

When IT Fails: A Business Novel

#whenitfails

Book by Gene Kim, Kevin Behr and George Spafford

Webinar by Lisa Schwartz (@ITSM_Lisa)
and Gene Kim (@RealGeneKim)

About ITSM Academy



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Welcome!

Agenda

- The Author
- The Background
- The Cast of Characters
- The Plot
- The Project Phoenix
- The 3 Ways



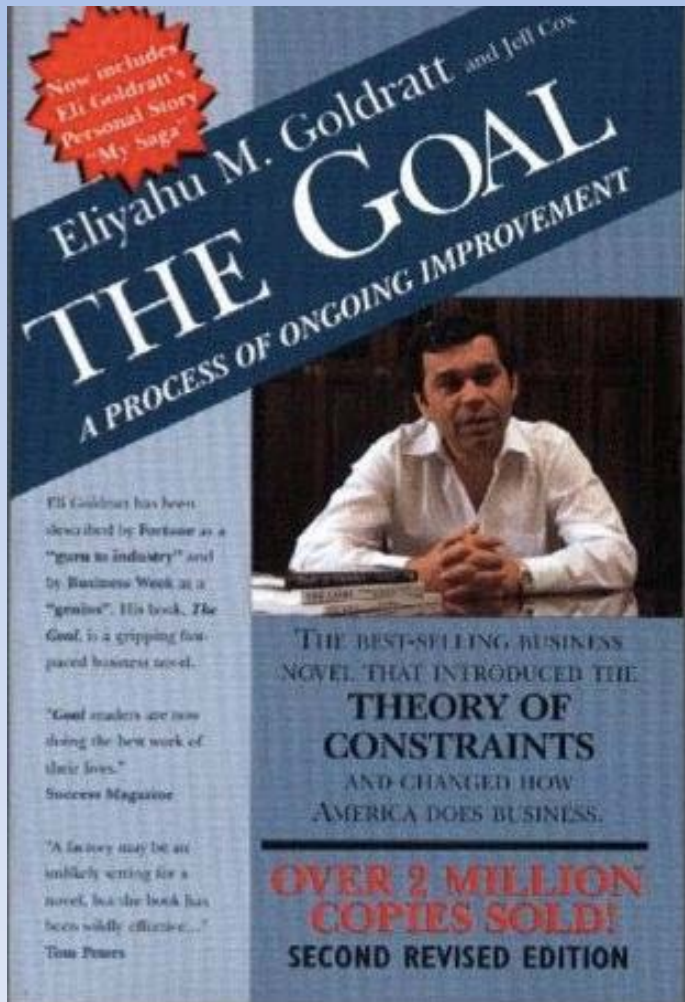
Twitter

@RealGeneKim
#whenitfails

@ITSM_Lisa
@ITSMAcademy

Gene Kim was the founder of Tripwire, co-author of *The Visible Ops Handbook* and the upcoming books, *The DevOps Cookbook* and *When IT Fails: A Business Novel*

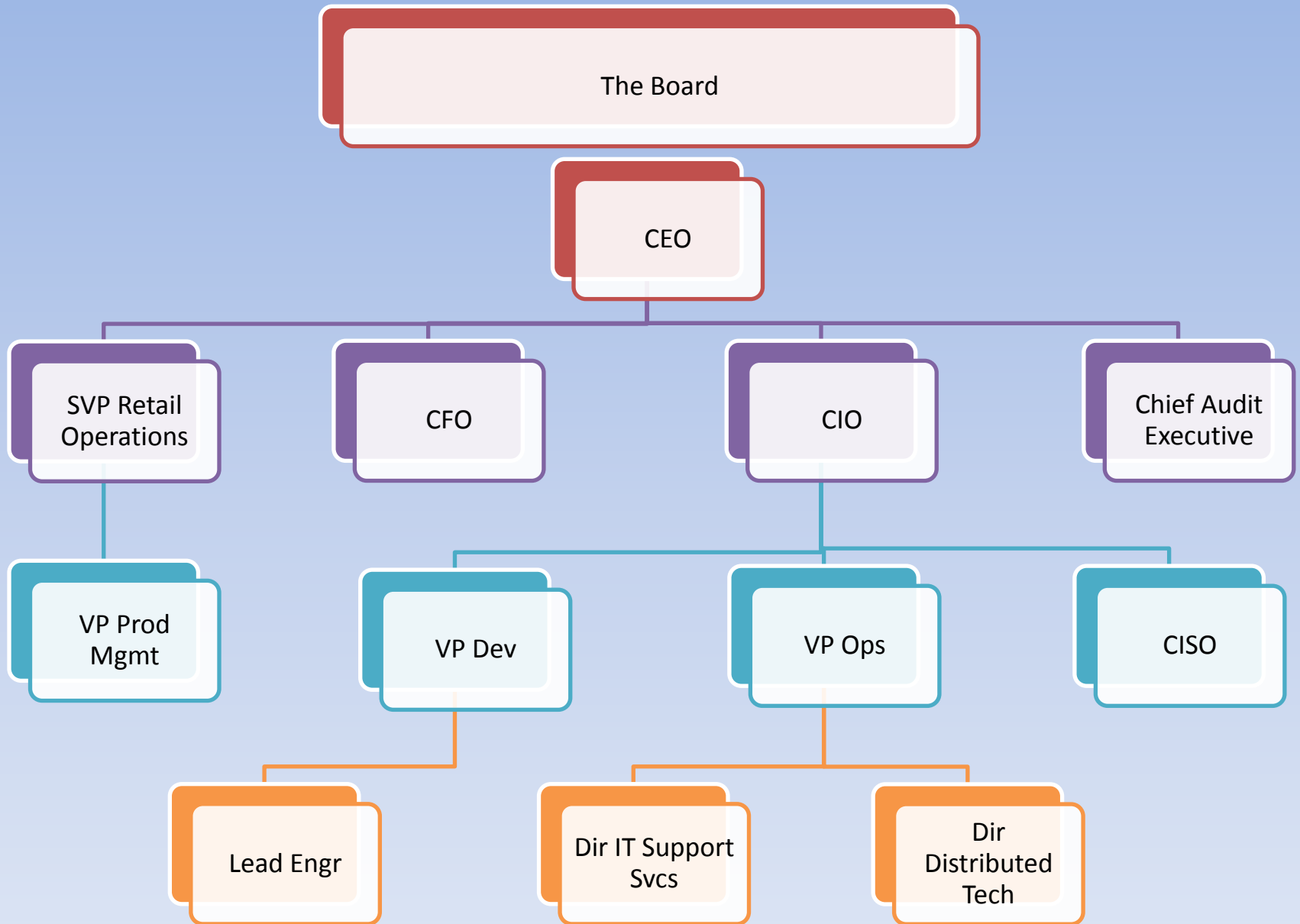
An Homage



Homage: a show or demonstration of respect or dedication to someone or something, sometimes by simple declaration but often by some more oblique reference, artistic or poetic.

