Got it. We're pre-defining high-risk categories of change that not only must have change requests submitted, but must have authorization before being scheduled and implemented."

We quickly create a list of the top ten most fragile services, applications, and infrastructure. Any change request that could affect any of these will be immediately flagged for CAB scrutiny.

Patty adds, "We need to create some standard procedures around these changes—like when we'll want them implemented—and have key resources not only aware of them but also standing by, just in case things go wrong—even the vendors."

She adds with a half smile, "You know, like having firefighters and ambulances lined up on the runway, ready to spray safety foam when the airplane lands in flames."

Wes laughs and adds wryly, "Yeah, in the case of PUCCAR, have the coroner stock up on a bunch of body bags, too. And a PR person ready to handle the angry phone calls from the business, saying that some customers were allergic to the foam we used."

I laugh. "You know, that's an interesting idea. Let's let the business choose the foam. There's no reason why all the responsibility should rest on our shoulders. We can send an e-mail out to the business ahead of time and ask when the best implementation time would be. If we can give them data on the outcomes of previous changes, they may even withdraw the change."

Patty is typing away. "Got it. For these types of changes, I'll have my staff generate some reports on the changes' success rates and any associated downtime. This will help the business make more informed decisions around the changes."

I'm extremely pleased with Patty's idea and am confident that we're on the right track. "Okay, that still leaves four hundred cards to go. Any ideas?"

Wes has been going through the cards methodically, creating two big stacks of cards next to him. He picks a card from the bigger pile, "This pile has changes we do all the time. Like this one about the monthly tax table upload to the POS systems. I don't think we should suspend any of these changes.

"On the other hand, these changes are stuff like 'increasing the

Java application server thread pool size,' 'installing the Kumquat vendor application hotfix to resolve performance issue,' and 'resetting the Kentucky data center load balancer to default duplex settings.'

"What the hell do I know about these things?" Wes says. "I just don't know enough about the context to have an actual opinion worth a damn. I don't want to be like a seagull, flying in, crapping on people, and then flying away, you know?"

Excited, Patty says, "Excellent! The first ones are the low-risk changes that ITIL calls 'standard changes.' For changes we've done many times before successfully, we just pre-approve. They still need to be submitted, but they can be scheduled without us."

When everyone nods, she continues, "That leaves about two hundred changes that are medium-risk changes that we still need to look at."

"I agree with Wes," I respond. "For these, we need to trust that the manager knows what he or she is doing. But I'd like Patty to verify that people have appropriately informed anyone they could affect, and gotten the 'okay to proceed' from all of them."

I think for a moment and say, "Take John's tokenization application. Before that change request would even come to us, I would expect him to get the nod from the application and database owners, and also the business. If he's done that, that's good enough for me. I view our role as making sure that he's dotted the i's and crossed the t's. At this level, I care more about the integrity of the process, not so much about the actual changes."

Patty is typing away. "Let me see if I've got this right: For the 'messy middle changes,' we're deciding that the change submitter has responsibility and accountability for consulting and getting approval from people potentially affected. Once they do that, they submit their change card for us to review and approve for scheduling."

I smile and say, "Yep. Work for you, Wes?"

At last, he says, "I think it'll work. Let's give it a shot."

"Good," I say. Then I say to Patty, "You can help make sure the change requesters are actually doing all the work beforehand?"

Patty smiles and says, "With pleasure."

She looks up at the board, tapping a pen on the table while she thinks. She says, "Today is Monday. We've already said today's changes are cleared for implementation. I propose we extend the amnesty period

through tomorrow, and assemble a full CAB meeting for Wednesday, with the intent of scheduling the rest of the changes. That should give everyone enough time to prepare."

I look at Wes. He says, "This is good, but I'm already thinking about next week. We should tell everyone to keep the change requests coming in, and let's set up the weekly CAB meetings starting Friday the nineteenth."

Patty looks as pleased as I am that Wes is planning ahead to the following week, instead of griping. She says, "I'll have instructions sent to everyone in the next couple of hours."

After she finishes typing, she adds, "One last thing. I just want to point out that we're tying up two people, as well as myself, running this manual process. It's very labor intensive. Eventually, we're going to have to think about some way to automate this."

I nod. "No doubt that this isn't sustainable in its current form. But let's get a couple of CAB meetings under our belt and nail down what exactly the rules are. I promise you that we'll revisit this."

The meeting winds down and we all leave smiling. That's a first for my team.

CHAPTER 9

I'm in the most ruthless budget meeting I've ever attended. Dick sits in the back of the room, listening attentively and occasionally officiating. We all defer to him, as he'll create the first cut of the annual plan. Sarah sits next to him, tapping away on her iPhone.

I finally pick up the phone. It must be a genuine emergency. It's been vibrating almost non-stop for the past minute.

I read, "Sev 1 incident: credit card processing systems down. All stores impacted."

Holy crap.

I know I've got to leave this meeting, despite knowing that everyone will try to steal my budget. I stand up, struggling with the large laptop, trying to keep more pieces from falling off. I almost make it out when Sarah says, "Another problem, Bill?"

I grimace. "Nothing that we can't handle."

In reality, any Sev 1 outage automatically qualifies as a very big problem, but I don't want to give her any ammunition.

When I get to the NOC, I grab the seat next to Patty, who is coordinating the call. "Everyone, Bill just joined us. To catch you up, we have confirmed that the order entry systems are down and we have declared

a Sev 1 incident. We were just trying to establish what changed."

She pauses, looking at me. "And, I'm not confident we actually know."

I prompt everyone, "Patty asked a pretty simple question. So, what were all the changes made today that could have led to this outage?"

There is an awkward silence that stretches on as people either look down or look around at one another suspiciously. Everyone is avoiding eye contact.

I'm about to say something when I hear, "This is Chris. I told Patty this before, and I'm telling you again now, none of my developers changed anything. So cross us off the damned list. It was probably a database change."

Someone at the end of the table says angrily, "What? We didn't make any changes—well, not on anything that could have impacted the order entry systems. Are you sure it wasn't an operating system patch gone wrong again?"

Someone two seats over then sits up and says heatedly, "Absolutely not. We don't have any updates scheduled to hit those systems for another three weeks. I'd bet fifty bucks it was a networking change—their changes are always causing problems."

Slapping both hands over his eyes, Wes shouts, "For crying out loud, guys!"

Looking exasperated and resigned, he says to someone across the table, "You need to defend your honor, too? Everyone might as well have a turn."

Sure enough, the networking lead across the table from him holds up both hands, looking hurt and aggrieved. "You know, it really isn't fair that networking keeps getting blamed for outages. We didn't have any changes scheduled for today."

"Prove it," the database manager challenges.

The networking lead turns bright red, his voice cracking. "This is bullshit! You're asking me to prove that we didn't do anything. How the hell do you prove a negative? Besides, I'm guessing the problem is a bad firewall change. Most of the outages in the last couple of weeks were caused by one of them."

I know I should probably put an end to this madness. Instead, I force myself to lean back in my chair and keep observing, one hand covering my mouth to hide my angry scowl, and to keep me from saying

something rash.

Patty looks exasperated and turns to me. "No one from John's team is present on the call. His team handles all the firewall changes. Let me try getting a hold of him."

I hear the sounds of loud tapping on a keyboard from the speaker-phone, and then a voice says, "Umm, can someone try it now?"

There are sounds of multiple people typing on laptop keyboards, as they try to access the order entry systems.

"Hold it!" I say loudly, jumping halfway out of my chair, pointing at the speakerphone. "Who just said that?"

An awkward silence lengthens.

"It's me, Brent."

Goddamnit.

I force myself to sit down again and take a long, deep breath. "Brent, thanks for the initiative, but, in a Sev 1 incident, we need to announce and discuss any actions before taking them. The last thing we want to do is to make things worse and complicate establishing root cause—-"

Before I can finish, someone at the other end of the table interrupts from behind his laptop, "Hey, the systems are back up again. Good work, Brent."

Oh, for chrissakes.

I press my lips together in frustration.

Apparently, even undisciplined mobs can get lucky, too.

"Patty, wrap this up," I say. "I need to see you and Wes in your office immediately." I stand up and leave.

I remain standing in Patty's office until I have both of their attention. "Let me make myself clear. For Sev 1 incidents, we cannot fly by the seat of our pants. Patty, from now on, as the person leading a Sev 1 incident call, I need you to start the call presenting a timeline of all relevant events, especially changes.

"I'm holding you responsible for having that information close-at-hand, which should be easy since you also control the change process. That information comes from you, not all the yahoos on the conference call. Is that clear?"

Patty looks back at me, obviously frustrated. I resist the urge to soften my words. I know she's been working hard, and I've been piling even more onto her lately.

"Yeah, totally clear," she says wearily. "I'll work on documenting that process and will institute it as quickly as I can."

"Not good enough," I say. "I want you to host practice incident calls and fire drills every two weeks. We need to get everyone used to solving problems in a methodical way, and to have the timeline available before we go into that meeting. If we can't do this during a pre-arranged drill, how can we expect people to do it during an emergency?"

Seeing the discouraged expression on her face, I put my hand on her shoulder. "Look, I appreciate all the work you're doing lately. It's important work, and I don't know what we'd do without you."

Next, I turn to Wes. "Impress upon Brent immediately that during emergencies, everyone must discuss changes they're thinking about, let alone the ones they actually implement. I can't prove it, but I'm guessing Brent caused the outage, and when he realized it, he undid the change."

Wes is about to respond, but I cut him off.

"Put a stop to this," I say forcefully, pointing at him. "No more un-authorized changes, and no more undisclosed changes during outages. Can you get your people under control or not?"

Wes looks surprised and studies my face for a moment. "Yeah, I'm on it, boss."

Wes and I spend nearly every waking hour late Tuesday and early Wednesday in the Phoenix war room. The deployment is only three days away. As each day goes by, the worse it looks.

It's a relief to head back to the Change Coordination Room.

As I walk in, most of the CAB is here. The messy pile of index cards is gone. Instead, they're either hanging on one of the whiteboards on the wall or neatly organized on the table in the front of the room, labeled "Pending Changes."

"Welcome to our change management meeting," Patty begins. "As you can see on the board, all of the standard changes have been sched-uled. Today, we'll review and schedule all the high- and medium-risk changes. We'll then look at the change schedule to make any needed ad-justments—I won't give away anything right now, but I think you'll see something that requires our attention."

She picks up the first pile of cards. "The first high-risk change is to a

firewall submitted by John, scheduled for Friday." She then reads out the people who have been consulted and signed off on the proposed change.

She prompts Wes and me, "Bill and Wes, do you approve this to go on the board as a Friday change?"

I'm satisfied that there have been enough eyes on this, so I nod.

Wes says, "Same for me. Hey, not bad. Twenty-three seconds to approve our first change. We beat our previous best time by fifty-nine minutes!"

There is scattered applause. Patty doesn't disappoint as she goes through the remaining eight high-risk changes, taking even less time for those. There is more applause, while one of her staff posts the cards on the board.

Patty picks up the medium-risk change stack. "There were 147 standard changes submitted. I want to commend everyone for following the process and talking with the people that needed to be consulted. Ninety of those changes are ready to be scheduled, and have been posted. I've printed them out for everyone to review."

Turning to Wes and me, she says, "I sampled ten percent of these, and, for the most part, they look good. I'll keep track of problem trends, just in case some of these need more scrutiny going forward. Unless there are any objections, I think we're done with the medium-risk changes. There's actually a more pressing problem that we need to address."

When Wes says, "No objections from me," I nod for Patty to proceed, who merely gestures to the boards.

I think I see what's wrong, but I stay quiet. One of the leads points to one of the boxes and says, "How many changes are scheduled for Friday?"

Bingo.

Patty flashes a small smile and says, "173."

On the board, it's now very obvious that nearly half the changes were scheduled for Friday. Of the remaining, half are scheduled for Thursday with the rest sprinkled earlier in the week.

She continues, "I'm not suggesting that 173 changes happening on Friday is bad, but I'm worried about change collisions and resource-availability conflicts. Friday is also the day Phoenix is being deployed.

"If I were air traffic control," she continues, "I'd say that the airspace is dangerously overcrowded. Anyone willing to change their flight plans?"

Someone says, "I've got three that I'd like to do today, if no one minds. I don't want to be anywhere near the airport when Phoenix comes in for a landing."

"Yeah, well, lucky you," Wes mutters. "Some of us have to be here on Friday. I can already see the flames pouring out of the wings…"

Two other engineers ask for their changes to be moved earlier in the week. Patty has them go to the board to move their change cards, verifying that it wouldn't interfere with other changes already scheduled.

Fifteen minutes later, the distribution of the cards on the change board is much more even. I'm less happy that everyone is moving their changes as far away from Friday as possible, like woodland creatures running away from a forest fire.

Watching the change cards being moved around, something else starts to bother me. It's not just the images of carnage and mayhem around Phoenix. Instead, it has something to do with Erik and the MRP-8 plant. I keep staring at the cards.

Patty interrupts my concentration. "—Bill, that concludes what we needed to get through. All the changes for the week are approved and scheduled."

As I try to reorient myself, Wes says, "You've done a really great job organizing this, Patty. You know I was one of your louder critics. But…" He gestures at the board, "All this is just terrific."

There is a murmur of agreement, and Patty flushes visibly. "Thanks. We're still in our first week of having a real change process, and this is the broadest participation we've ever had. But before we start patting ourselves on the back, how about we make it to a second week, okay?"

I say, "Absolutely. Thanks for all the time you're putting into this, Patty. Keep up the great work."

When the meeting adjourns, I stay behind, staring at the change board.

Several times during this meeting, something flickered at the edge of my mind. Was it something that Erik said that I dismissed earlier? Something to do with work?

Last Thursday, Wes and Patty did a manual inventory of all our projects, coming up with nearly a hundred projects. It was manually generated by interviewing all the line workers. Those projects certainly represent two categories of work: business projects and internal IT

projects.

Looking at all the change cards on the wall, I realize that I'm looking at another collection of work that we once again manually generated. According to Patty, it's 437 discrete pieces of… work… that we're doing this week.

