LeanKit

DevOps and Kanban

Lessons Learned from "The Phoenix Project"

Gene Kim

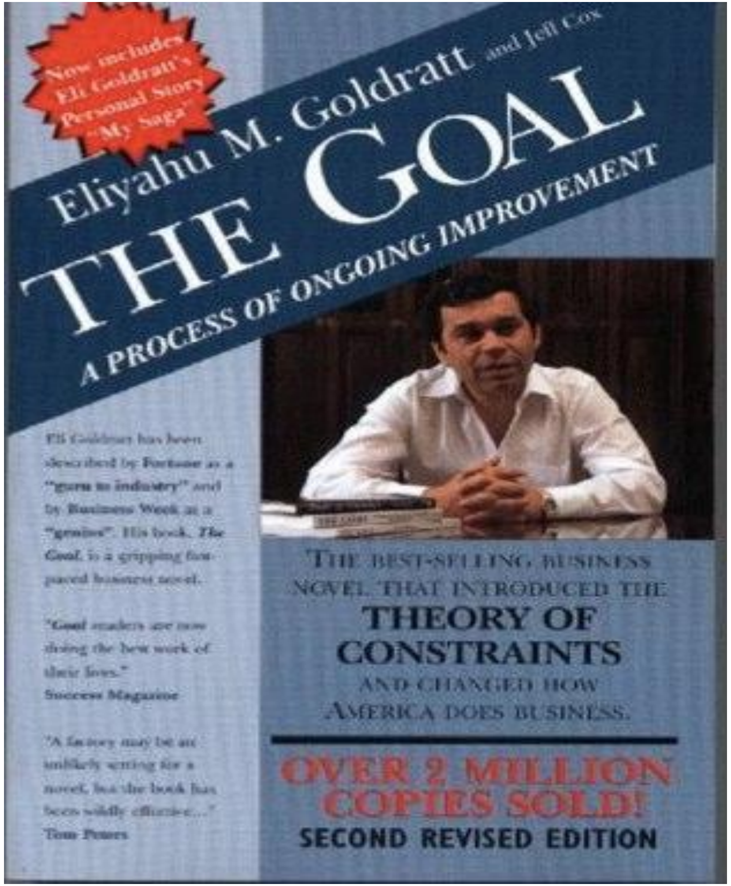
June 18th, 2014

LeanKit

Q & A with Gene Kim

The Phoenix Project
The Phoenix Project
A Novel About IT, DevOps, and Helping Your Business Win
Gene Kim, Kevin Behr and George Spafford

What is *The Phoenix Project* about, and how does it relate to Kanbans?



Now includes Eli Goldratt's Personal Story "My Saga"

Eliyahu M. Goldratt and Jeff Cox

THE GOAL

A PROCESS OF ONGOING IMPROVEMENT

Eli Goldratt has been described by **Fortune** as a **"guru to industry"** and by **Business Week** as a **"genius"**. His book, ***The Goal***, is a gripping fast-paced business novel.

"**Goal** readers are now doing the best work of their lives."
Success Magazine

"A factory may be an unlikely setting for a novel, but the book has been wildly effective..."
Tom Peters