The State Of The Business





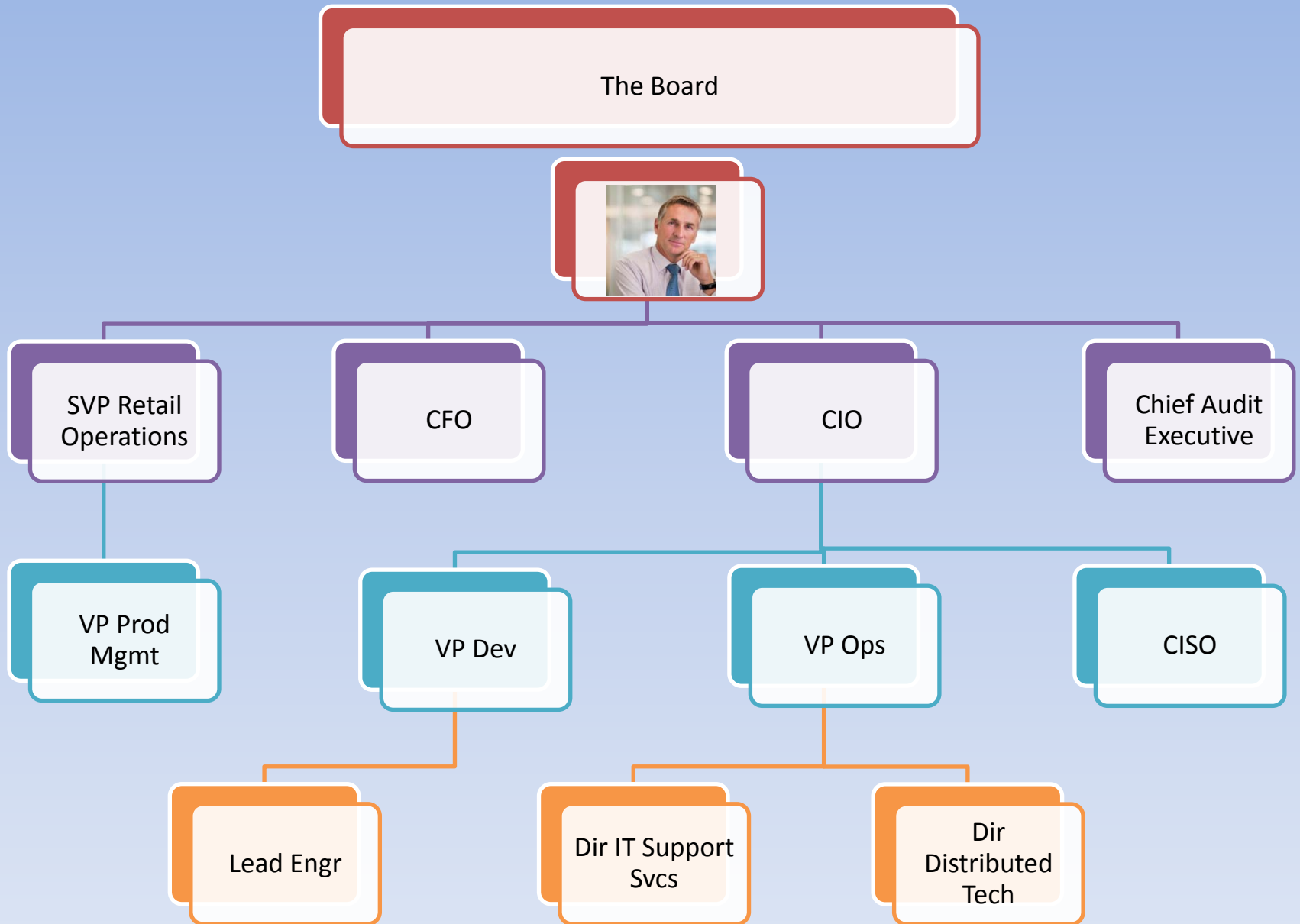
Steve Masters, CEO *

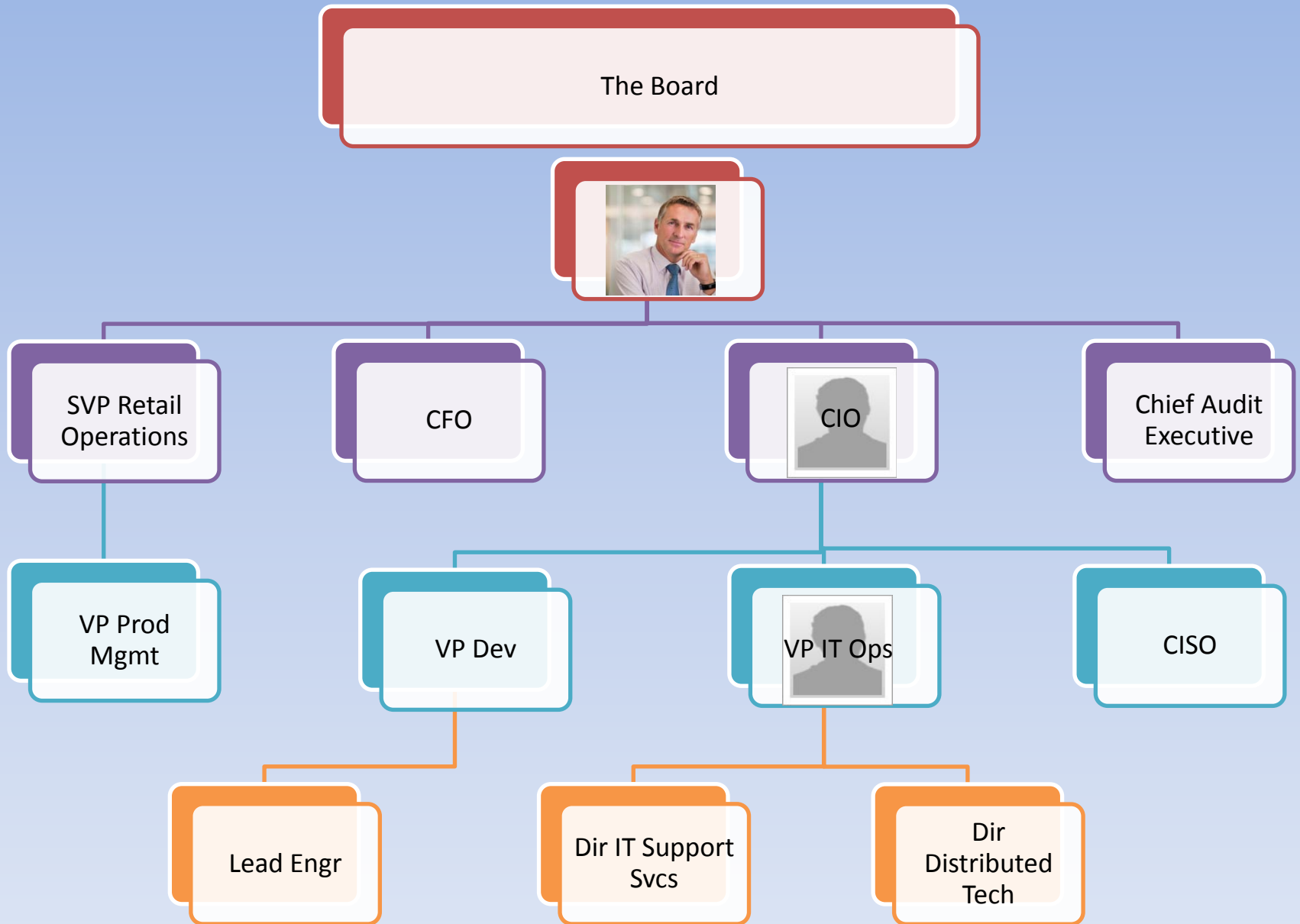


"I'll be blunt. The way things are going, I'll be out of a job in six months."