I realize that changes are the third category of work.

When Patty's people moved around the change cards, from Friday to earlier in the week, they were changing our *work schedule*. Each of those change cards defined the work that my team was going to be doing that day.

Sure, each of these changes is much smaller than an entire project, but it's still work. But what is the relationship between changes and projects? Are they equally important?

And can it really be that before today, none of these changes were being tracked somewhere, in some sort of system? For that matter, where did all these changes come from?

If changes are a type of work different than projects, does that mean that we're actually doing more than just the hundred projects? How many of these changes are to support one of the hundred projects? If it's not supporting one of those, should we really be working on it?

If we had exactly the amount of resources to take on all our project work, does this mean we might not have enough cycles to implement all these changes?

I debate with myself whether I'm on the verge of some large and meaningful insight. Erik asked me what my organization's equivalent to the job release desk on the plant floor. Does change management have anything to do with it?

Suddenly I laugh out loud at the absurd number of questions I've just asked myself. I feel like a one-man debate club. Or that Erik tricked me into doing some philosophical navel-gazing.

Thinking for a moment, I decide there's value in knowing that changes represent yet another category of work, but don't know why.

I've now identified three of the four categories of work. For a brief moment, I wonder what the fourth category of work is.

CHAPTER 10

• *Thursday, September 11*

The next morning, bright and early, I'm back in the Phoenix war room. Kirsten gives us a rundown of the most critical Phoenix project tasks at the beginning of each day. Because the stakes are so high, committed tasks are usually reported by the responsible manager as "completed."

No one wants to get on Kirsten's bad side. Or Steve's, for that matter.

The bad news of the day comes from William Mason, Director of Quality Assurance, who works for Chris. Apparently, they're still finding twice as many broken features as are getting fixed.

It's never a good sign when pieces are falling off the car as it moves down the assembly line. No wonder all of us are dreading the deployment date.

I'm pondering how we can mitigate some of this risk when I hear Kirsten call Brent's name for the third time. And for the third time, Wes is having to explain why something didn't get done.

Sarah says from the back of the room, "Wes, once again we're getting bottlenecked by your people. Are there some personnel issues here that you need to be addressing?"

Wes turns bright red and is about to respond, when I quickly interject, "Kirsten, how many other tasks have been assigned to Brent?"

Kirsten quickly replies, "As of today, there are five outstanding tasks. Three were assigned last Wednesday, and two were assigned last Friday."

"Okay, I'm on it," I say. "As soon as we're done here, I'll look into what's going on. Expect a status report by noon today along with revised timelines for completion. I'll let you know if we require anything."

On my walk over to Brent's cube in Building 7, I remind myself that my goal is to observe and seek to understand. After all, this guy has come up in conversation every day since I accepted my new role.

Maybe Brent isn't actually as smart as we think. Or perhaps he *is* some technology Einstein and any attempt to find similarly skilled people will fail. Or maybe he's deliberately sabotaging our attempts to take work away from him.

But Brent seems professional and smart, not much different than many senior engineers I've worked with in the past.

As I approach his desk, I hear him on the phone and typing away on his keyboard. He's sitting down in front of his four monitors with a headset on, typing something into a terminal application.

I remain standing outside of his cube, discreetly listening in.

He says, "No, no, no. The database is up and running. Yeah, I know because it's right in front of me… Yes, I can do queries… Yes… Yes… No… I'm telling you, it has to be the application server… It's up? Okay, let me see… Wait, let me try doing a manual sync. Try it now…"

His cell phone rings. "Wait a second, I've got another call coming in. I'll call you right back."

He writes something down on a Post-It note, putting it on his monitor next to two other Post-It notes. Exasperated, he answers his cell phone, "Yeah, Brent here… The what service is down? Have you tried rebooting it? Look, I'm really slammed right now with Phoenix—I'll get back to you later today?"

I'm in the middle of silently congratulating him when I hear him say, "Uh-huh… I don't even know who that is. The VP of what? Okay, let me have a look."

I sigh, taking a seat in an empty cubicle to watch today's episode of A Day in The Life of Brent.

He's on the phone for another five minutes, hanging up only after

some critical production database is back up and running.

I appreciate how Brent seems to genuinely care that everyone relying on IT systems can get their work done, but I'm dismayed that everyone seems to be using him as their free, personal Geek Squad. At the expense of Phoenix.

Brent grabs one of the Post-It notes off of his monitor and picks up his phone. Before he can dial, though, I stand up and say, "Hi, Brent."

"Jesus Christ!" he says, startled. "How long have you been there?"

"Only for a couple of minutes," I say, putting on my most friendly smile, grabbing a seat next to him. "Long enough to see you fix two people's problems. That's admirable, but I just came from Kirsten's daily Phoenix stand-up. There are five tasks that have been assigned to you, which are now late."

I show him the five tasks from the project management meeting. He says quickly, "I'm half-done with all of these already. I just need a couple of hours of quiet working time to get this done. I'd do this from home if I could, but the network connection is too slow."

"Who's been calling you, and what do they want?" I ask, frowning.

"Usually it's other IT people who are having problems fixing something," he replies, rolling his eyes. "When something goes down, I'm apparently the only person who knows where to go looking."

"I thought Wes hired a bunch of people to take over some of these escalations from you." I say.

Brent rolls his eyes again. "That was the idea. But most had other responsibilities and were never available when we needed them. Others were let go during the downsizings because they weren't busy enough. Trust me. That was no big loss. I ended up handling most of those issues anyway."

"How many calls are you getting each day? Are you logging these calls anywhere?" I ask.

"You mean, like in our ticketing system? No, because opening up a ticket for each of those calls would take longer than fixing the problem." Brent says dismissively. "The number of calls depends on the day. Last week has been worse than normal."

I get it now. I bet if anyone called right now and yelled loud enough or name-dropped someone scary enough, Brent could be dragged into fixing someone else's problem for hours on end.

"You tried to push back on the last person who called. What made you decide to work the issue, instead of telling them to go pound sand?" I ask.

He replies, "She told me that the vp of Logistics was screaming that replenishment orders weren't getting created, and that if it didn't get fixed right away, our stores were at risk of stocking out on fast-moving products. I didn't want to be the person being called out for single-handedly allowing stock-outs to happen in the stores."

I purse my lips. Company executives strong-arming my engineers into doing their bidding is total bullshit. But jeopardizing Phoenix is above their pay grade.

Standing up, I say, "Okay, from here on out, you're working only on Phoenix. Steve Masters has said that this is everyone's top priority. Now more than ever, the project needs you. I'm expecting you to reject any task that anyone tries to assign you."

Brent looks simultaneously relieved and concerned. Maybe he's thinking about that vp of Logistics.

I add, "If anyone contacts you about anything besides Phoenix, send them to Wes. Let him deal with all the jackasses."

He says skeptically, "Look, I appreciate this, but I really don't think this is going to work in the long run. Our guys around here just don't seem up-to-speed with how all our systems work. In the end, they keep coming to me."

"Well, they're going to have to learn. When they call, send them to Wes. If anyone's got a problem with that, then send them to me. In fact, put a vacation message on your e-mail, saying that you're not responding to anything except for Phoenix and to instead contact…"

At my prompting, Brent says with a small smile, "Wes."

"See? You're already getting the hang of it." I smile in return.

I point to his desk phone, "Do whatever it takes to break people of the habit of going directly to you. You've got my permission to turn off your phone ringer and change your voicemail greeting to say you're not available and to contact Wes instead. Whatever it takes."

Realizing that I'm distracting Brent from Phoenix by just standing here, I say quickly, "No, I'll have my assistant Ellen change your voice-mail greeting for you."

Brent smiles again, and says, "No, no, no. I can do that. Thanks for

the offer, though."

I write my cell phone number on a Post-It note, and hand it to him, "Ellen will do it. We need you on those Phoenix tasks. Call if you need anything from me."

When he nods, I start heading back to Building 9, but then turn around to ask, "Hey, let me buy you a beer sometime next week?"

He agrees, his expression brightening.

As I leave the building, I immediately call Patty. When she picks up, I say, "Grab Wes and meet me outside the Phoenix war room. We need to change the way we're managing escalations to Brent. Right now."

We all sit down in the conference room across the hallway from the Phoenix war room.

"How'd it go with Brent?" Wes asks.

When I tell him that Brent wasn't able to work on Phoenix because of all the break-fix work, he blanches. "He's been in all these emergency meetings! How can he possibly think anything is more important than Phoenix!"

I say, "Good question. Why would Brent drop Phoenix to work on something else?"

Wes' bluster disappears for a couple of moments. "Probably because someone like me was screaming at him, saying that I absolutely needed his help to get my most important task done. And it's probably true: for way too many things, Brent seems to be the only one who knows how they actually work."

"If it were me, I'd try to justify it by saying that it would only take a couple of minutes…" Patty says. "Which could be true, but it's like death by a thousand cuts."

"Processes are supposed to protect people. We need to figure out how to protect Brent," I say. I then describe how I already told Brent to send everyone wanting anything to Wes.

"What? You want me to micromanage all of his time? I don't have time to be Brent's secretary or be some sort of help desk person!" he shouts.

"Okay, what's on your plate that's more important than making sure your resources are getting critical Phoenix work done?" I ask.

Wes looks back at me for several moments stonily and then laughs. "Okay, you got me. Look, Brent is a smart guy. But he's also one of the worst people I've ever met at writing anything down. Let me tell you a real story of how impossible this is going to be. Several months ago, we were three hours into a Sev 1 outage, and we bent over backward not to escalate to Brent. But eventually, we got to a point where we were just out of ideas, and we were starting to make things worse. So, we put Brent on the problem."

He shakes his head, recalling the memory, "He sat down at the keyboard, and it's like he went into this trance. Ten minutes later, the problem is fixed. Everyone is happy and relieved that the system came back up. But then someone asked, 'How did you do it?' And I swear to God, Brent just looked back at him blankly and said, 'I have no idea. I just did it.'"

Wes thumps the table and says, "And *that* is the problem with Brent. How the hell do you document that? 'Close your eyes and go into a trance?'"

Patty laughs, apparently recalling the story. She says, "I'm not suggesting Brent is doing this deliberately, but I wonder whether Brent views all his knowledge as a sort of power. Maybe some part of him is reluctant to give that up. It does put him in this position where he's virtually impossible to replace."

"Maybe. Maybe not," I say. "I'll tell you what I do know, though. Every time that we let Brent fix something that none of us can replicate, Brent gets a little smarter, and the entire system gets dumber. We've got to put an end to that.

"Maybe we create a resource pool of level 3 engineers to handle the escalations, but keep Brent out of that pool. The level 3s would be responsible for resolving all incidents to closure, and would be the only people who can get access to Brent—on one condition.

"If they want to talk with Brent, they must first get Wes' or my approval," I say. "They'd be responsible for documenting what they learned, and Brent would never be allowed to work on the same problem twice. I'd review each of the issues weekly, and if I find out that Brent worked a problem twice, there will be hell to pay. For both the level 3s and Brent."

I add, "Based on Wes' story, we shouldn't even let Brent touch the keyboard. He's allowed to tell people what to type and shoulder-surf,

but under no condition will we allow him to do something that we can't document afterward. Is that clear?"

"That's great," Patty says. "At the end of each incident, we'll have one more article in our knowledge base of how to fix a hairy problem and a growing pool of people who can execute the fix."

Wes doesn't look completely convinced, but he eventually laughs. "I like it, too. We'll treat him like Hannibal Lecter—when we need him, we'll put him into a straightjacket, tie him to a wheelchair, and cart him out."

I laugh.

Patty adds, "To prevent another Brent escalation, we should log every keystroke and record the terminal session. Maybe even have someone follow him around with a video camera and turn on audit logging so we know exactly what he changed."

I like it, although it sounds a bit extreme. However, I suspect that it will take extreme measures to get us out of this situation.

I venture, "Maybe we take away his production access, so the only way the work can get done is him telling the level 3s what to do."

Wes guffaws. "He might quit if we did that right away."

"So, who do we have that's available to put into this level 3 resource pool?" I ask.

He hesitates. "Well, we have the two hires we made a year ago that were meant to help shore up Brent. One is working on creating server build standards, but we can take her off of that temporarily. There are two other engineers that we identified for cross-training years ago, but we never had the time to pursue it further. So, that's three people."

"I'll define the new Brent procedures," Patty says. "I like gating all access to him through you and Wes. But how will we discourage people like that VP of Logistics from going directly to Brent?"

I reply immediately, "We'll collect the names of the people who do, and I'll call each of their bosses to tell them to cease and desist. And then I'll let Steve know how they're disrupting Phoenix."

"Okay, let's give it a try," she says. "You know, we've got the 'stick' approach covered, but what about the 'carrots'? How can we motivate Brent and the engineers to follow this new process?"

"Maybe we send them to whatever conference or training they want. When senior engineers get to the level of Brent, or aspire to be Brent,

they want to learn and share what they've done. As for Brent, how about we make him take a week off, completely free of any escalation duties?" Wes suggests.

"My God," Wes continues, shaking his head. "I don't think Brent even been able to take a day off without a pager in about three years. You know, he'll burst into tears when we offer that to him."

"Make it so, guys," I say, smiling as I imagine that scene.

Before I forget, I add, "Wes, I want a timesheet from Brent every day, and I want every escalation Brent works in the ticketing system. We need that documented so we can analyze it later. Anyone using Brent's time will need to justify it to me. If it's not justified, I'll escalate it to Steve, and that person and his manager will have to explain to Steve why they think their project or task is so important."

"This is amazing," Patty says. "We've gotten more change, incident, and escalation processes going in the last week than we have in the last five years!"

"It's probably just in the nick of time," Wes says, sounding relieved. "Do me a favor, and don't tell anyone I said that. I've got a reputation to protect."

CHAPTER 11

• *Thursday, September 11*

Later that day during lunch, I curse loudly. I was trying to use my precious few unscheduled minutes during my break to get caught up on e-mails but forgot that my crappy laptop crashes if I turn it on while it's in the docking station. It's the third time I've done it this week.