THE BEST-SELLING BUSINESS NOVEL THAT INTRODUCED THE

THEORY OF CONSTRAINTS

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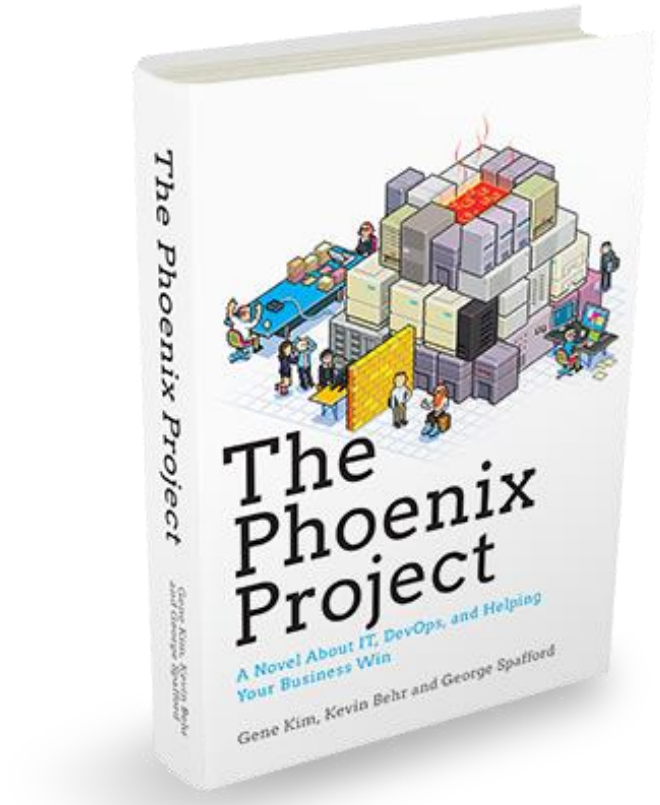
The Phoenix Project
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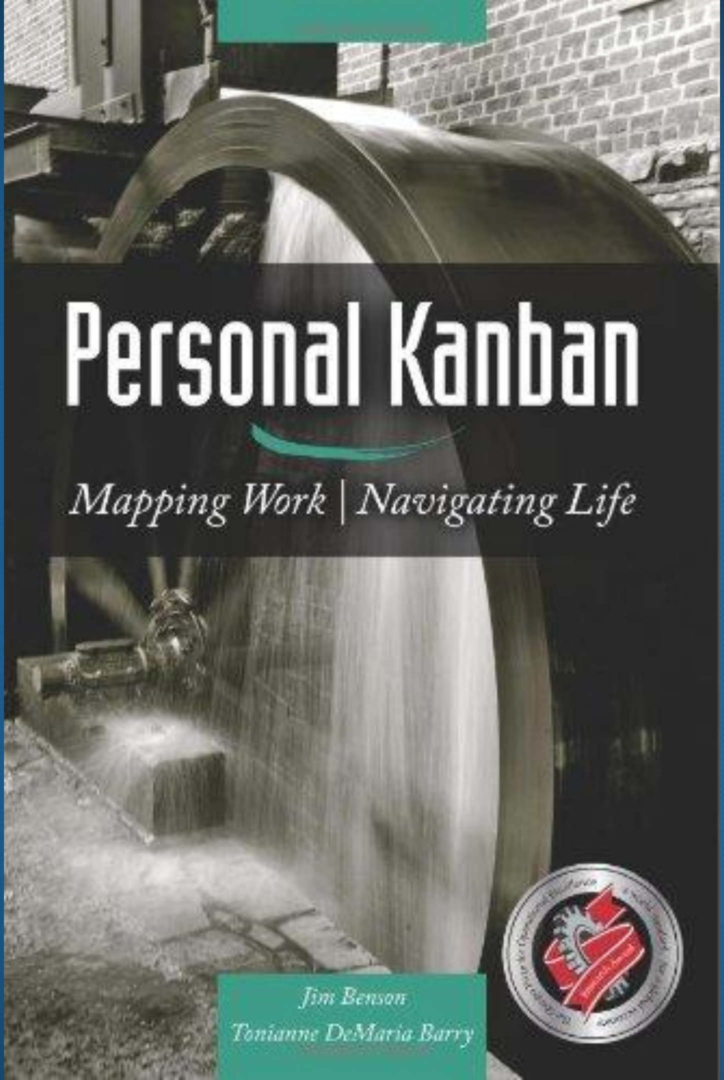
"This book will have a profound effect on IT, just as *The Goal* did for manufacturing." –**Jez Humble, co-author *Continuous Delivery***

"This is the IT swamp draining manual for anyone who is neck deep in alligators." –**Adrian Cockroft, Cloud Architect at Netflix**

"This is *The Goal* for our decade, and is for any IT professional who wants their life back." **–Charles Betz, IT architect, author "Architecture and Patterns for IT"**