"What's at stake here is not just my job, but the nearly four thousand employees who work here at Parts Unlimited."

-- Steve Masters





Bill Palmer, VP IT Operations *



Ch 1. In Which Bill Is Pulled From His Happy Existence

Ch 2. In Which Bill Is Thrown Into The Deep End

Ch 3. In Which Bill Talks To The Usual Suspects

Ch 4. In Which Bill Sees The Underside Of A Bus

Ch 5. In Which Bill Has Auditors Take An Interest

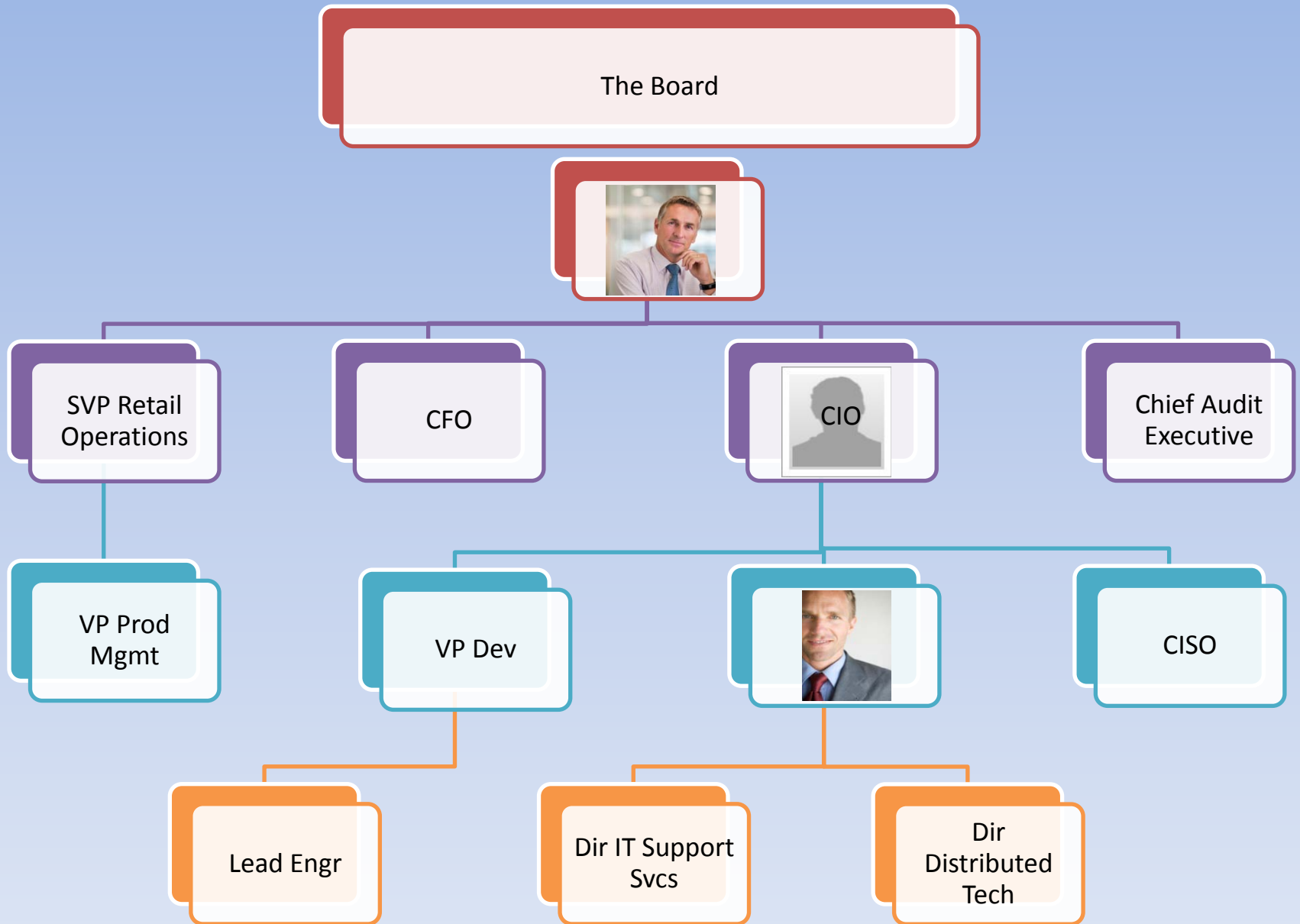
Ch 6. In Which Bill Counts The Cards

Ch 7. In Which Bill Takes A Trip

Ch 8. In Which Bill Goes To Steve

Ch 9. In Which Bill Yells And Contemplates

...and so forth...