I'm already eating late and half my lunch break will be gone by the time I can log on.

Looking around, I find a blank Post-It note on my desk and write in large letters, "DO NOT INSERT LAPTOP UNTIL POWERED ON!!!" and put it on the docking station to avert my next act of time-wasting stupidity.

I'm smiling at my countermeasure when Patty calls me on my cell phone. "You have a minute to talk? I'm seeing something very odd on the change calendar. You need to see this."

When I walk into the conference room, I see the now familiar change cards hanging on the wall. The inbox basket is full of cards and more are neatly stacked in piles on the table. Patty is scrutinizing something on her laptop, chewing a fingernail.

Looking exhausted, she says, "I'm starting to think this entire change process is a total waste of time. Organizing all these changes and

managing all the stakeholder communication is taking up three people full-time. Based on what I'm seeing now, it may be useless."

To see her suddenly disparaging the processes she has championed for years is genuinely alarming.

"Whoa," I say, waving both my hands in front of her. "Catch me up, because I think you've done a fantastic job, and I don't want us to go back to the old ways. What has you so concerned?"

She points to the Monday and Tuesday change boxes. "At the end of each day, my people start closing out the scheduled changes. We wanted to make sure that any changes that weren't completed were flagged so they can be rescheduled and to make sure that our change calendar was tracking what was happening in reality."

She points to the corner of one card. "We put a check on the change cards that have been verified as completed and then indicate whether it caused a service incident or outage. Since last Friday, sixty percent of the scheduled changes didn't get implemented! Which means we're doing all this work to authorize and schedule these changes, only to find that they're not even getting done!"

I can see why Patty is alarmed.

"Why aren't they being completed? And what do you do with the incomplete change cards?" I ask.

She scratches her head. "I've called a bunch of the change requesters, and their reasons are all over the board. A couple people said that they couldn't get all the people they needed to start their change. Someone else discovered halfway through his change that the storage guys didn't finish expanding the SAN like they had promised, so he had to back out his change, two hours into the procedure."

I groan, thinking about the wasted time and effort. I keep listening as Patty continues, "Someone else said that she couldn't implement her change because there was an outage in progress. And a bunch of other people said, um…"

She looks uncomfortable, so I prompt her to continue. "Well, they said they needed Brent for a portion of their changes, and he wasn't available," she says reluctantly. "In some cases, Brent's involvement was planned. But in other cases, they discovered they needed his help only after they started implementing and had to abort when Brent wasn't available."

Before Patty is even finished speaking, I'm seeing red.

"Goddamnit! Brent again? What is going on? Just how has Brent managed to wedge himself into everyone's path?"

"Oh, shit!" I exclaim when it hits me what's happening. "Did we create this problem by focusing Brent solely on Phoenix? Is this new policy a mistake?"

She says after a moment, "You know, that's an interesting question. If you genuinely believe that Brent should only be working on the most important projects, then I think the new policy is correct, and we shouldn't change it back.

"I think it's also important to note that until recently, Brent was helping people implement their changes, without that dependency recorded anywhere. Or rather, he'd try to. But he'd invariably be too busy to help everyone, so many of these changes wouldn't have been completed, even in the old way."

I pick up my phone and speed-dial Wes, telling him to join us.

When he arrives a couple of moments later, he takes a seat and then looks at my old laptop, saying, "Jeez. You still carrying that thing around? I'm sure we have a couple of newer eight-year-old laptops that you could use."

Ignoring his comment, Patty quickly brings him up to speed. His reaction to her revelation isn't much different than mine.

"You've got to be kidding me!" he says angrily, slapping his palm on his forehead. "Maybe we should allow Brent to help people make changes?"

I quickly say, "No, that can't be the answer. I suggested that, too. But Patty pointed out that this would imply that the blocked changes are more important than Phoenix. Which they aren't."

I think aloud, "Somehow, just like we're breaking the habits of people asking Brent to help with break-fix work, we need to do the same with change implementation. We've got to get all this knowledge into the hands of people actually doing the work. If they can't grok it, then maybe we have a skills problem in those teams."

When no one says anything, I tentatively add, "How about we take those same level 3 engineers that dedicated to protect Brent from break-fix to help with these change issues?"

Wes quickly responds, "Maybe. But it's not a long-term fix. We need

the people doing the work to know what the hell they're doing, not enable more people to hoard knowledge."

I listen to Wes and Patty brainstorm ideas to reduce yet another dependency on Brent when something starts to bother me. Erik called WIP, or work in process, the "silent killer," and that inability to control WIP on the plant floor was one of the root causes for chronic due-date problems and quality issues.

We just discovered that sixty percent of our changes didn't complete as scheduled.

Erik had pointed to the ever-growing mountain of work on the plant floor as an indication that the plant floor managers had failed to control their work in process.

I look at the mountain of change cards piled up on today's date on the calendar, as if a giant snowplow had pushed them all forward. Suddenly, it's starting to seem like the picture Erik painted on the plant floor eerily describe the state of my organization.

Can IT work really be compared to work on a plant floor?

Patty interrupts my deep contemplation as she asks, "What do you think?"

I look back up at her. "For the last couple of days, only forty percent of the scheduled changes were completed. The rest are being carried forward. Let's assume that this continues for a bit longer, while we figure out how to disseminate all the Brent knowledge.

"We have 240 incomplete changes this week. If we have four hundred new changes coming in next week, we'll have 640 changes on the schedule next week!"

"We're like the Bates Motel of changes," I say in disbelief. "Changes go in but never come out. Within a month, we'll have thousands of changes that we'll be carrying around, all competing to get implemented."

Patty nods, "That's *exactly* what's bothering me. We don't have to wait a month to see thousands of changes—we're already tracking 942 changes. We'll cross over one thousand pending changes sometime next week. We're running short of space to post and store these change cards. So why are we going through all this trouble if the changes aren't even going to get implemented!"

I stare at all the cards, willing them into giving me an answer.

An ever-growing pile of inventory trapped on the plant floor, as high

as the forklifts could stack it.

An ever-growing pile of changes trapped inside of IT Operations, with us running out of space to post the change cards.

Work piling up in front of the heat treat oven, because of Mark sitting at the job release desk releasing work.

Work piling up in front of Brent, because of…

Because of what?

Okay, if Brent is our heat treat oven, then who is our Mark? Who authorized all this work to be put in the system?

Well, we did. Or rather, the CAB did.

Crap. Does that mean we did this to ourselves?

But changes need to get done, right? That's why they're changes. Besides, how do you say no to the onslaught of incoming work?

Looking at the cards piling up, can we afford not to?

But when was the question ever asked whether we should accept the work? And on what basis did we ever make that decision?

Again, I don't know the answer. But, worse, I have a feeling that Erik may not be a raving madman. Maybe he's right. Maybe there is some sort of link between plant floor management and IT Operations. Maybe plant floor management and IT Operations actually have similar challenges and problems.

I stand up and walk to the change board. I start thinking aloud, "Patty is alarmed that more than half our changes aren't completing as scheduled, to the extent that she's wondering whether this whole change process is worth the time we're investing in it.

"Furthermore," I continue, "she points out that a significant portion of the changes can't complete because Brent is somehow in the way, which is partially because we've directed Brent to reject all non-Phoenix work. We think that reversing this policy is the wrong thing to do."

I take a mental leap, following my intuition. "And I'd bet a million dollars that this is the exact wrong thing to do. It's because of this process that, for the first time, we're even aware of how much scheduled work isn't getting done! Getting rid of the process would just kill our situational awareness."

Feeling like I'm getting on a roll, I say adamantly, "Patty, we need a better understanding of what work is going to be heading Brent's way. We need to know which change cards involve Brent—maybe we even

make that another piece of information required when people submit their cards. Or use a different color card—you figure it out. You need to inventory what changes need anything from Brent, and try to satisfy it instead with the level 3 engineers. Failing that, try to get them prioritized so we can triage them with Brent."

As I'm talking, I'm more confident that we're heading down the right path. At this point, we might not be fixing the problem, but at least we'll be getting some data.

Patty nods, her expression of concern and despair now gone. "You want me to get my arms around the changes that are heading to Brent, indicating them on the change cards and maybe even requiring this information on all new cards. And to get back to you when we know how many changes are Brent-bound, what the changes are, and so forth, along with a sense of what the priorities are. Did I get that right?"

I nod and smile.

She types away on her laptop. "Okay, I've got it. I'm not sure what we'll find out, but it's better than anything I came up with by a long shot."

I look over at Wes, "You look concerned—anything you want to share?"

"Uh…" Wes says eventually. "There's not much to share, really. Except that this is a very different way of working than anything I've seen in IT. No offense, but did you switch medication recently?"

I smile wanly, "No, but I did have a conversation with a raving madman on a catwalk overlooking the manufacturing plant floor."

But if Erik was right about WIP in IT Operations, what else was he right about?

CHAPTER 12

• *Friday, September 12*

It's 7:30 PM on Friday, two hours after the Phoenix deployment was scheduled to start. And things are not going well. I'm starting to associate the smell of pizza with the futility of a death march.

The entire IT Operations team was assembled in preparation for the deployment at 4 PM. But there was nothing to do because we hadn't received anything from Chris' team; they were still making last minute changes.

It's not a good sign when they're still attaching parts to the space shuttle at liftoff time.

At 4:30 PM, William Mason, the QA director who works for Chris, had stormed into the Phoenix war room, livid and disgusted that no one could get all of the Phoenix code to run in the test environment. Worse, the few parts of Phoenix that were running were failing critical tests.

William started sending back critical bug reports to the developers, many of whom had already gone home for the day. Chris had to call them back in, and William's team had to wait for the developers to send them new versions.

My team wasn't just sitting around, twiddling our thumbs. Instead, we were frantically working with William's team to try to get all of

Phoenix to come up in the test environment. Because if they couldn't get things running in a test environment, we wouldn't have a prayer of being able to deploy and run it in production.

My gaze shifts from the clock to the conference table. Brent and three other engineers are huddling with their QA counterparts. They've been working frantically since 4 PM, and they already look haggard. Many have laptops open to Google searches, and others are systematically fiddling with settings for the servers, operating systems, databases, and the Phoenix application, trying to figure out how to bring everything up, which the developers had assured them was possible.

One of the developers had actually walked in a couple of minutes ago and said, "Look, it's running on my laptop. How hard can it be?"

Wes started swearing, while two of our engineers and three of William's engineers started poring through the developer's laptop, trying to figure out what made it different from the test environment.

In another area of the room, an engineer is talking heatedly to somebody on the phone, "Yes, we copied the file that you gave us… Yes, it's version 1.0.13… What do you mean it's the wrong version… What? When did you change that?… Copy it now and try again… Okay, look, but I'm telling you this isn't going to work… I think it's a networking problem… What do you mean we need to open up a firewall port? Why the hell didn't you tell us this two hours ago? Goddamnit!"

He then slams the phone down hard, and then pounds the table with his fist, yelling, "Fucking developers!"

Brent looks up from the developer laptop, rubbing his eyes with fatigue. "Let me guess. The front-end can't talk to the database server because someone didn't tell us we need to open a firewall port?"

The engineer nods with exhausted fury, and says, "I cannot freaking believe this. I was on the phone with that jackass for twenty minutes, and it never occurred to him that it wasn't a code problem. This is FUBAR."

I continue to listen quietly, but I'm nodding in agreement at his prognosis. In the Marines, we used the term FUBAR, meaning "fucked up beyond all recognition."

Watching tempers fray, I look at my watch: 7:37 PM.

It's time to get a management gut check from my team. I round up Wes and Patty and look around for William. I find him staring over the

shoulder of one of his engineers. I ask him to join us.

He looks puzzled for a moment, because we don't normally interact, but he nods and follows us to my office.

"Okay, guys, tell me what you think of this situation," I ask.

Wes speaks up first, "Those guys are right. This is FUBAR. We're still getting incomplete releases from the developers. In the past two hours, I've already seen two instances when they've forgotten to give us several critical files, which guaranteed that the code wouldn't run. And as you've seen, we still don't know how to configure the test environment so that Phoenix actually comes up cleanly."

He shakes his head again. "Based on what I've seen in the last half hour, I think we've actually moved backward."

Patty just shakes her head with disgust and waves her hand, adding nothing.

I say to William, "I know we haven't worked much together, but I'd really like to know what you think. How's it looking from your perspective?"

He looks down, exhaling slowly and then says, "I honestly have no idea. The code is changing so fast that we're having problems keeping up. If I were a betting man, I'd say Phoenix is going to blow up in production. I've talked with Chris a couple of times about stopping the release, but he and Sarah ran right over me."

I ask him, "What do you mean by you 'can't keep up?'"

"When we find problems in our testing, we send it back to Development to have them fix it," he explains. "Then they'll send back a new release. The problem is that it takes about a half hour to get everything set up and running, and then another three hours to execute the smoke test. In that time, we'll have probably gotten three more releases from Development."

I smirk at the reference to smoke tests, a term circuit designers use. The saying goes, "If you turn the circuit board on and no smoke comes out, it'll probably work."

He shakes his head and says, "We have yet to make it through the smoke test. I'm concerned that we no longer have sufficient version control—we've gotten so sloppy about keeping track of version numbers of

the entire release. Each time they fix something, they're usually breaking something else. So, they're sending single files over instead of the entire package."

He continues, "It's so chaotic right now that even if by some miracle Phoenix does pass the smoke test, I'm pretty sure we wouldn't be able to replicate it, because there are too many moving parts."

Taking off his glasses, he says with finality, "This is probably going to be an all-nighter for everyone. I think there's genuine risk that we won't have anything up and running at 8 AM tomorrow, when the stores open. And that's a big problem."

That is a huge understatement. If the release isn't finished by 8 AM, the point of sale systems in the stores used to check out customers won't work. And that means we won't be able to complete customer transactions.

Wes is nodding. "William is right. We're definitely going to be here all night. And performance is worse than even I thought it would be. We're going to need at least another twenty servers to spread the load, and I don't know where can find so many on such short notice. I have some people scrambling to find any spare hardware. Maybe we'll even have to cannibalize servers in production."