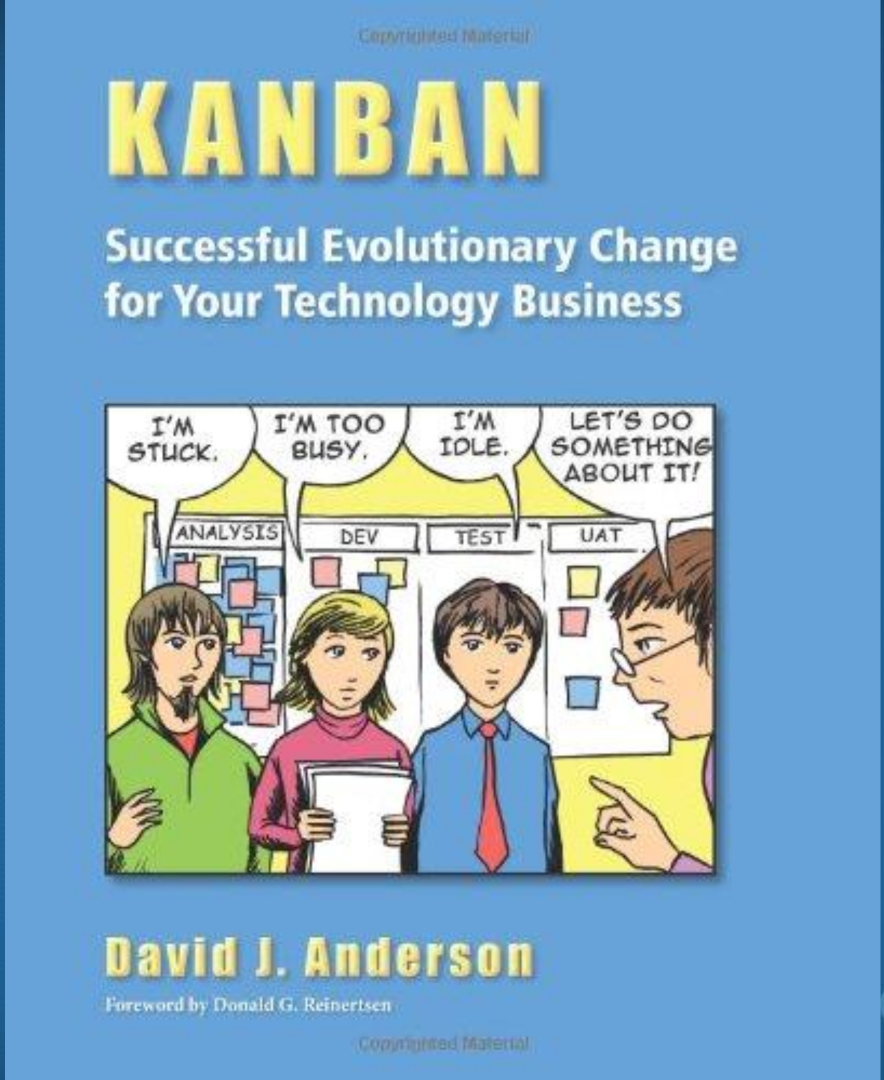
How were you introduced to Kanban?