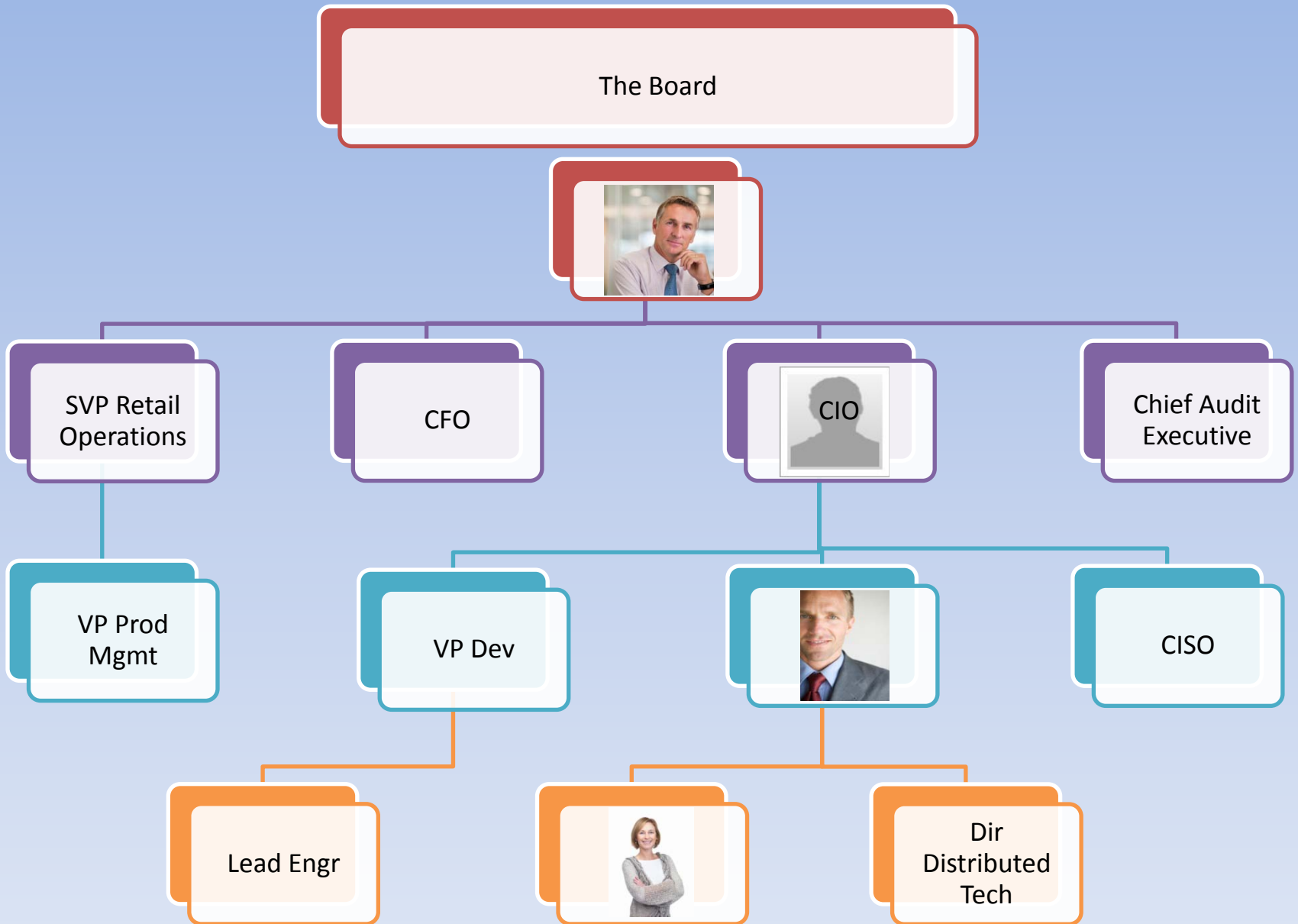


Patty McKee, Director IT Svc Support *



“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.”

-- Bill Palmer



Wes Davis, Director Distributed Tech Ops *



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

-- Bill Palmer



John Pesche, CISO



*“Let me see if I’ve got this right...
You deployed this tokenization
application to fix an audit finding,
which caused the payroll run failure,
which has Dick and Steve climbing
the walls?”*

-- Bill Palmer



Brent Geller, Lead Engineer



"Brent is 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."

-- Bill Palmer



Sarah Moulton, SVP Retail Operations



"Thanks for that super creative explanation, Bill... The real issue here is that your people don't seem to grasp how important Phoenix is to the company..."

"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."

-- Sarah Moulton



Chris Allers, VP App Development



“He has a reputation as a capable and no-nonsense manager. With nearly 200 developers working for him, he needs to be.”

“Chris is constantly asked to deliver more features, do it in less time, and with less money.”

-- Bill Palmer



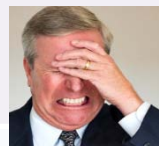
Dick Landry, CFO



"This payroll outage is your damned fault. Bill, you've got four hours."

-- Dick Landry

The Board



Chief Audit
Executive

VP Prod
Mgmt



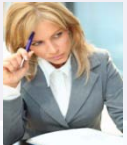
Erik Reid, Candidate Director



“Look, thanks for the history lesson. But I don’t see how all this is relevant to managing IT Operations. IT is not like running a factory.”

“Oh, really?” Erik turns to me, frowning intensely. “In IT, 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?”

The Board



VP Prod
Mgmt



CIO

Chief Audit
Executive



Project Phoenix





Elkhart Grove Herald Times

www.egherald.com

- Since 1879

PARTS UNLIMITED FLUBS PAYCHECKS



Elkhart Grove Automotive parts supplier Parts Unlimited has failed to adequately compensate its workers, with some employees receiving no pay at all, according to an internal company email.

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.

Continued on A7



IT'S A TRAP!