"Is it too late to stop the deployment?" I ask. "When exactly is the point of no return?"

"That's a very good question." Wes answers slowly. "I'd have to check with Brent, but I think we could stop the deployment now with no issues. But when we start converting the database so it can take orders from both the in-store POS systems and Phoenix, we are committed. At this rate, I don't think that will be for a couple of hours yet."

I nod. I've heard what I've needed to hear.

"Guys, I'm going to send out an e-mail to Steve, Chris, and Sarah to see if I can delay the deployment. And then I'm going to find Steve. Maybe I can get us one more week. But, hell, even getting one more day would be a win. Any thoughts?"

Wes, Patty, and William all just shake their heads glumly, saying nothing.

I turn to Patty. "Go work with William to figure out how we can get some better traffic coordination in the releases. Get over to where the developers are and play air traffic controller, and make sure everything

is labeled and versioned on their side. And then let Wes and team know what's coming over. We need better visibility and someone to keep people following process over there. I want a single entry point for code drops, controlled hourly releases, documentation… Get my drift?"

She says, "It would be my pleasure. I'll head up to the Phoenix war room for starters. I'll kick down the door if that's what it takes and say, 'We're here to help…'"

I give them all a nod of thanks and head to my laptop to write my e-mail.

> From: Bill Palmer
> To: Steve Masters
> Cc: Chris Anderson, Wes Davis, Patty McKee, Sarah Moulton, William Mason
> Date: September 12, 7:45 PM
> Priority: Highest
> Subject: URGENT: Phoenix deployment in major trouble—my recommendation: 1 week delay
>
> Steve,
>
> First off, let me state that I want Phoenix in production as much as anyone else. I understand how important it is to the company.
>
> However, based on what I've seen, I believe we will not have Phoenix up by the tomorrow 8 am deadline. There is SIGNIFICANT RISK that this may even impact the in-store POS systems.
>
> After discussions with William I recommend that we delay the Phoenix launch by one week to increase the likelihood that Phoenix achieves its goals and avert what I believe will be a NEAR-CERTAIN disaster.
>
> I think we're looking at problems on the scale of the "November 1999 Thanksgiving Toys R Us" train-wreck, meaning multiday outages and performance problems that potentially put customer and order data at risk.
>
> Steve, I will be calling you in just a couple of minutes.
>
> Regards,
>
> Bill

I take a moment to collect my thoughts and call Steve, who answers on the first ring.

"Steve, it's Bill. I just sent out an e-mail to you, Sarah, and Chris. I cannot overstate how badly this rollout has gone so far. This is going to bite us in the ass. Even William agrees. My team is now extremely concerned that the rollout will not complete in time for the stores to open at 9 AM Eastern time tomorrow. That could disrupt the stores' ability to take sales, as well as probably cause multiday outages to the website.

"It's not too late to stop this train wreck," I implore. "Failure means that we'll have problems taking orders from anyone, whether they're in the stores or on the Internet. Failure could mean jeopardizing and screwing up order data and customer records, which means losing customers. Delaying by a week would just mean disappointing customers, but at least they'll come back!"

I hear Steve breathing on the phone and then reply, "It sounds bad, but at this point, we don't have a choice. We have to keep going. Marketing already bought weekend newspaper ads announcing the availability of Phoenix. They're bought, paid for, and being delivered to homes across the country. Our partners are all lined up and ready to go."

Flabbergasted, I say, "Steve, just how bad does it have to be for you to delay this release? I'm telling you that we could be taking a reckless level of risk in this rollout!"

He pauses for several moments. "Tell you what. If you can convince Sarah to postpone the rollout, let's talk. Otherwise, keep pushing."

"Are you kidding me? She's the one who's created this kamikaze mess. Goddamnit!"

Before I can stop myself, I hang up on Steve. For a brief moment, I consider calling him back to apologize.

As much as I hate to, I feel like I owe the company one last try to stop this insanity. Which means talking to Sarah in person.

Back in the Phoenix war room it's stuffy and rank from too many people sweating from tension and fear. Sarah is sitting by herself, typing away on her laptop.

I call out to her, "Sarah, can we talk?"

She gestures to the chair next to her, saying, "Sure. What's up?"

When I say in a lowered voice, "Let's talk in the hallway."

As we walk out together in silence, I ask her, "From up here, how

does it look like the release is going?"

She says noncommittally, "You know how these things go when we're trying to be nimble, right? There's always unforeseen things when it comes to technology. If you want to make omelets, you've got to be willing to break some eggs."

"I think it's a bit worse than your usual rollout. I trust you saw my e-mail, right?"

She merely says, "Yes, of course. And you saw my reply?"

Shit.

I say, "No. But, before you explain, I wanted to make sure you understood the implications and the risks we're posing to the business." And then I repeat almost word for word what I told Steve just minutes before.

Not surprisingly, Sarah is unimpressed. As soon as I stop talking, she says, "We've all been busting ass getting Phoenix this far. Marketing is ready, Development is ready. Everyone is ready but you. I've told you before, but apparently, you're not listening. Perfection is the enemy of good. We've got to keep going."

Marveling at this colossal waste of time, I just shake my head and say, "No, lack of competence is the enemy of good. Mark my words. We're going to be picking up the pieces for days, if not weeks, because of your dumb decisions."

As I storm back into the NOC, I read Sarah's e-mail, which makes me even more furious. I resist the urge to reply and add fuel to the fire. I also resist the emotional desire to delete it—I may need it to cover my ass later.

> From: Sarah Moulton
> To: Bill Palmer, Steve Masters
> Cc: Chris Anderson, Wes Davis, Patty McKee, William Mason
> Date: September 12, 8:15 PM
> Priority: Highest
> Subject: Re: URGENT: Phoenix deployment in major trouble—my recommendation: 1 week delay
>
> Everyone is ready but you. Marketing, Dev, Project Management all have given this project their all. Now it's your turn.
>
> WE MUST GO!
>
> Sarah

Suddenly, I panic for a brief moment that I haven't told Paige anything for hours. I send her a quick text message:

Night keeps getting worse. Am here for at least a couple more hrs. Will catch u in am. Love you. Wish me luck, darling.

I feel a tap on my shoulder and turn around to see Wes. "Boss. We've got a very serious problem."

The expression on his face is enough to make me scared. I quickly stand up and follow him to the other side of the room.

"Remember when we hit the point of no return around 9 PM? I've been tracking the progress of the Phoenix database conversion, and it's thousands of times slower than we thought it would be. It was supposed to complete hours ago, but it's only ten percent complete. That means all the data won't be converted until Tuesday. We are totally screwed."

Maybe I'm more tired than I thought but I'm not following him. I say, "Why is this a problem?"

Wes tries again, "That script needs to complete before the POS systems can come up. We can't stop the script and we can't restart it. Apparently, there's nothing we can do to make it go faster. I think we can hack Phoenix so that it can run, but I don't know about the in-store POS systems—we don't have any to test with in the lab."

Holy crap.

I think twice before I ask, "Brent?"

He just shakes his head. "I had him look at it for a couple of minutes. He thinks that someone turned on database indexing too soon, which is slowing down the inserts. There's nothing we can do about it now, though, without screwing up data. I put him back on the Phoenix deployment."

"How is everything else going?" I ask, wanting a full assessment of the situation. "Any improvement on performance? Any update on the database maintenance tools?"

"Performance is still terrible," he says. "I think there's a huge memory leak, and that's even without any users on it. My guys suspect we're going to have to reboot a bunch of the servers every couple of hours just to keep it from blowing up. Damned developers…"

He continues, "We've scrounged up fifteen more servers, some of them new and some yanked from various corners of the company. And now, believe it or not, we don't have enough space in the data center

racks to deploy them. We have to do a big re-cabling and racking job, moving crap around. Patty just put a call out and brought in a whole bunch of her people to help with that."

I feel my eyebrows hit my hairline in genuine surprise. And then I bend forward, laughing. I say, "Oh, dear God. We finally find servers to deploy, and now we can't find space to put them in. Amazing. We just can't get a break!"

Wes shakes his head. "You know, I've heard stories like this from my buddies. But this may turn out to be the mother of all deployment failures."

He continues, "Here's the most amazing part. We made a huge investment in virtualization, which was supposed to save us from things like this. But, when Development couldn't fix the performance problems, they blamed the virtualization. So we had to move everything back onto physical servers!"

And to think that Chris proposed this aggressive rollout date because virtualization would save our asses.

I wipe my eyes and force myself to stop laughing. "And how about the database support tools the developers promised us?"

Wes immediately stops smiling. "Absolute garbage. Our guys are going to have to manually edit the database to correct all the errors Phoenix is generating. And we're going to have to manually trigger replenishments. We're still learning about how much of this type of manual work Phoenix is going to require. It's going to be very error-prone and take a ton of people to do."

I wince, thinking about how this will tie up even more of our guys, doing menial work that the damned application should be doing. Nothing worries auditors more than direct edits of data without audit trails and proper controls.

"You're doing a great job here. Our top priority is finding out what the effect of the incomplete database conversion will be on the in-store POS system. Find someone who knows those things inside and out, and get their thoughts. If necessary, call someone on Sarah's team who handles day-to-day retail operations. Bonus points if you can get your hands on a POS device and server we can log into to see what the impact is ourselves."

"Got it," Wes says, nodding. "I know just the person to put on this."

I watch him head off and then look around, trying to figure out where I can be the most useful.

The morning light is starting to stream in from the windows, showing the accumulated mess of coffee cups, papers, and all sorts of other debris. In the corner, a developer is asleep under some chairs.

I had just run to the bathroom to wash my face and wipe the grime from my teeth. I feel a little fresher, but it's been years since I've pulled an all-nighter.

Maggie Lee is the Senior Director of Retail Program Management and works for Sarah. She is kicking off the 7 AM emergency meeting, and there are nearly thirty people packed into the room. In a tired voice, she says, "It's been a night of heroics, and I appreciate everyone doing what it takes to hit our Phoenix commitments.

"As you know, the reason for this emergency meeting is that something went wrong in the database conversion," she continues. "That means all the in-store POS systems will be down, which means that the stores will not have working cash registers. That means manual tills and manual card swipes."

She adds, "The good news is that the Phoenix website is up and running." She gestures at me and says, "My thanks to Bill and the entire IT Operations crew for making this happen."

Irritated, I say, "I'd far rather have those POS systems up instead of Phoenix. All hell is breaking loose in the NOC. All our phones have been lit up for the past hour, because people in the stores are all screaming that their systems aren't responding. It's like the Jerry Lewis Telethon down there. Like all of you, my voicemail has already filled up from the staff in our 120 stores. We're going to need to pull in more people just to man the phones."

A phone vibrates somewhere on the table, as if to punctuate my point.

"We need to get proactive here," I say to Sarah. "We need to send out a summary to everyone in the stores, as quickly as possible outlining what's happened and more specific instructions on how to conduct operations without the POS systems."

Sarah momentarily looks blank, and then says, "That's a good idea. How about you take a first cut at the e-mail, and we'll take it from there?"

Dumbfounded, I say, "What? I'm not a store manager! How about your group takes the first cut, and Chris and I can make sure it's accurate."

Chris nods.

Sarah looks around the room. "Okay. We'll get something together in the next couple of hours."

"Are you kidding me?" I shout. "Stores on the East Coast start opening in less than an hour—we need to get something out there now!"

"I'll take care of it," says Maggie, raising her hand. She immediately opens up her laptop and starts typing.

As I squeeze my head between my hands to see if I can make my headache hurt less, I wonder how much worse this rollout could get.

By 2 PM Saturday, it's pretty clear that the bottom is a lot further down than I thought possible.

All stores are now operating in total manual fallback mode. All sales are being processed by those manual credit card imprint machines, with the carbon paper imprints being stored in shoeboxes.

Store managers have had employees running to the local office supply stores to find more carbon paper slips for the card imprint machines, as well as to the bank, so they could give out correct change.

Customers using the Phoenix website are complaining about how it is either down or so slow as to be unusable. We have even managed to turn into a Twitter trending topic. All of our customers who had been excited to try our service, started complaining about our big IT fail after seeing our TV and newspaper ads.

Those customers who were able to order online had a rude awakening when they went to the store to pick up their order. That's when we discovered that Phoenix seemed to be randomly losing transactions, and in other cases, it was double- or triple-charging our customers' credit cards.

Furious that we've potentially lost integrity of the sales order data, Ann from Finance drove in and her team has now set up *another* war room across the hallway, fielding calls from the stores to handle problem orders. By noon, there were piles of papers from hundreds of pissed off customers that were being faxed in from the stores.

To support Ann, Wes brought in even more engineers to create some

tools for Ann's staff to use, in order to process the ever-growing backlog of screwed up transactions.

As I walk past the NOC table for the third time, I decide that I'm too exhausted to be of use to anyone. It's almost 2:30 PM

Wes is arguing with someone across the room, so I wait until he's done. I say to him, "Let's face up to the fact that this is going to be a multi-day ordeal. How are you holding up?"

He yawns and replies, "I managed to get an hour of sleep. Wow, you look terrible. Go home and get a couple of hours yourself. I've got a handle on everything here. I'll call you if anything comes up."

Too tired to argue, I thank him and leave.

I wake with a start when I hear my cell phone ring. I bolt up and grab my phone. It's 4:30 PM. Wes is calling.

I shake my head to gain some semblance of alertness and then answer, "What's up?"

I hear him say, "Bad news. In short, it's all over Twitter that the Phoenix website is leaking customer credit card numbers. They're even posting screenshots. Apparently, when you empty your shopping cart, the session crashes and displays the credit card number of the last successful order."

I've already jumped out of bed and am heading to the bathroom to get showered. "Call John. He's going to have kittens. There's probably some protocol for this, involving tons of paperwork and maybe even law enforcement. And probably lawyers, too."

Wes replies, "I already called him. He and his team are on the way in. And he is pissed. He's sounded just like that dude from *Pulp Fiction*. He even quoted the line about the day of reckoning and striking people down with great vengeance and furious anger."

I laugh. I love that scene with John Travolta and Samuel L. Jackson. It's not how I would have typecast our mild-mannered CISO, but as they say, you always have to watch out for the quiet ones.