Personal Kanban

Mapping Work | Navigating Life

Jim Benson
Tonianne DeMaria Barry

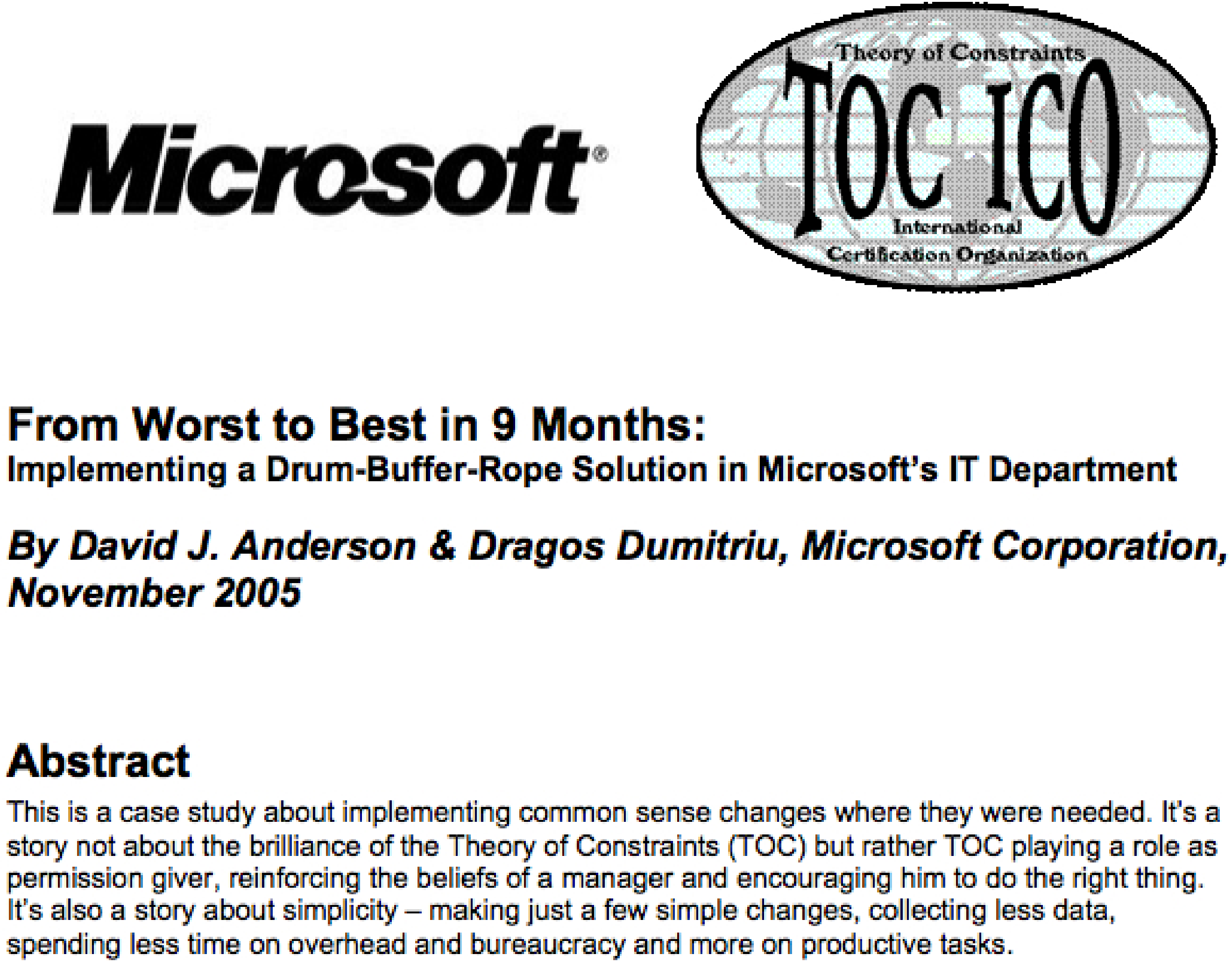


KANBAN

Successful Evolutionary Change
for Your Technology Business

David J. Anderson

Foreword by Donald G. Reinertsen



Microsoft®

Theory of Constraints
TOC ICO
International
Certification Organization

From Worst to Best in 9 Months:

Implementing a Drum-Buffer-Rope Solution in Microsoft's IT Department

By David J. Anderson & Dragos Dumitriu, Microsoft Corporation, November 2005

Abstract

This is a case study about implementing common sense changes where they were needed. It's a story not about the brilliance of the Theory of Constraints (TOC) but rather TOC playing a role as permission giver, reinforcing the beliefs of a manager and encouraging him to do the right thing. It's also a story about simplicity – making just a few simple changes, collecting less data, spending less time on overhead and bureaucracy and more on productive tasks.

- "…lead time went from 155 days to 22 days. Lead times were so good that they created a new SLA guarantee of 25 days…"

Why are Kanban boards so prominent in *The Phoenix Project*?