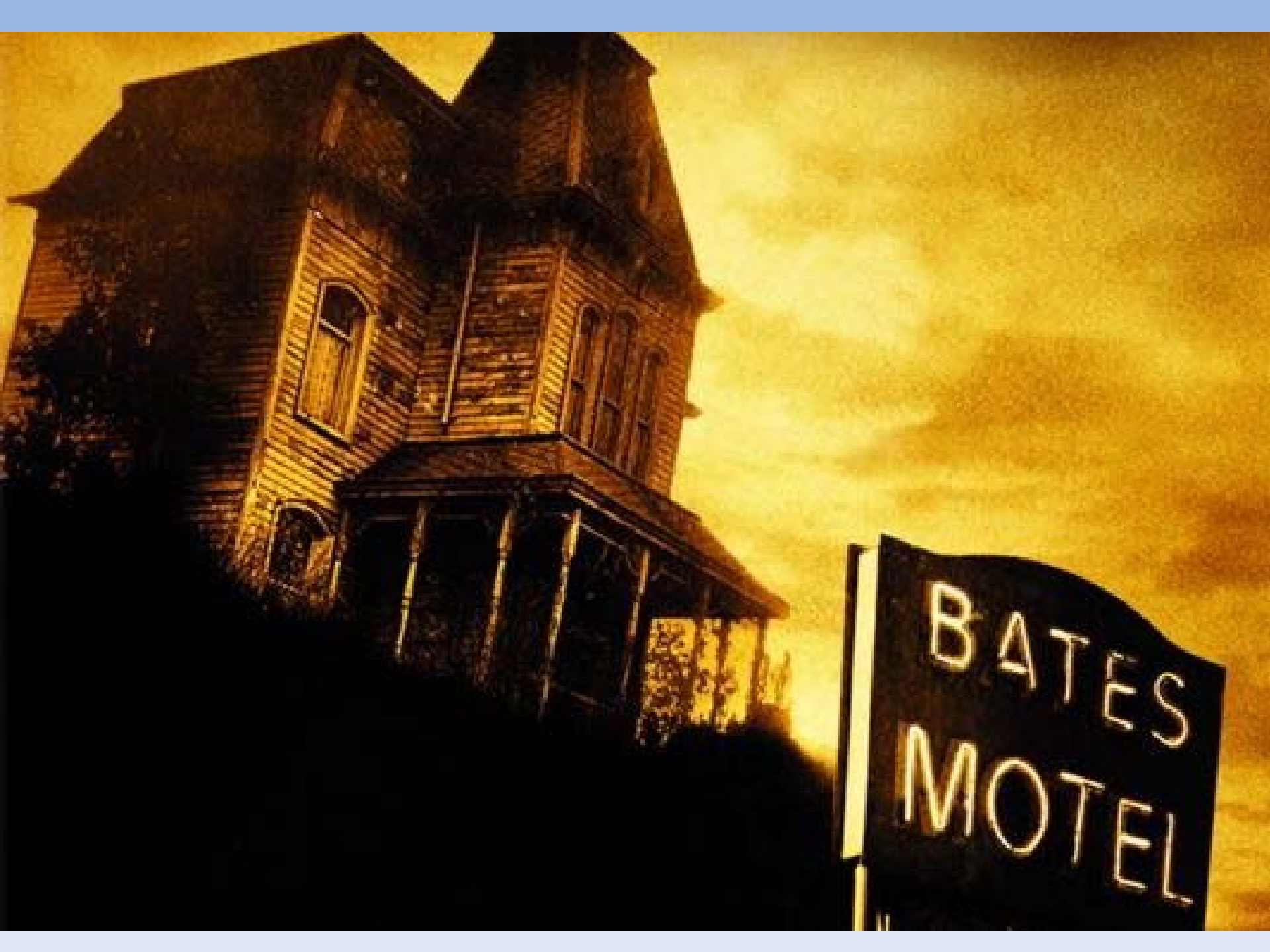


Day 3: The SOX-404 Audit Meeting













Prescriptive
Solutions:

The Three Ways



...and hell followed with him.



**CLINT
EASTWOOD**

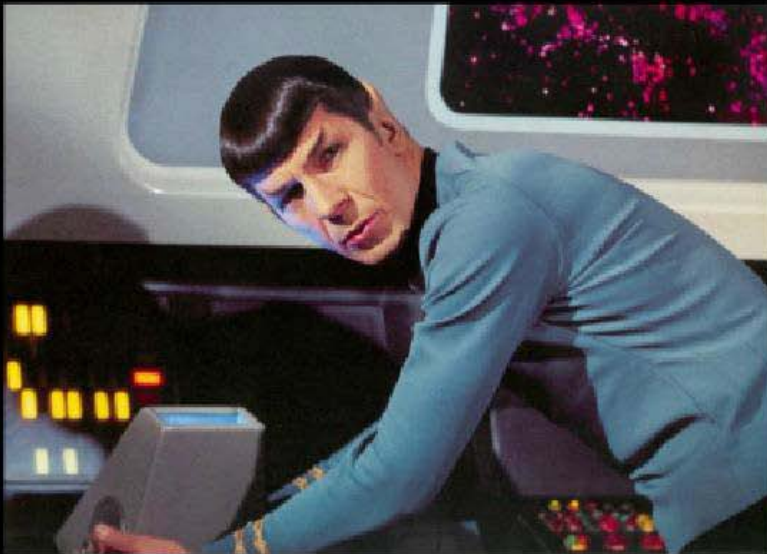
PALE RIDER



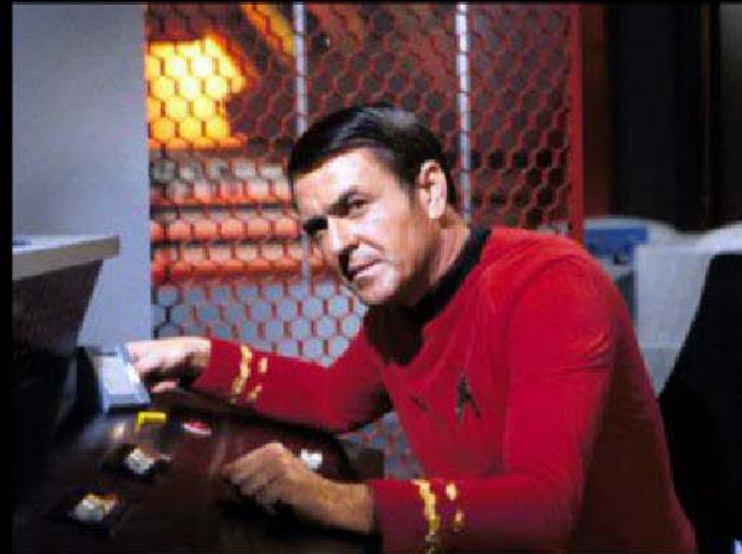
CLINT EASTWOOD "PALE RIDER" CASTING BY MICHAEL HOBELTLY CAROL SPENCER
CHRISTOPHER YOUNG RICHARD STANLEY STEVEN PERRY RICHARD HILL EDWARD MCGILL
JOHN HENRIKSON CASTING BY MICHAEL HOBELTLY CAROL SPENCER
CLINT EASTWOOD "PALE RIDER" CASTING BY MICHAEL HOBELTLY CAROL SPENCER
CLINT EASTWOOD "PALE RIDER" CASTING BY MICHAEL HOBELTLY CAROL SPENCER

10 deploys per day
Dev & ops cooperation at Flickr

John Allspaw & Paul Hammond
Velocity 2009



Little bit weird
Sits closer to the boss
Thinks too hard

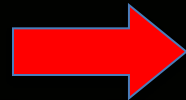


Pulls levers & turns knobs
Easily excited
Yells a lot in emergencies

Ops who think like devs
Devs who think like ops

Amazon May Deployment Stats

(production hosts & environments only)



11.6 seconds

Mean time between deployments (weekday)

1,079

Max # of deployments in a single hour

10,000

Mean # of hosts simultaneously receiving a deployment

30,000

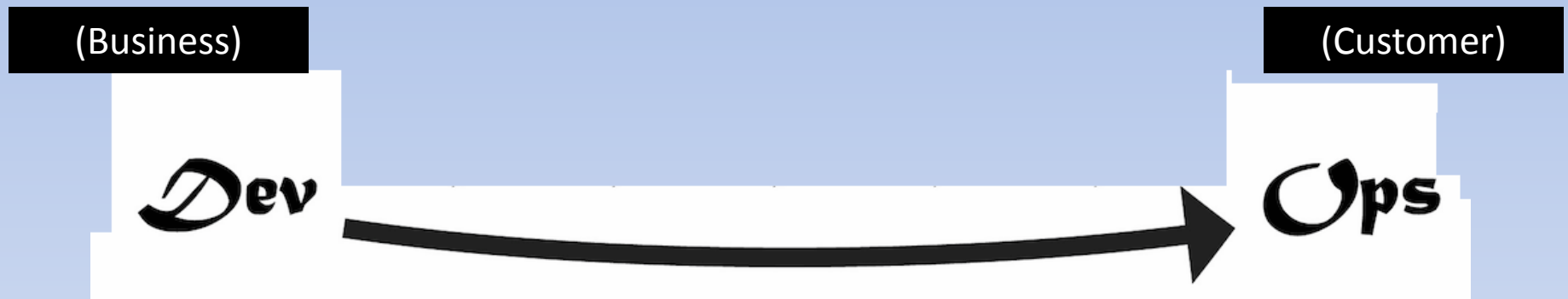
Max # of hosts simultaneously receiving a deployment



The First Way: Systems Thinking



The First Way: Systems Thinking



The First Way: Systems Thinking (Left To Right)

- Never pass defects downstream
- Never optimize locally
- Always increase flow: elevate bottlenecks, reduce WIP, throttle release of work, reduce batch sizes
- Understanding where reliance is placed