I take a quick shower. I run into the kitchen and grab a couple of sticks of the string cheese our son loves to eat. I take these with me in the car and start my drive back into the office.

When I get on the highway, I call Paige. She answers on the first ring,

"Darling, where have you been? I'm at work and the kids are with my mom."

I say, "I was actually at home for an hour. I fell asleep the instant I crawled into bed, but Wes just called. Apparently, the Phoenix application started showing the entire world people's credit card numbers. It's a huge security breach, so I'm driving back in right now."

I hear her sigh disapprovingly. "You've been there for over ten years and you've never worked these kind of hours. I'm really not sure I like this promotion."

"You and me both, honey…" I say.

CHAPTER 13

By Monday, the Phoenix crisis is a public fiasco. We made it onto the front-page news of all the technology sites. There are rumors that someone from *The Wall Street Journal* was trying to get Steve for an on-the-record interview.

I start with a jolt when I think I hear Steve mention my name.

Completely disoriented, I look around and realize that I'm at work and that I must have fallen asleep while waiting for the Phoenix status meeting to start. I sneak a peek at my watch. 11:04 AM.

I have to look at my phone to figure out that it's Monday.

For a moment, I wonder where my Sunday went, but seeing Steve red-faced, and addressing the entire room makes me pay attention. "—don't care a goddamned bit whose fault this is. You can bet your ass that this won't ever happen again on my watch. But right now, I don't give two shits about the future—we are massively screwing our customers and shareholders. All I want to hear about is how we're going to dig ourselves out of this hole and restore normal business operations."

He turns and points at Sarah saying, "And you are not off the hook until every one of your store managers says that they can transact normally. Manual card swipes? What are we, in some Third World country?"

Sarah replies calmly, "I totally understand how unacceptable this is. I'm making sure my entire staff knows that they are accountable and responsible."

"No," Steve responds quickly and gravely. "You are ultimately accountable and responsible. Do not forget that."

My heart actually lightens for a moment, as I wonder whether Steve has broken free of Sarah's spell.

Turning his attention back to the entire room he says gravely, "When the store managers say that we're no longer operating on life support, I need fifteen minutes from each and every person who had a hand in this. I expect you to clear your calendar. No excuses.

"That means you, Sarah, Chris, Bill, Kirsten, Ann. And even you, John," he says, pointing at people as he names them.

Way to go, John. You picked a great time to finally get noticed by Steve.

He continues, "I'll be back in two hours after I get on a phone call with another goddamned journalist because of this mess!"

His door slam shakes the walls.

Sarah breaks the silence. "Well, you all heard Steve. Not only do we need to get the POS systems up, but we must also get the Phoenix usability issues fixed. The press is having a heyday with the clunkiness of the ordering interface and everything timing out."

"Are you out of your mind?" I say, leaning forward. "We are keeping Phoenix alive by sheer heroics. Wes wasn't joking when he said that we're proactively rebooting all the front-end servers every hour. We can't introduce any more instabilities. I propose code rollouts only twice a day and restricting all code changes to those affecting performance."

To my surprise, Chris immediately chimes in, "I agree. William, what do you think?"

William nods. "Absolutely. I suggest we announce to the developers that all code commits must have a defect number that corresponds to a performance problem. Anything that doesn't will get rejected."

Chris says, "That good enough for you, Bill?"

Pleased with the solution, I say, "Perfect."

Although Wes and Patty seem simultaneously pleased and taken aback by this sudden cooperation from Development, Sarah is not pleased. She says, "I don't agree. We've got to be able to respond to the

market, and the market is telling us that Phoenix is too hard to use. We can't afford to screw this up."

Chris replies, "Look, the time for usability testing and validation was months ago. If we didn't get it right the first time, we're not going to get it right without some real work. Have your product managers work on their revised mockups and proposals. We'll try to get it in as soon as we can after the crisis is over."

I affirm his position, saying, "I agree."

"You raise some good points. I approve," she says, apparently realizing that she wasn't going to win this argument.

I'm not sure Sarah is actually in a position to approve anything. But, luckily, the discussion turns quickly to how to regain POS functionality.

I revise my opinion of Chris upward a couple of notches. I still think he was a willing accomplice of Sarah's, but maybe I'll give him the benefit of the doubt.

Leaving the Phoenix war room, I see the room across the hallway where Ann and her team handle problem orders. I'm overcome by a sudden curiosity, genuinely wanting to see how they're doing.

I knock and walk in, still chewing a stale bagel from the meeting. Since Saturday, there has been an endless supply of pizzas, pastries, Jolt colas, and coffee to keep all the troops at their tasks.

Before me is a scene of frenetic activity. There are tables covered with piles of incoming faxes from the stores and twelve people walk from one to the next. Each fax is a problem order waiting to be routed to an army of finance and customer service representatives who have been press-ganged into service. Their job was to either to de-duplicate or reverse every one of these transactions.

In front of me, four finance people are sitting at another table, their fingers flying across ten-key calculators and open laptops. They're manually tabulating the orders, trying to calculate the scale of the disaster and doing reconciliations to catch any mistakes.

On the wall, they're keeping track of the totals. So far, five thousand customers have had either duplicate payments or missing orders, and there are an estimated twenty-five thousand more transactions that still need to be investigated.

I shake my head in disbelief. Steve is right. We massively screwed the customers this time. It's downright embarrassing.

On the other hand, I have to respect the operation the Finance people have put in place to handle the mess. It looks organized, with people doing what needs to get done.

A voice next to me says, "Another Phoenix clusterfuck, huh?"

It's John, taking in the scene like me. He's not saying "I told you so," but almost. With him, of course, is his ever-present black three-ring binder.

John smacks his face with his palm. "If this were happening to our competitor, I'd be laughing my ass off. I told Chris over and over about this possibility, but he wouldn't listen. We're paying for it now."

He walks up to one of the tables and starts looking over people's shoulders. I see his body suddenly tense as he picks a pile of papers up. He flips through the papers, his face ashen.

He returns to where I'm standing, and whispers, "Bill, we've got a major problem. Outside. Now."

"Look at this order slip," he hisses as we stand outside. "Do you see the problem here?"

I look at the page. It's a scanned order slip, slanted and low-resolution. It's for a purchase of various auto parts, and the dollar amount seems reasonable at $53.

I say, "Why don't you just tell me?"

John points to a handwritten number, scrawled by the scanned credit card and customer signature. "That three-digit number is the CVV code on the back of the credit card. That's there to prevent credit card fraud, and it's stored on track 2 of the magnetic card stripe. Under the Payment Card Industry rules, we are not allowed to store or transmit anything on track 2. Even possessing this is an automatic cardholder data breach and an automatic fine. Maybe even front-page news."

Oh, no. Not again.

He continues, as if reading my mind, "Yeah, but worse this time. Instead of just being on the local news, imagine Steve being splashed on the front page of every market where we have customers and stores. And then flying to DC to be grilled by senators, on behalf of all their outraged constituents."

He continues, "This is really serious. Bill, we've got to destroy all of

this information immediately."

I shake my head, saying, "No way. We've got to process every one of those orders, so that we don't charge or even double-charge our customers. We're obligated to do this, otherwise we're taking money from them that we'll eventually need to return."

John puts his hand on my shoulder, "That may seem important, but that's only the tip of the iceberg. We're already in deep shit because Phoenix leaked cardholder data. This may be just as bad. We get fined according to the number of cardholders affected."

He gestures at all the papers, saying, "This could more than double our fines. And you think our audits are bad now? This will make them ten times more painful, because they'll classify us as a Level 1 merchant for the rest of eternity. They may even raise our transaction fees from three percent to—who knows how high? That could halve our retail store profit margins and—"

He stops mid-sentence and opens up his three-ring binder to a calendar. "Oh, shit! The PCI auditors are on-site *today* doing a business process walk-through. They're on the second floor, interviewing the order administration staff about our operations. They're even supposed to use this conference room!"

"You've got to be kidding me," I say as the feeling of panic starts to set in, which amazes me considering that it's been three days of constant adrenaline.

I turn to look through the window of the conference door and see very clearly all the finance people handling all the customer problem orders. Shit.

"Look," I say, "I know that sometimes people think you're not on our side, but I really need your help. You've got to keep the auditors off this floor. Maybe even out of this building. I'll put up some curtains on the windows, or maybe even barricade the door."

John looks at me and then nods. "Okay, I'll handle the auditors. But I still don't think you fully understand. As the custodians of cardholder data, we cannot allow hundreds of people to have access to it. The risk of theft and fraud is too high. We've got to destroy the data immediately."

I can't help but laugh for a moment at the endless stream of problems.

Forcing myself to focus, I say slowly, "Okay, I'll make sure the Finance people understand this and handle it. Maybe we can get them

all scanned and shipped to an offshore firm for them to enter."

"No, no, no. That's even worse!" he says. "Remember, we're not allowed to transmit it, let alone send it to send it to a third party. Understand? Look, just so we can claim plausible deniability, I'm going to pretend I didn't hear that just now. You've got to figure out how to destroy all this prohibited data!"

I get pissed off at John's mention of plausible deniability, regardless of whether it was well intentioned or not. I take a deep breath and say to him, "Keep those auditors off this floor, and I'll worry about the card imprints. Okay?"

He nods and says, "Roger. I'll call you when I park the auditors somewhere safe."

As I watch him walk quickly down the hallway to the stairway, I keep thinking to myself, "He's only doing his job. He's only doing his job."

I swear under my breath and turn back around to look back at the conference room. And now I see the big printed sign hanging on the door, proclaiming "Phoenix pos Recovery War Room."

Suddenly, I feel like I'm in the movie *Weekend at Bernie's*, where some teenage boys keep trying to hide or disguise a dead body from a hit man. Then I wonder if this is more like the massive around-the-clock shredding operation that allegedly happened at the offices of Arthur Andersen, the audit firm investigated after Enron failed. Am I complicit in destroying important evidence?

What a mess. I shake my head, and walk back into the conference room to deliver the bad news.

I finally get back down to the noc at 2:30 pm, and survey the carnage as I make my way to my office. Seven extra tables have been set up to make more meeting spaces, and there are people assembled around each of them. Empty pizza boxes are piled up on many of the tables and in one corner of the room.

I take a seat behind my desk, sighing in relief. I spent almost an hour with Ann's team on the cardholder data issue, and then another half hour arguing with them that this is really their problem, not mine. I told them that I could help, but that my team was too tied up trying to keep Phoenix running to take any more responsibility.

I realize with some amazement that this may have been the first time I've been able to say no to anyone in the company since I started in this role. I wonder if I could have done it if we weren't the people almost single-handedly keeping our store order entry systems up.

As I ponder this, my phone rings. It's John. I answer quickly, wanting an update on the auditor issue. "Hey, John. How's it going?"

John replies, "Not terrible. I've got the auditors set up right next to me, here in Building 7. I've rearranged it so that all the interviews will be done here. They won't go anywhere near the Phoenix war room, and I've told the Building 9 security people explicitly not to let them past the front desk."

I chuckle at seeing John bend all the rules. "That's great. Thanks for pulling all that together. Also, I think Ann could use your help figuring what exactly it takes to stay in compliance with the cardholder data regulations. I helped as best I could, but…"

John says, "No problem. I'm happy to assist."

He hesitates for a couple of moments. "I hate to bring it up now, but you were supposed to give internal audit the sox-404 response letter today. How is that coming along?"

I burst out in laughter. "John, our plan was to get that report done over the weekend after the Phoenix deployment. But, as you know, things didn't quite go as planned. I doubt anyone has worked on it since Friday."

In a very concerned voice, John says, "You know that the entire audit committee looks at this, right? If we blow this deadline, it's like a red flag to everyone that we have severe control issues. This could drive up the length of the external audit, too."

I say as reasonably as I can, "Trust me, if there was anything I could do, I would. But right now, my entire team has been working around-the-clock to support the Phoenix recovery efforts. Even if they completed the report, and all I had to do was bend over and pick it up, I couldn't. We're that far underwater."

As I'm talking, I realize how liberating it is to state that my team is absolutely at capacity and that there aren't any calories left over for any new tasks, and people actually believe me.

I hear John say, "You know, I could free two engineers up. Maybe they could help do some of the legwork around estimating the remediation

effort? Or if you need it, we could even put them into the technical resource pool to help with recovery. They're both very technical and experienced."

My ears perk up. We've got everyone deployed doing all sorts of things that this emergency requires and most have pulled at least one all-nighter. Some are monitoring fragile services and systems, others are helping field phone calls from the store managers, others are helping QA build systems and write tests, some are helping Development reproduce problems.

I say immediately, "That would be incredibly helpful. Send Wes an e-mail with a couple of bullet points on each of your engineers. If he doesn't have an urgent need for their skills, I'll task them on generating the remediation estimates, as long as it doesn't require interrupting anyone working Phoenix."

"Okay, great," John says. "I'll send the info to Wes later today, and I'll let you know what he and I decide to do."

He signs off, and I consider the potential stroke of good fortune that someone could be working on the audit response.

I then wonder if the fatigue is getting to me. Something is really screwy in the world when I'm finding reasons to thank Development *and* Security in the same day.

CHAPTER 14

• *Tuesday, September 16*

By late Monday night, we had stabilized the situation. Working with Chris' team, the stores finally had working cash registers again, but everyone knows it's only a temporary fix. At least we don't need to keep sensitive cardholder data anymore, much to John's relief.

It's 10:37 AM, and I'm standing outside of Steve's office with Chris. He's leaning against the wall, looking pensively at the floor. Ann, John, and Kirsten are also here, waiting for their turn, like penitent students waiting outside the principal's office in elementary school.

The door to Steve's office opens and Sarah walks out. She looks ashen faced and on the verge of tears. She was the first to go in, and her session didn't even take the whole ten minutes.

She closes the door behind her, blows out her breath, and says to Chris and me, "You're next."

"Here goes nothing…" I say, opening the door.

Steve stands by the window, looking out over the corporate campus. "Take a seat, gentlemen."