Phase 1: Extend the Agile Continuous Integration/Release Processes

- Make one-click environment creation available at the earliest stages of the project: Dev, Test and Production
- Move code packaging to Development
- Automate code deployment
- Properly integrate release, configuration and change into the value stream (as well as QA and infosec)
- Ensure developers don't leave until production change is successful
- Assign Ops person into Dev team

Definition: Kanban Board

- Signaling tool to reduce WIP and increase flow



The First Way:

Systems Thinking: ITSM Insurgency

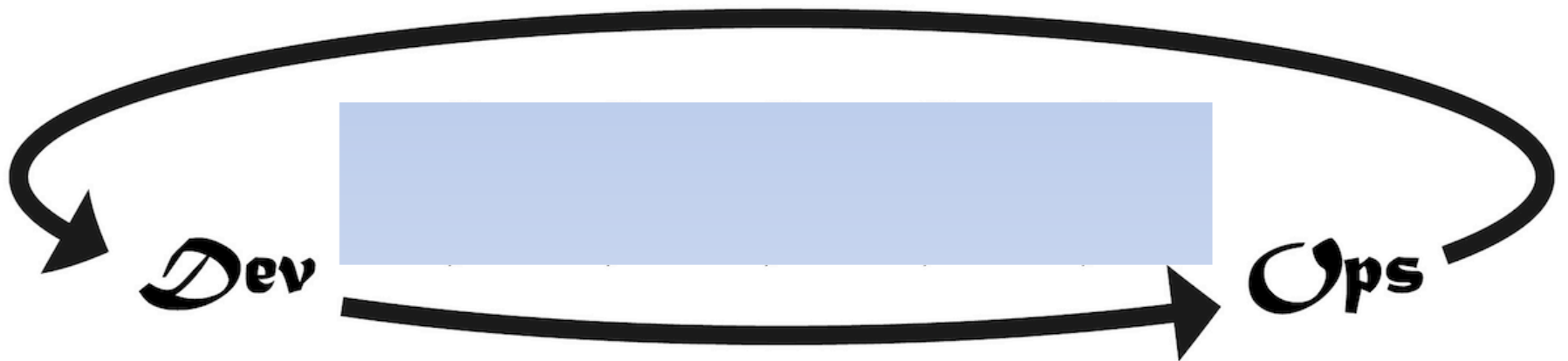
- Have someone attend the daily Agile standups
 - Gain awareness of what the team is working on
- Find the automated infrastructure project team (e.g., *puppet*, *chef* open source tools)
 - Release managers can provide hardening guidance
 - Integrate and extend their production configuration monitoring
- Find where code packaging is performed
 - Integrate security testing pre- and post-deployment
- Integrate testing into continuous integration and release process
 - Add security test scripts to automated test library
- Define what changes/deloys cannot be made without triggering full retest and change authorization

The First Way:

Outcomes

- Determinism in the release process
- Creating single repository for code and environments
- Consistent Dev, QA, Int, and Staging environments, all properly built before deployment begins
- Decreased cycle time
 - Reduce deployment times from 6 hours to 45 minutes
 - Refactor deployment process that had 1300+ steps spanning 4 weeks
- Faster release cadence

The Second Way: Amplify Feedback Loops



The Second Way:

Amplify Feedback Loops (Right to Left)

- Get Development closer to Operations and customers
- Expose visual data so everyone can see how their decisions affect the entire system
- Create a reliable system system of work that improves itself

“We found that when we woke up developers at 2am, defects got fixed faster than ever”

-Patrick Lightbody,
CEO, BrowserMob

Phase 2: Extend Release Process And Create Right -> Left Feedback Loops

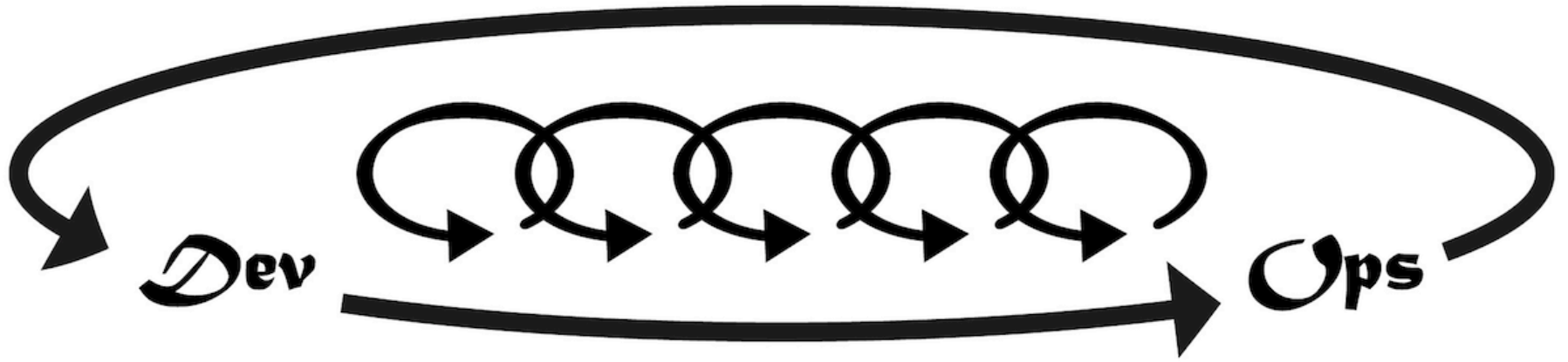
- Embed Dev into Ops escalation process
- Invite Dev to post-mortems/root cause analysis meeting
- Have Dev cross-train IT Operations
- Ensure application monitoring/metrics to aid in Ops and Infosec work (e.g., incident/problem management)

The Second Way:

Amplify Feedback Loops: ITSM Insurgency

- Find areas in the incident and problem management processes where Development knowledge could help
- Ensure that countermeasures are captured in the Agile backlog
- Find that developer who really cares about the production environment

The Third Way: Culture Of Continual Experimentation And Learning



The Third Way: Culture Of Continual Experimentation And Learning

- Foster a culture that rewards:
 - Experimentation (taking risks) and learning from failure
 - Repetition is the prerequisite to mastery
- Why?
 - You need a culture that keeps pushing into the danger zone
 - And have the habits that enable you to survive in the danger zone

Find What's Most Important First



Before Something Bad Happens...