When we're sitting down, Steve starts to pace in front of us. "I've talked with Sarah. As the project leader, I'm holding her responsible for the success or failure of Phoenix. I have no idea if I have a leadership

problem, or if she just has the wrong people on the bus."

My jaw drops. Did Sarah somehow manage to weasel her way out of her part in this disaster? This whole thing is her fault!

Steve turns to Chris. "We put over $20 million into this project, and the lion's share went to your team. From where I'm standing, we'd be better off if we had nothing to show for it. Instead, I have half my company scrambling to pick up the wreckage from the damage you caused."

Turning back to both of us, he continues, "In the good years, we were a five percent net margin company. That meant to make $1 million, we had to sell $20 million in products. Who knows how many sales we lost over the weekend and how many loyal customers we've lost forever."

He starts pacing again. "We've done a terrible disservice to our customers. They're the people who need to fix their cars to get to work. They're fathers working on projects with their kids. We've also screwed some of our best suppliers and clients.

"To appease the people who actually used Phoenix, Marketing is now giving away $100 vouchers, which could cost us millions of dollars. Goddamnit, we're supposed to take money from customers, not the other way around!"

As a former sergeant, I know there's a time and place for dressing someone down. But this is too much. "No offense, sir, but this is supposed to be news to me? I called you, explaining what would happen, asking you to delay the launch. You not only blew me off, you told me to try to convince Sarah. Where's your responsibility in all of this? Or have you outsourced all your thinking to her?"

As I'm talking, I realize I may be making a big mistake by saying what I really think. Maybe it's from weeks of crisis-fueled adrenaline, but it feels good rattling Steve's cage. Really good.

Steve stops pacing, pointing his finger at my forehead. "I know more about responsibility than you may learn in your entire lifetime. I'm tired of your Chicken Little routine, screaming that the sky is falling and then happily saying 'I told you so' afterward. I need you to come to me with some actual solutions."

Leaning into him, I say, "I told you *exactly* what was going to happen when your sidekick Sarah brought up this crazy plan almost two weeks ago. I proposed to you a timeline that would have prevented all this from happening. You tell me that I could have done better? I'm all ears."

With exaggerated respect, I add, "*Sir.*"

"I'll tell you what I need from you," he replies calmly. "I need the business to tell me it's no longer being held hostage by you IT guys. This has been the running complaint the entire time I've been CEO. IT is in the way of every major initiative. Meanwhile, our competitors pull away from us, leaving us in the dust. Dammit, we can't even take a crap without IT being in the way."

He takes a deep breath. "None of this is why you're here today. I called you in to tell you two things. First, thanks to this latest IT screwup, the board has insisted that we investigate splitting up the company. They think the company is worth more sold off in pieces. I'm against this, but they've already got consultants in our panties investigating its feasibility. There's nothing I can do about that.

"Second, I'm done playing Russian roulette with IT. Phoenix just shows me that IT is a competency that we may not be able to develop here. Maybe it's not in our DNA. I've given Dick the green light to investigate outsourcing all of IT and asked him to select a vendor in ninety days."

Outsourcing all of IT. Holy shit.

That means everyone in my entire department may not have jobs anymore.

That means that I may not have a job anymore.

In a sudden and sobering instant, I realize that the feeling of elation and confidence I felt rattling Steve's cage was only an illusion. He has all the power. With a wave of his pen, he could outsource all of us to the lowest-cost bidder from some random corner of the planet.

I glance over at Chris, and he looks as shaken as I feel.

Steve continues, "I expect you'll give Dick all the help he requires. If you can pull off some sort of miracle during the next ninety days, we'll consider keeping IT in-house."

"Thank you, gentlemen. Please send in Kirsten," he says with finality.

"*Sorry I'm late,*" *I say,* slumping down in the booth across from Chris.

Shell-shocked after our meeting with Steve, he and I decided to meet for lunch. In front of him is some sort of fruity drink with an umbrella. I always figured him to be a blue-collar drinker—more like Pabst Blue

Ribbon, not some bachelorette party mixed drink.

He laughs humorlessly. "Trust me. You showing up ten minutes late is the least of my problems. Get yourself a drink."

Paige tells me repeatedly that I shouldn't trust this guy. She has a great instinct for people, but when it comes to me, she's embarrassingly protective, which makes me laugh. I'm the ex-Marine, after all. She's just a "nice nurse."

"Any pilsner you have on tap, please," I say to the waitress. "And a scotch and water, too. It's been a rough day."

"That's what I heard. No problem at all, sweetie," she replies, laughing. To Chris, she asks, "Another mai tai for you?"

He nods, handing her his empty glass. So that's what a mai tai looks like. I've never tried one. We Marines are very self-conscious about what we're seen drinking.

Chris raises his water glass and says, "To having a common death sentence."

I smile wanly and raise my glass. Feeling obligated to inject some optimism, I say, "And here's to figuring out how we get a stay of execution from the governor."

We clink glasses.

"You know, I've been thinking," Chris says. "Maybe my group being outsourced wouldn't be the worst thing in the world. I've been in software development for virtually my entire career. I'm used to everyone demanding miracles, expecting the impossible, people changing requirements at the last minute, but, after living through this latest nightmare project, I wonder if it might be time for a change…"

I can't believe it. Chris has always been confident, even arrogant, seeming to really love doing what he does. "What kind of change? You thinking about opening a mai tai bar in Florida or something like that?"

Chris shrugs. When he looks down, I can see the huge bags underneath his eyes and the fatigue in his face. "I used to love this work, but it's gotten so much more difficult over the last ten years. Technology keeps changing faster and faster, and it's nearly impossible to keep up anymore."

The waitress comes back with our drinks. Part of me feels guilty about drinking during lunch on company time, but I figure I've earned it, having given enough of my personal time to the company over the

last two weeks. Chris takes a long swig, and so do I.

He continues, "It's crazy what programmers, and even managers like me, have to learn every couple of years. Sometimes it's a totally new database technology, a new programming or project management method, or a new technology delivery model, like cloud computing.

"Just how many times can you throw out everything you know to keep up with the latest new-fangled trend? I look in the mirror every once in awhile, asking myself, 'Will this be this year that I give up? Will I spend the rest of my career doing COBOL maintenance or become just another has-been middle-manager?'"

I laugh sympathetically. I chose to be in the technology backwaters. I was happy there. That is, until Steve threw me back into the big, shark-infested pool.

Shaking his head, he continues, "It's harder than ever to convince the business to do the right thing. They're like kids in a candy store. They read in an airline magazine that they can manage their whole supply chain in the cloud for $499 per year, and suddenly that's the main company initiative. When we tell them it's not actually that easy, and show them what it takes to do it right, they disappear. Where did they go? They're talking to their Cousin Vinnie or some outsourcing sales guy who promises they can do it in a tenth of the time and cost."

I laugh. "A couple of years ago, someone in Marketing asked my group to support a database reporting tool that one of their summer interns wrote. It was actually pretty brilliant, given that she only had a couple of months to work on it, and then it started being used in daily operations. How in the hell do you support and secure something that's written in Microsoft Access? When the auditors found out that we couldn't secure access to all the data, we spent weeks cobbling together something that satisfied them.

"It's like the free puppy," I say. "It's not the upfront capital that kills you, it's the operations and maintenance on the back end."

Chris cracks up. "Yes, exactly! They'll say, 'The puppy can't quite do everything we need. Can you train it to fly airplanes? It's just a simple matter of coding, right?'"

After we order food, I tell him about how reluctant I was to accept my new role and my inability to get my arms around all the work that my group has committed to.

"Interesting," Chris says. "You know, we're struggling, too. We've never had so many problems hitting our ship dates. My engineers keep getting pulled off of feature development to handle escalations when things break. And deployments keep taking longer and longer. What used to take ten minutes to deploy starts taking an hour. Then a full day, then an entire weekend, then four days. I've even got some deployments that are now taking over a week to complete. Like Phoenix."

He continues, "What use is it having all these offshore developers building features if we aren't getting to market any faster? We keep lengthening the deployment intervals, so that we can get more features deployed in each batch."

He laughs. "I was in a meeting last week where the feature backlog was so long, the product managers were arguing about which features will get worked on three years from now! We can't even plan effectively for one year, let alone three years! What's the use?"

I listen intently. What's happening with Phoenix is a combination of the need to deliver needed features to market, forcing us to take short-cuts, which are causing ever-worsening deployments. He's put his finger on a very important downward spiral we need to break out of.

"Listen, Bill, I know it's a little late to say this, but better late than never. I'm really sorry about my part in this Phoenix fiasco. Sarah came to me a week before Kirsten's project management meeting, asking me all sorts of questions. She asked when would be the soonest that we could be code-complete. I had no idea she was going to interpret that as the go-live date, especially with Steve in the room. William predicted that it was going to be a disaster, and I should have listened to him, too. That was bad judgment on my part."

I look into his eyes for a couple of long moments. I finally decide to believe him. I nod and say, "Thanks. Don't worry about it."

I add, "But don't do it again. If you do, I'll break both of your legs, and then I'll have Wes attend every one of your staff meetings. I'm not sure which is more motivating."

Chris smiles, raising his glass. "Here's to never letting this happen again, eh?"

A good thought. I smile and clink my glass against his.

I finish my second beer. "I'm really worried that Sarah is going to try to blame this whole thing on us, you know?"

Chris looks up from his glass and says, "She's like Teflon. Nothing sticks to her. We've got to stick together. I've got your back, and I'll give you a heads-up if I see her trying some weird political crap again."

"Likewise," I say emphatically.

I look at my watch. It's 1:20 PM. It's time to head back, so I signal our waitress for the check. "This has been great. We need to do this more often. How about we meet once a week, and figure out what we need to do to head off this boneheaded idea to outsource all of IT?"

"Absolutely," he says. "I don't know about you, but I'm not going to roll over on this. I'm going down swinging."

With that, we shake hands.

Even after eating some food, I feel buzzed. I wonder where I can find some breath mints so I won't smell like I spent the morning in a distillery.

I look at my schedule on my phone, and move all my meetings to later in the week. At 4 PM, I'm still in my office when I get an e-mail from Chris.

> From: Chris Allers
> To: Bill Palmer
> Date: September 16, 4:07 PM
> Subject: Throwing a little post-Phoenix party
>
> Hey, Bill…
>
> It was good meeting for lunch—I had a great time.
>
> We're throwing a little impromptu party to celebrate the completion of Phoenix. It's nothing elaborate, but I've ordered a beer keg, some wine and food, and we're congregating right now in the Bldg 7 lunchroom.
>
> We'd love to have your folks join us. In my mind, it was one of the best team efforts I've seen in this company. I ordered enough booze for everyone on your team, too. :-)
>
> See you there,
> Chris

I genuinely appreciate Chris' gesture, and I think my team will, too. Especially Wes. I forward the e-mail to Wes and Patty, telling them to encourage everyone to make an appearance. They deserve it.

A couple of moments later my phone vibrates. I look down and read a reply from Wes:

> From: Wes Davis
> To: Bill Palmer, Patty McKee
> Date: September 16, 4:09 PM
> Subject: Re: Fwd: Throwing a little post-Phoenix party
>
> What a jackass. Most of my guys won't be able to make it. We're still busy fixing all the bad transaction data that their shitty code generated.
>
> Must be nice to have the luxury of celebrating. "Mission Accomplished" and all that, right?
>
> W

I groan. Although the crisis might be over for Chris' guys on the upper floors, the people like us in the basement are still bailing water.

Still, I think it's important that we get our guys to drop by the party. In order to succeed, we need to create these relationships with Chris' team. Even if it's only for a half hour.

I grit my teeth and call Wes. As Spock once said, "Only Nixon could go to China." And I guess I'm Nixon.

CHAPTER 15

- *Wednesday, September 17*

Even though I can't take the entire day off, I take Paige out for breakfast. She's been holding things down on the home front single-handedly while I have spent every waking hour at work.

We're at Mother's, one of our favorite breakfast restaurants. We were here on their opening day almost eight years ago. The owner has since hit the big time. Not only has her restaurant become a local favorite, but she's written a cookbook, and we saw her all over TV during her book tour.

We are so happy to see her success. And I know Paige loves it when the owner recognizes us, even when it's crowded.

I look in Paige's eyes as she sits across from me at the table. The restaurant is surprisingly crowded on a Wednesday morning. People having business meetings and local hipsters doing—well, whatever local hipsters do in the mornings. Working? Playing? I genuinely have no idea.

She says, holding the mimosa in her hands, "Thanks for taking some time off—are you sure you can't spend the rest of the day with me?"

At first, I almost didn't order one for myself, because I didn't want to have anything alcoholic on a workday. But, for the second day in a row,

I find myself saying, "Screw it."

Drinking my orange juice and champagne, I smile sadly, shaking my head. "I really wish I could, honey. If we were in Development, I'd give the entire team the day off like Chris did. But, in Operations, we're still finishing cleaning up from the Phoenix fiasco. I have no idea when life will be normal again."

She shakes her head slowly. "I can't believe that this is only your third week. You've changed. I'm not complaining, but I haven't seen you this stressed out since…"

She looks up for a moment, reviewing her memories. She looks back at me and says, "Ever! Half the time we're driving in the car, you have this distant look on your face. The rest of the time you're clenching your jaw, like you're re-enacting some terrible meeting in your head. You never hear what I'm saying, because you're so preoccupied by work."

I start to apologize, but she cuts me off. "I'm not complaining. I don't want to wreck this nice moment while we're enjoying some time away from work and the kids. But, when I think about how happy you were before you accepted this role, I wonder why you're doing it."

I purse my lips together. Even with all the trauma in the past couple of weeks, I feel like the organization has been better off as a result of my contribution. And even with the imminent threat of being outsourced, I'm glad that I'm one of the people trying to fend them off.

And yet, for over five years, I was one of the very few people able to maintain any amount of work-life balance. And now that balance is completely gone.

A fellow NCO in the Marines once told me that his priorities were the following: provider, parent, spouse, and change agent. In that order.

I think about that. First and foremost, my most important responsibility is to be the provider for my family. My pay raise will help us get our debt paid down, and we can start saving money again for our children's college education like we always wanted to. It'd be difficult to give that up and go back to feeling like we're just treading water.

We both suspect that our house is now worth less than we paid for it. We tried to sell it a couple of years ago so we could move across town to be closer to her parents. But after nine months, we took it off the market.

With my promotion, we can pay off our second mortgage sooner. And maybe, just maybe, if things go well, in a few years Paige might be

able to stop working.

But is it worth having to deal with Steve's raving demands for the impossible, day in and day out?

Even worse: having to deal with that nutcase, Sarah.

"See? You're doing it again. Let me guess…" Paige says, interrupting my thoughts. "You're thinking about some meeting that you've had with Steve, and how he's turned into a total asshole that no one can reason with. Except for that nutcase, Sarah."

I laugh. "How did you know?"

She smiles. "It's so easy. You start looking off somewhere, and then your shoulders and jaw tense up, and your lips press together."

I laugh again.

Paige's expression turns sad. "I keep wishing that they picked someone else for this job. Steve knew exactly how to get you to say yes. He just made it sound like it was your duty to save his job and the company."

I nod slowly. "But, honey, now it's really true—if they outsource all of IT, almost two hundred people in my group could be out of a job or working for some faceless outsourcing firm. And another two hundred people in Chris' organization. I really feel like I can keep that from happening."

She looks dubious, saying, "You really think you and Chris can stop them? Based on what you've said, it sure sounds like they've already made up their mind."

After I drop off a subdued Paige at home, I take a moment in the driveway to look at my phone before driving into work.

I'm surprised when I see an upbeat e-mail from Wes.

> From: Wes Davis
> To: Bill Palmer, Patty McKee
> Date: September 19, 9:45 am
> Subject: FW: Whew! A change management close call!
> Check this out, guys. One of the DBAs sent this out to all the other engineers this morning.
> >>> Begin forwarded message:
> Guys, the new change process saved our bacon this morning.

> Today, we had two groups simultaneously making changes to the materials management database and application servers. Neither group knew about the other.
>
> Rajiv spotted the potential collision on the change wall. We decided that my changes would go in first, and I'd call him when we were done.
>
> We could have totally made a mess of things.
>
> Keep those change cards coming, guys! It saved our butts today!
>
> Thanks to Rajiv, Tom, Shelly, and Brent —
>
> Robert

At last, some good news. One of the problems of prevention is that you rarely know about the disasters you averted.

But here we did. Nice.

And even better yet, it came from one of the engineers, not a manager.

When I get to my desk, I see the Post-It note on my docking station and smile. I carefully power on my laptop, wait patiently for two minutes for the login screen to come up before plugging it into the docking station.

No screaming alarm. Exactly as documented. Nice.

Someone knocks on my door.

It's Patty. "I'm glad I caught you. Do you have a minute? I think we have another problem."

"Sure," I say. "What's on your mind? Let me guess—more people complaining about change management?"

Patty shakes her head, looking grim. "A little more serious than that. Let's go to the Change Coordination Room?"

I groan. Every time Patty's summons me there, it's because of some new intractable problem. But problems, like dog poop left in the rain, rarely get better just by ignoring them.

I stand up and say, "Lead on."

When we get to the conference room, I look at the change board. Something looks very different. "Uh-oh," I say.

Patty looks at the board with me and says, "Uh-huh. Obvious, and yet, still kind of unexpected, right?"

I can only grunt in response.

On the board, up until last Thursday, it's pretty much as I remember it. On each day, there are somewhere between forty and fifty changes,

each marked completed. But on the days following, there are barely any changes posted at all. It's like someone just wiped all the cards clean off the board.

"Where did they go?"

She points at another board on the side of the room that she's labeled, "Changes To Be Rescheduled." There's a basket underneath, overflowing with piles and piles of index cards.

Presumably, six hundred of them.

Understanding starting to dawn on me, I ask, "And the reason none of the changes got completed is…"

Patty rolls her eyes. "Phoenix happened, that's what. All scheduled work went out the window. We mobilized almost anyone who could type to help. And only now are they being released back to their normal duties. You can see on the board that today's the first day that scheduled changes are starting to happen as planned again."

This seems important for some reason.

And then it hits me.

I had called Erik briefly to tell him that I had discovered three of the four categories of work: business projects, internal projects, and changes. He merely said that there was one more type of work, maybe the most important type, because it's so destructive.

And in a searing moment of insight, I think I know what the fourth category of work is.

And then suddenly, I don't. My tenuous understanding flickers briefly, and then goes out entirely.

I say, "Damn!"

Patty looks at me questioningly, but I ignore her while I try to recapture that fleeting moment of clarity.

I look at the portion of the change board with no cards on it. It really is like some giant hand swept all those change cards aside that we had so meticulously scheduled and arranged on the board. And we know what swept it aside: it was Phoenix blowing up.

But Phoenix isn't the fourth category of work.

Maybe what I'm looking for is like dark matter. You can only see it by what it displaces or how it interacts with other matter that we can see.

Patty called it firefighting. That's work, too, I suppose. It certainly kept everyone up at all hours of the night. And it displaced all the

planned changes.

I turn back to Patty and say slowly, "Let me guess. Brent didn't get any of his non-Phoenix change work completed either, right?"

"Of course not! You were there, right?" she says, looking at me like I had grown eight heads. "Brent was working around-the-clock on the recovery efforts, building all the new tooling to keep all the systems and data up. Everything else was put on the back-burner."

All the firefighting displaced all the planned work, both projects and changes.

Ah… Now I see it.

What can displace planned work?

Unplanned work.

Of course.

I laugh uproariously, which earns me a look of genuine concern from Patty, who even takes a step back away from me.

That's why Erik called it the most destructive type of work. It's not really work at all, like the others. The others are what you planned on doing, allegedly because you needed to do it.

Unplanned work is what prevents you from doing it. Like matter and antimatter, in the presence of unplanned work, all planned work ignites with incandescent fury, incinerating everything around it. Like Phoenix.

So much of what I've been trying to do during my short tenure as VP of IT Operations is to prevent unplanned work from happening: coordinating changes better so they don't fail, ensuring the orderly handling of incidents and outages to prevent interrupting key resources, doing whatever it takes so that Brent won't be escalated to…

I've been doing it mostly by instinct. I knew it was what had to be done, because people were working on the wrong things. I tried to take all necessary steps to keep people from doing wrong work, or rather, unplanned work.

I say, cackling and pumping my arms as if I had just scored a game-winning, sixty-yard field goal, "Yes! I see it now! It really is unplanned work! The fourth category of work is unplanned work!"

My ebullient mood is tempered when I look at Patty, who looks puzzled and genuinely concerned.

"I promise to explain later," I say. "Just what is it that you wanted me to see on the change board?"

She's taken aback, but points again at the void of completed changes for the past week. "I know you were concerned about when sixty percent of the changes weren't getting completed. So, I thought you'd really flip your lid when one hundred percent of the changes didn't complete. Right?"

"Yep. This is great work, Patty. Keep it up!" I say agreeably.

And then I turn around and head out the door, reaching for my cell phone. There's someone I need to call.

"Hey!" Patty calls out. "Aren't you going to fill me in?"

I yell over my shoulder, "Later! I promise!"

Back at my desk I search everywhere for that slip of paper that Erik gave me. I'm pretty sure I didn't throw it away, but I honestly didn't think that I would ever use it.

I hear Ellen say from behind me, "Need help with anything?"

And soon, both of us are scrounging all over my desk to find that little piece of paper.

"Is this it?" she asks, holding up something that she retrieved from my inbox.

I look more closely, and yes! It's the crumpled two-inch strip of paper that Erik gave me. It looks a gum wrapper.

Taking the piece of paper from her and holding it up, I say, "Great! Thank you so much for finding this—believe it or not, this may be the most important piece of paper I've gotten in years."

I decide to sit outside while I talk. In the bright autumn sunlight, I find a spot on a bench near the parking lot. As I sit down, there's not a cloud in the sky.

I call Erik, who answers on the first ring. "Hey, Bill. How are you guys doing after Phoenix crashed and burned so spectacularly?"

"Yeah, well… Things are improving," I say. "You may have heard that our POS systems went down, and we also had a small credit card number breach."

"Ha! 'Small credit card breach.' I like that. Like 'small nuclear reactor meltdown.' I've gotta write that one down," he says, snorting.

He's chuckling as though he predicted this level of calamity would occur, which, come to think of it, I suppose he did, in the conference

room when I first met him. Something about "clearing the calendar."

Just like clearing the change board, I realize. I kick myself for not picking up on his clue sooner.

"I trust you can tell me now what the four categories of work are?" I hear him ask.

"Yes, I think I can," I say. "At the plant, I gave you one category, which was business projects, like Phoenix," I say. "Later, I realized that I didn't mention internal IT projects. A week after that, I realized that changes are another category of work. But it was only after the Phoenix fiasco that I saw the last one, because of how it prevented all other work from getting completed, and that's the last category, isn't it? Firefighting. Unplanned work."

"Precisely!" I hear Erik say. "You even used the term I like most for it: *unplanned work*. Firefighting is vividly descriptive, but 'unplanned work' is even better. It might even be better to call it 'anti-work,' since it further highlights its destructive and avoidable nature.

"Unlike the other categories of work, unplanned work is recovery work, which almost always takes you away from your goals. That's why it's so important to know where your unplanned work is coming from."

I smile as he acknowledges my correct answer, and am oddly pleased that he validated my antimatter notion of unplanned work, as well.

He says, "What is this change board that you mentioned?"

I tell him about my attempts to get some sort of change process going and my attempt to elevate the discussion above how many fields there were on the change form, which then resulted in getting people to put their intended changes on index cards and our need to juggle them on the board.

"Very good," he says. "You've put together tools to help with the visual management of work and pulling work through the system. This is a critical part of the First Way, which is creating fast flow of work through Development and IT Operations. Index cards on a *kanban* board is one of the best mechanisms to do this, because everyone can see WIP. Now you must continually eradicate your largest sources of unplanned work, per the Second Way."

Until now, having been so wrapped up in defining what work is, I had forgotten about Erik and his Three Ways. I dismissed them before, but I'm now listening closely to his every word.

And over the next forty-five minutes, I find myself telling him the entire tale of my short tenure. I'm interrupted only by Erik's loud laughs and guffaws as I describe the calamities and my attempts to curb the chaos.

When I'm finished, he says, "You've come much further than I thought: You've started to take steps to stabilize the operational environment, you've started to visually manage WIP within IT Operations, and you've started to protect your constraint, Brent. You've also reinforced a culture of operational rigor and discipline. Well done, Bill."

I furrow my brows and say, "Wait. Brent is my constraint? What do you mean?"

He replies, "Ah, well if we're going to talk about your next steps, you definitely need to know about constraints because you need to increase flow. Right now, nothing is more important."

Erik assumes a lecturing voice as he starts, "You say you learned about plant operations management when you were in business school. I hope as part of your curriculum, you read *The Goal* by Dr. Eli Goldratt. If you don't have a copy anymore, get another one. You're going to need it."

I think my copy of that book is in my office at home. As I jot a quick reminder to look for it, he continues, "Goldratt taught us that in most plants, there are a very small number of resources, whether it's men, machines, or materials, that dictates the output of the entire system. We call this the constraint—or bottleneck. Either term works. Whatever you call it, until you create a trusted system to manage the flow of work to the constraint, the constraint is constantly wasted, which means that the constraint is likely being drastically underutilized.

"That means you're not delivering to the business the full capacity available to you. It also likely means that you're not paying down technical debt, so your problems and amount of unplanned work continues to increase over time," he says.

He continues, "You've identified this Brent person as a constraint to restore service. Trust me, you'll find that he constrains many other important flows of work, as well."

I try to interrupt to ask a question, but he continues headlong, "There are five focusing steps which Goldratt describes in *The Goal*: Step 1 is to identify the constraint. You've done that, so congratulations. Keep

challenging yourself to really make sure that's your organizational constraint, because if you're wrong, nothing you do will matter. Remember, any improvement not made at the constraint is just an illusion, yes?

"Step 2 is to exploit the constraint," he continues. "In other words, make sure that the constraint is not allowed to waste any time. Ever. It should never be waiting on any other resource for anything, and it should always be working on the highest priority commitment the IT Operations organization has made to the rest of the enterprise. Always."

I hear him say encouragingly, "You've done a good job exploiting the constraint on several fronts. You've reduced reliance on Brent for unplanned work and outages. You've even started to figure out how to exploit Brent better for the three other types of work: business and IT projects and changes. Remember, unplanned work kills your ability to do planned work, so you must always do whatever it takes to eradicate it. Murphy does exist, so you'll always have unplanned work, but it must be handled efficiently. You've still got a long way to go."

In a more stern voice, he says, "But you're ready to start thinking about Step 3, which is to subordinate the constraint. In the Theory of Constraints, this is typically implemented by something called Drum-Buffer-Rope. In *The Goal*, the main character Alex learns about this when he discovers that Herbie, the slowest Boy Scout in the troop, actually dictates the entire group's marching pace. Alex moved Herbie to the front of the line, to prevent kids from going on too far ahead. Later at Alex's plant, he started to release all work in accordance to the rate it could be consumed by the heat treat ovens, which was his plant's bottleneck. That was his real-life Herbie."

"Fully two decades after *The Goal* was published," he continues, "David J. Anderson developed techniques of using a kanban board to release work and control WIP for Development and IT Operations. You may find that of interest. You and Penelope are close with your change board to a kanban board that can manage flow."

"So, here's your homework," he says. "Figure out how to set the tempo of work according to Brent. Once you make the appropriate mapping of IT Operations to work on the plant floor, it will be obvious. Call me when you've figured it out."

"Wait, wait," I say, hurriedly before he hangs up. "I'll do the homework, but aren't we missing the entire point here? What caused all

the unplanned work is Phoenix. Why are we focusing on Brent right now? Don't we need to address all the issues with Phoenix inside of Development, where all the unplanned work actually came from?"