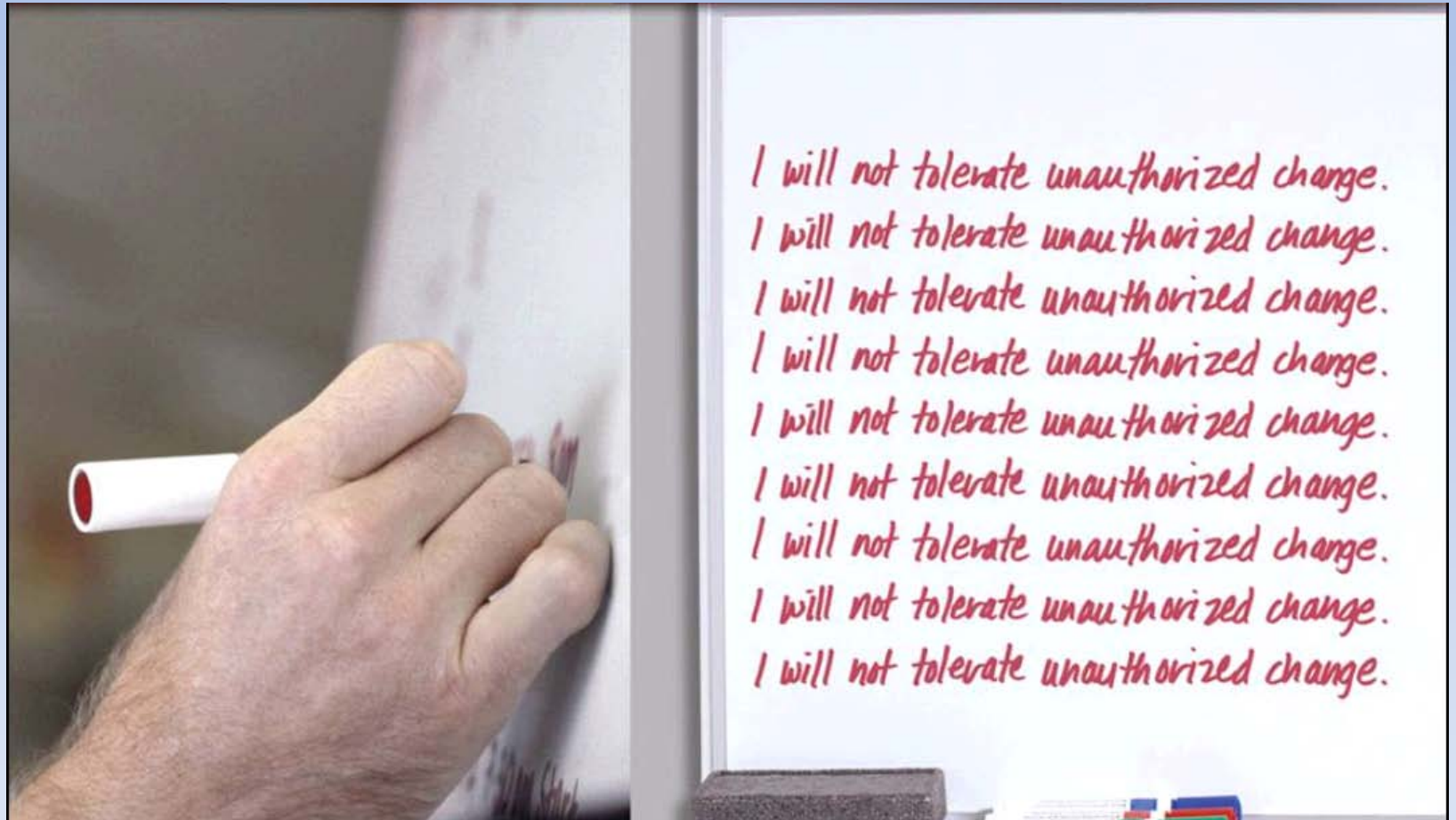
Find Risk Early...



Communicate It Effectively To Peers...



Hold People Accountable...



Based On Objective Evidence...



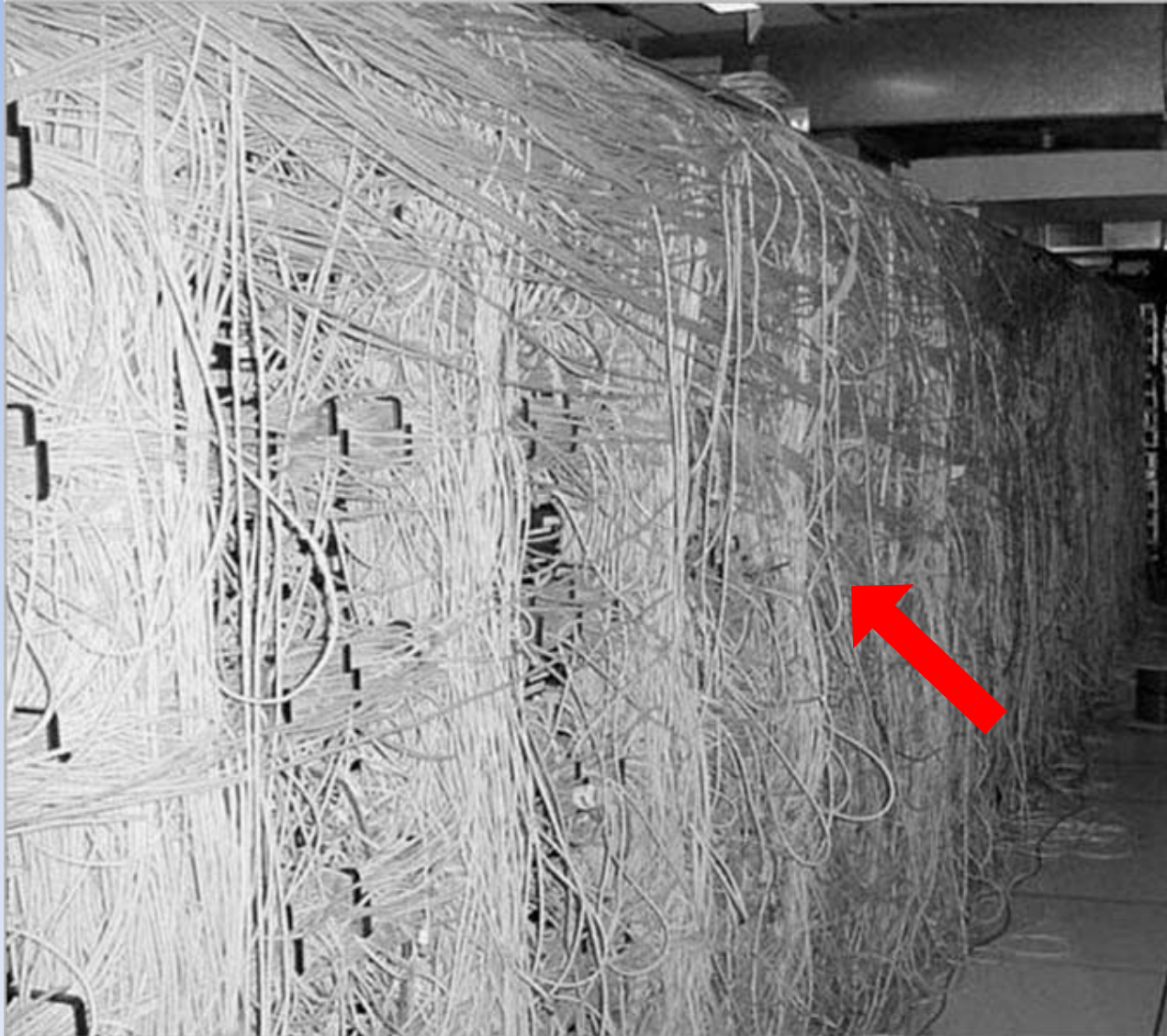
Answer Important Questions...



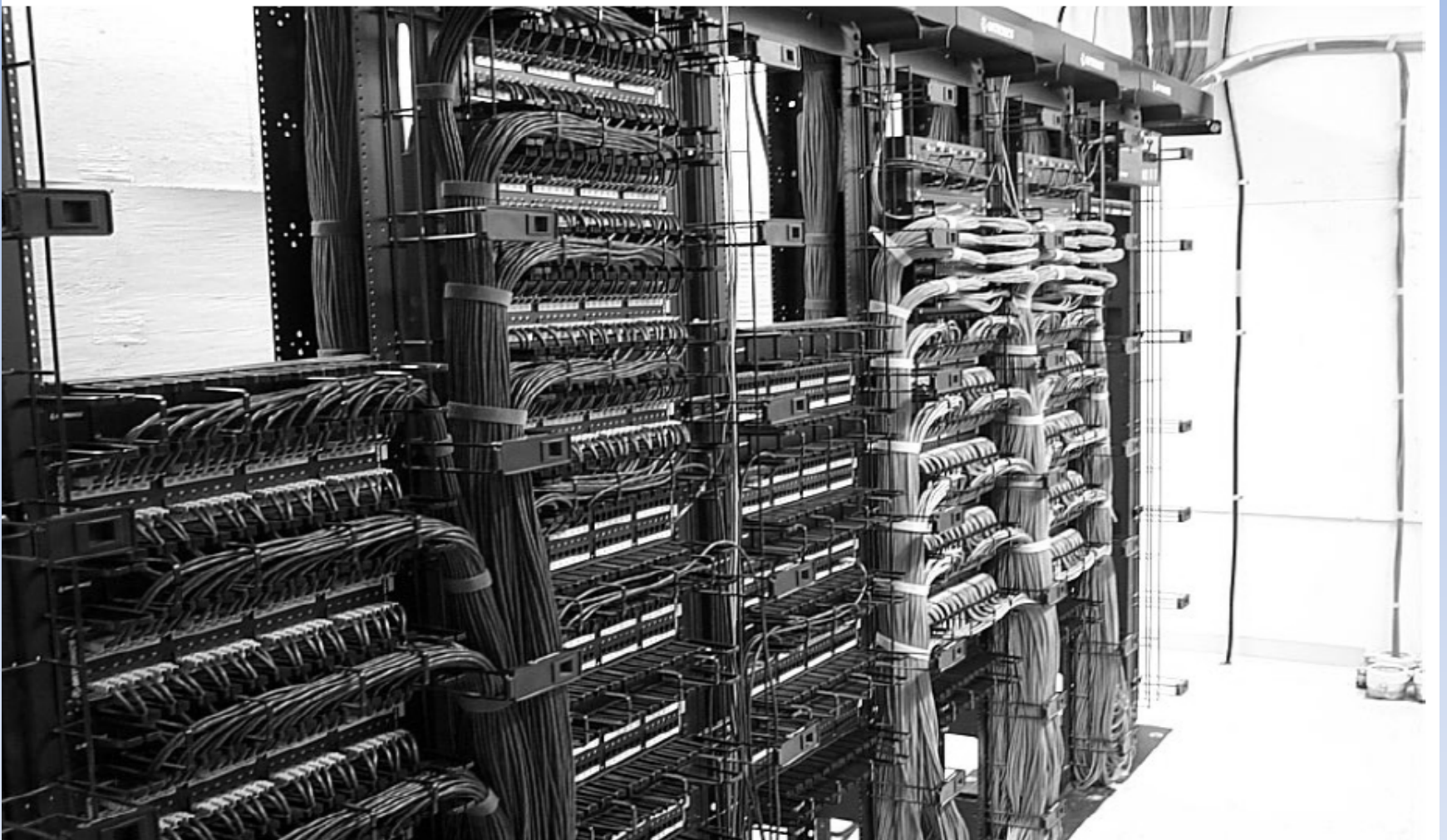
Recognize Compounding Technical Debt...



That Gets Worse...



And Fixing It...



Have What We Need, When We Need It...



Big Things Get Done Quickly...



Ever Increasing Situational Mastery...



Help The Business Win...



With Support From Your Peers...



And Do More With Less Effort...



This Is An Important Problem

Operations Sees...

- Fragile applications are prone to failure
- Long time required to figure out “which bit got flipped”
- Detective control is a salesperson
- Too much time required to restore service
- Too much firefighting and unplanned work
- Urgent security rework and remediation
- Planned project work cannot complete
- Frustrated customers leave
- Market share goes down
- Business misses Wall Street commitments
- Business makes even larger promises to Wall Street

Dev Sees...

- More urgent, date-driven projects put into the queue
- Even more fragile code (less secure) put into production
- More releases have increasingly “turbulent installs”
- Release cycles lengthen to amortize “cost of deployments”
- Failing bigger deployments more difficult to diagnose
- Most senior and constrained IT Ops resources have less time to fix underlying process problems
- Ever increasing backlog of work that could help the business win
- Ever increasing amount of tension between IT Ops, Development, Design...





IT Project Failures

Michael Krigsman

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Comments

13

Tweet

250

Like

71

8

+1

30

more +

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Worldwide cost of IT failure (revisited): \$3 trillion

By [Michael Krigsman](#) | April 10, 2012, 5:25am PDT

Summary: *These are the most reasonable numbers I have seen on the global economic impact of IT failures.*



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If I Could Wave A Magic Wand, Everyone Will...

- Become conversant with Three Ways and DevOps, and recognize the practices when you see them
- Be energized about how ITSM practitioners can contribute in this organizational journey
- Leave with some concrete steps to get some great outcomes
- Become a part of a team that starts putting these practices into place

When IT Fails: A Business Novel and The DevOps Cookbook

- Coming in Winter 2012/2013
- “In the tradition of the best MBA case studies, this book should be mandatory reading for business and IT graduates alike.”
Paul Muller, VP Software Marketing, Hewlett-Packard
- “The greatest IT management book of our generation.”
Branden Williams, CTO Marketing, RSA



Gene Kim, Tripwire founder,
Visible Ops co-author



When IT Fails: A Business Novel and The DevOps Cookbook



Gene Kim, Tripwire founder,
Visible Ops co-author

- Our mission is to positively affect the lives of 1 million IT workers by 2017
- If you would like the “Top 10 Things You Need To Know About DevOps,” sample chapters or pre-order your copy of the book:
 - Goto <http://itrevolution.com/itsmacademy>
 - Email genek@realgenekim.me



Gene's links

- Velocity Conference, which is one of my favorites to attend: <http://velocityconf.com/>
(Sign up for the mailing at <http://itrevolution.com/itsmacademy> if you want my conference notes, which will be ready within 2 weeks)
- My favorite online kanban tool: Lean Kit Kanban: <https://leankitkanban.com/>