"Now you sound just like Jimmy, complaining about things you can't control," he sighs. "Of course Phoenix is causing all the problems. You get what you design for. Chester, your peer in Development, is spending all his cycles on features, instead of stability, security, scalability, manageability, operability, continuity, and all those other beautiful other 'itties.

"On the other end of the assembly line, Jimmy keeps trying to retrofit production controls after the toothpaste is out of the tube," he says, scoffing. "Hopeless! Futile! It'll never work! You need to design these things, what some call 'non-functional requirements,' into the product. But your problem is that the person who knows the most about where your technical debt is and how to actually build code that is designed for Operations is too busy. You know who that person is, don't you?"

I groan. "Brent."

"Yep," he says. "Without solving your Brent problem, you'll just be inviting him to design and architecture meetings with Development, but he'll never show up because…"

Being prompted again, I respond, "Unplanned work."

"Good!" he says. "You're getting better at this. But before you get a big head, I'll tell you that there's still a big piece of the First Way that you're missing. Jimmy's problem with the auditors shows that he can't distinguish what work matters to the business versus what doesn't. And incidentally, you have the same problem, too. Remember, it goes beyond reducing WIP. Being able to take needless work out of the system is more important than being able to put more work into the system. To do that, you need to know what matters to the achievement of the business objectives, whether it's projects, operations, strategy, compliance with laws and regulations, security, or whatever."

He continues, "Remember, outcomes are what matter—not the process, not controls, or, for that matter, what work you complete."

I sigh. Just when I think I have a concrete enough understanding of constraints, once again Erik becomes illusive.

"Don't get distracted. Call me when you know how to throttle release of work to Brent," he says and hangs up.

I can't believe it. I try calling him back twice, but it rolls immediately to his voicemail.

Sitting down on the bench, I lean back, take a deep breath, and force myself to enjoy the warm morning. I hear birds chirping and the noise of traffic from the road.

Then, for the next ten minutes, I capture as much as I can remember on my clipboard, trying to piece together what Erik covered.

When I'm done, I head inside to call Wes and Patty. I know exactly what I need to do and am excited to get started.

CHAPTER 16

• *Thursday, September 18*

I'm at my desk, tying up some loose ends when Ellen runs up to me, holding an e-mail printout. It's from Dick, raising the alarm with all company executives that something has gone terribly wrong with the company invoicing systems. Earlier today, one of the clerks discovered that no customers had been invoiced for three days. Among other things, this means that customers haven't been paying on time, which means the company will have less cash in the bank at the end of the quarter than projected, which will raise all sorts of uncomfortable questions when the company earnings are announced.

It's clear from Dick's string of e-mails that he's livid, and apparently, his whole accounts receivable staff and controller have been chain smoking and doing damage control at all levels.

> From: Dick Landry
> To: Steve Masters
> Cc: Bill Palmer
> Date: September 18, 3:11 PM
> Priority: Highest
> Subject: ACTION NEEDED: Potential $50MM cash shortfall due to IT failure

ALL CUSTOMER INVOICES ARE STILL STUCK OR MISSING IN THE SYSTEM. WE CAN'T EVEN RETRIEVE THEM TO MANUALLY SEND INVOICES BY E-MAIL!

We're trying to figure out how we can resume normal business operations. There's likely $50MM of receivables stuck in the system, which will be missing from our cash account at end of quarter.

Get your IT guys to fix this. The hole this blows in our quarterly numbers will be impossible to hide, and maybe even impossible to explain away.

Call me, Steve. I'll be on the window ledge.

Dick

We're all gathered in the NOC conference room. I'm pleased that when Patty finishes describing the incident, she quickly presented all the relevant changes for the last seventy-to hours.

After she's done, I say firmly to the entire team, "First and foremost on my mind is the risk of losing transactions. Ladies and gentlemen, I need to be very clear about this: DO NOT TOUCH ANYTHING WITHOUT GETTING APPROVAL FROM ME. This is not an outage we're dealing with here. We're in a situation where we could accidentally lose order entry or accounts receivable data. This terrifies me. And *that* should absolutely terrify *you*.

"As Patty said, we need timelines and hypotheses for what might have caused the invoicing system to fail," I say. "This is our *Apollo 13* moment and I'm Gene Kranz in Houston Mission Control. I don't want guesswork. I want hypotheses backed up with facts. So get back to your screens, assemble timelines and data, and I want to hear your best thinking on cause and effect. Failure is not an option."

By 6 PM, Patty's team has documented over twenty different potential failure causes that have been proposed. After further investigation, eight remain as likely possibilities. An owner has been assigned to look into each.

Realizing that there's little more we can do as a group until they complete their research, we agree to reconvene at 10 PM tonight.

On the one hand, I'm frustrated that once again, we've been plunged into a crisis and our day is dominated by unplanned incident work. On the other hand, I feel a deep sense of satisfaction at the orderly nature of

our incident investigation and quickly text Paige that I'll be joining the family for dinner shortly.

"Daddy," I hear, as I'm sitting in bed with Grant, trying to put him to sleep while keeping the thoughts of outages out of my head. "Why doesn't Thomas the Tank Engine have a tender car? Why?"

Smiling down at him, I marvel at the questions my three-year-old son comes up with. We're going through our nighttime ritual of reading books. I'm glad to be doing this again, which I do every night. Or did, that is, until the Phoenix recovery effort.

Most of the lights are off, but one lamp is still dimly lit. There is a pile of books on Grant's bed, and we're on the third one of the night.

I'm starting to get a little dry-mouthed from reading. The idea of taking a little break and doing some research on the Internet on train tender cars sounds pretty appealing.

I love how inquisitive my kids are and how much they love books, but there are nights when I'm so exhausted that I've actually fallen asleep during our nightly ritual. My wife will walk in, find me asleep with one of Grant's books lying on top of my face and Grant asleep beside me.

Despite how tired I am, I'm grateful to be at home early enough to resume my nighttime ritual with my older son.

"Yes, we need to find out, Daddy," Grant demands. I smile at him, and I dig my phone out from my pocket, intending to do a Google search for "tank engine tender car."

But first, I quickly scan my phone for any new updates on the customer invoicing problem. I'm amazed at the difference two weeks can make.

During the last Sev 1 incident that hit our credit card processing systems, the conference call was full of finger-pointing, denials, and, most importantly, wasted time when our customers couldn't give us money.

Afterward, we did in the first of a series of ongoing blameless postmortems to figure out what really happened and come up with ideas on how to prevent it from happening again. Better yet, Patty led a series of mock incident calls with all hands on deck, to rehearse the new procedures.

It was terrific to watch. Even Wes saw the value.

I'm pleased to see all the e-mails indicating a lot of good information and effective discussion among the teams working the problem. They've kept the telephone conference bridge and a chat room open for people working the issue, and I plan on calling in at 10 PM to see how it's going.

That's forty-five minutes from now. Plenty of time to spend with Grant, who should be falling asleep soon.

He nudges me, obviously expecting more progress on the research front.

"Sorry, Granty. Daddy got distracted," I say as I open up the browser. I'm surprised by how many of the search results are all about Thomas the Tank Engine It's the book series that spawned a multibillion dollar franchise of toy trains, clothing, videos, and coloring books. With two sons, we seem destined to own two of every item soon.

I'm reading a promising Wikipedia entry on stream trains when my phone starts vibrating and the screen displays by "Call from Steve Masters."

I groan and double-check my watch. It's 9:15 PM.

I've had way too many meetings and phone calls with Steve lately. In my head, I wonder how many of these meetings I can take.

On the other hand, after the Phoenix debacle, every outage and incident is trivial in comparison, right?

I say gently, "Hang on, Grant. Daddy has to take a phone call. I'll be right back." I jump out of his bed and walk into the dark hallway.

I'm glad I had just scanned through all the e-mail traffic on the outage just seconds before. I take a deep breath before I hit the button to answer the call.

I say, "Bill here."

Steve's loud voice booms in my ear. "Evening, Bill. I'm glad you're there. Of course you know about the customer invoicing problems from Dick?"

"Yes, of course," I reply, surprised at his tone. "My team declared a major incident early this afternoon and we've been working this issue ever since. I've been sending out status reports every hour. Dick and I spent twenty minutes on the phone earlier this evening. I know the problem is serious, and my team is following the process we've created after the payroll failure. I'm completely satisfied that the process is working."

"Well I just got off the phone with Dick, and he tells me that you're dragging your feet," says Steve, clearly very angry. "Obviously, I'm not calling you at night because I want to chitchat. Do you understand how intolerable this is? Yet another IT screwup jeopardizing everything. Cash is the lifeblood of the company, and if we can't invoice customers, we can't get paid!"

Falling back on old training on handling frustrated people, I calmly reiterate what I already stated. "As I said, I talked with Dick earlier today. He very much impressed upon me all the implications. We've activated our new incident process, and we're methodically looking into what could have caused the failure. They're doing exactly what I want them to, because with so many moving pieces, it's way too easy to make things worse by jumping to conclusions—"

"Are you in the office?" Steve demands, cutting me off before I could finish.

His question genuinely catches me off guard.

"Uh… No, I'm at home," I answer.

Is he worried that I've delegated the problem away? To reinforce my role in handling the crisis and what my expectations from my team are, I say, "I will be calling into the war bridge line at ten o'clock. As always, we have a duty officer on site, and those on my staff who need to be in the office are there already."

Finally, I ask bluntly, "Steve, want to tell me what's on your mind? I'm on top of this situation. What do you need that you aren't getting right now?"

He responds hotly, "What I need from you is a goddamned sense of urgency. Dick and his team are burning the midnight oil trying to figure out how our quarter will end up in six working days. But I think I already know what the answer will be."

He continues, "We'll probably miss almost every target that we've promised the board: revenue, cash, receivables—everything. In fact, every measure we've promised the board is going the wrong way! This screwup may confirm the board's suspicion that we've completely lost control of managing this company!"

Steve is almost snarling now as he says, "So, what I want from you, *Bill*, is to stay sufficiently on top of things, so that I don't have my CFO saying that you're dragging your feet. The house is burning down, and

all I hear from you is about drawing pictures and timelines. What in the hell is wrong with you? You afraid to get people out of bed?"

I start again, "Steve, if I thought it would help, I'd have everyone pull all-nighters in the data center tonight. For Phoenix, some people didn't go home for nearly a week. Trust me, I know the house is on fire, but right now, more than anything, we need situational awareness. Before we send the teams crashing through the front door with fire hoses, we have to have someone at least quickly walk the perimeter of the yard—otherwise, we'll end up burning down the houses next door!"

I realize that I've raised my voice in the relative quiet of our house as we're trying to get the kids to sleep. I resume, more quietly, "And just in case you forgot, during the payroll outage, we made the outage worse by our own actions. We probably could have completed the payroll run during the business day if someone hadn't started screwing with the SAN. Because of that, we added another six hours to the outage, and we nearly lost payroll data!"

My hopes that the calm voice of reason is reaching him are dashed when I hear him say, "Oh, yeah? I don't think your team agrees with you. What was the name of that smart guy who you introduced me to? Bob? No, Brent. I talked with Brent earlier today, and he's very skeptical of your approach. He thinks what you're doing is separating people who actually do the work from what needs to get done. What is Brent doing right now?"

Shit.

I like transparency. I always try to make my team totally accessible to my boss and the business. But there's always risk in doing this.

Like having Brent spout off his crazy theories to the CEO.

"I hope Brent is at home, because that's exactly where he should be," I respond. "Until we know for sure exactly what went wrong, that's where I want him. Look, it's rocket scientists like him that often cause the problem in the first place. Every time we escalate to Brent, we perpetuate our reliance on him, and make it that much less likely we can fix things without him!"

Suspecting that I may be losing Steve, I start again. "The chaotic way we currently work, Brent is having to fix the punctured hulls almost every day. I'm pretty sure, though, that Brent is one of the main reasons the hull is punctured in the first place. It's not malicious, of course, but

it's just a side effect of the way we work and fix outages here."

There is a pause. Then he says slowly and decisively, "I'm glad you're being so professorial about this, but we've got a goddamned fire that's out of control. Up until now, we've done it your way. And now we're going to do it my way.

"I want you to call Brent in, and I want him to roll up his sleeves and help fix this outage. And not just Brent. I want all eyeballs on screens and all hands on keyboards. I'm Captain Kirk. You're Scotty. And I need warp speed, so get your goddamned engineers off their asses! Do you understand me?"

Steve is yelling so loudly by now that I'm holding the phone away from my ear.

Suddenly, I'm furious. Steve is going to screw this up again.

Recalling my days in the Marines, I finally say, "Permission to speak freely, sir?"

I hear Steve on the other end of the line snort dismissively in response. "Yes, dammit."

"You think I'm being overly cautious, and that I'm hesitating to do what needs to be done. But you are wrong. Dead wrong," I say adamantly. "If you do what I think you're suggesting, which is basically 'all hands on deck,' I predict that we're going to make things much worse."

I continue, "I tried to advise you of something very similar before the Phoenix launch. Up until now, we have not been sufficiently disciplined in how we work outages. Given all the complexity and moving pieces, there's too much likelihood of causing another problem. I may not know exactly what caused the customer invoicing issue, but I know enough to absolutely conclude that what you're proposing is a very bad idea. I recommend continuing along the lines I am currently prosecuting."

I hold my breath, waiting to hear how he reacts.

He says slowly, "I'm sorry you feel that way, Bill, but the drawers open on my side of the desk. I'm telling you that it's now DEFCON 1, so go get the smartest people working on this problem. And I want status updates on this IT failure every two hours until it's fixed. Understood?"

Before I can think about what to say, I find myself saying, "I don't know why you need me to do that. You're talking directly to my people, and you're calling all shots on the ground. Do it yourself. I can't be held responsible for the results of this FUBAR situation."

And before I hang up on him, I say with finality, "And expect my resignation in the morning."

I wipe the sweat off my forehead, and look up from my phone to see my wife Paige staring at me wide-eyed.

"Are you insane? You just quit? Just like that? How are we going to pay the bills now?" she asks, her voice rising.

I turn the ringer off on my phone and put it back in my pocket, saying, "Honey, I'm not sure how much of that conversation you heard, but let me explain…"

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