The All Too Familiar Problem Statements

- We get worked “dumped on us” by everyone else
- We sometimes make promises that we can’t deliver on
- Our work is always late
- We defer work that we shouldn’t
- No one takes ‘no’ for an answer
- We act before understanding the business
- Business is dissatisfied with our work

Source: Branden Williams

The All Too Familiar Problem Statements

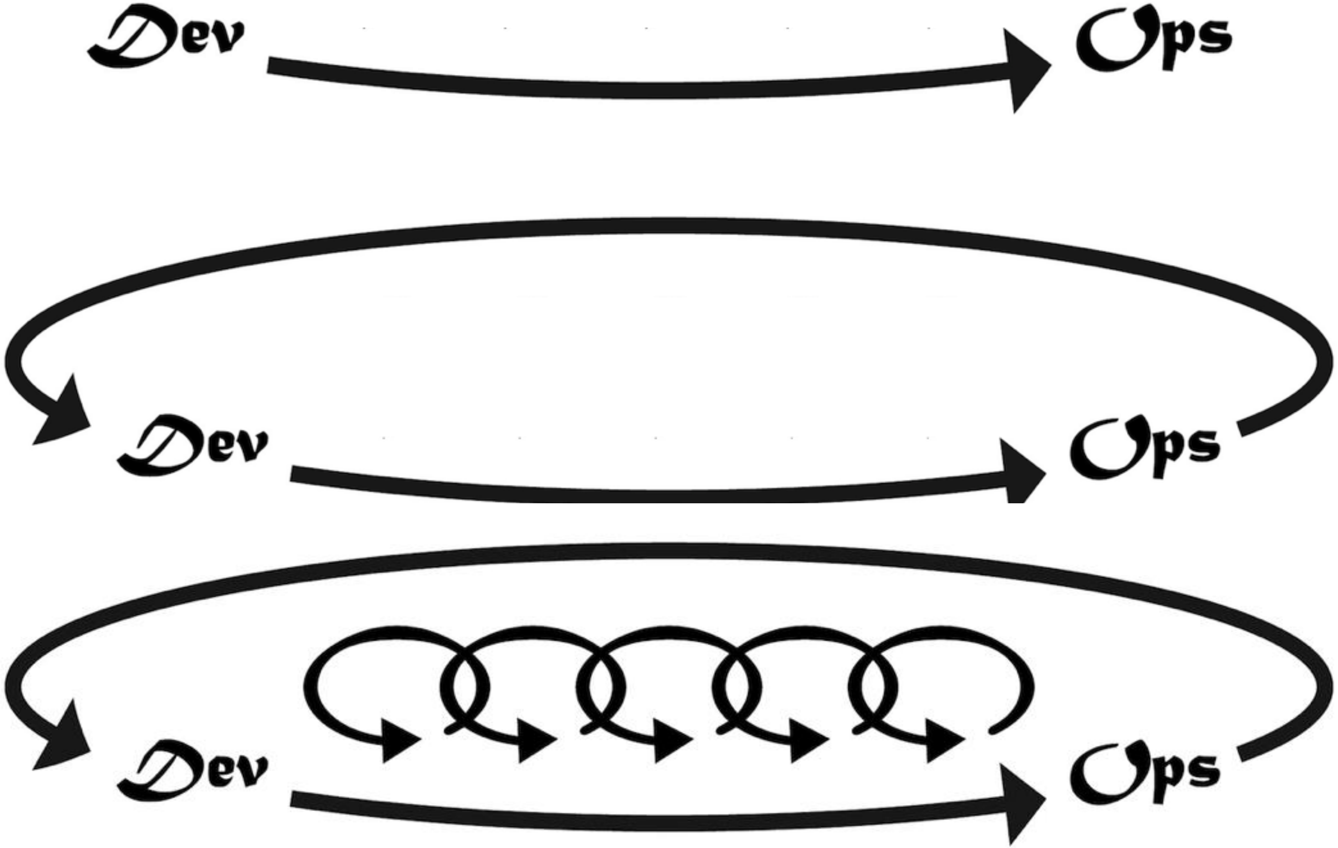
- Promises to customers and other stakeholders never met
- Too much firefighting and heroics
- We cut corners to the make the promised dates
- Ever accumulating technical debt
- Less and less time to retire technical debt
- Business is dissatisfied with our work
- Quality problems cause outages, service impairments
- Business outcomes aren’t met
- Everyone loses…

High Performing DevOps Teams

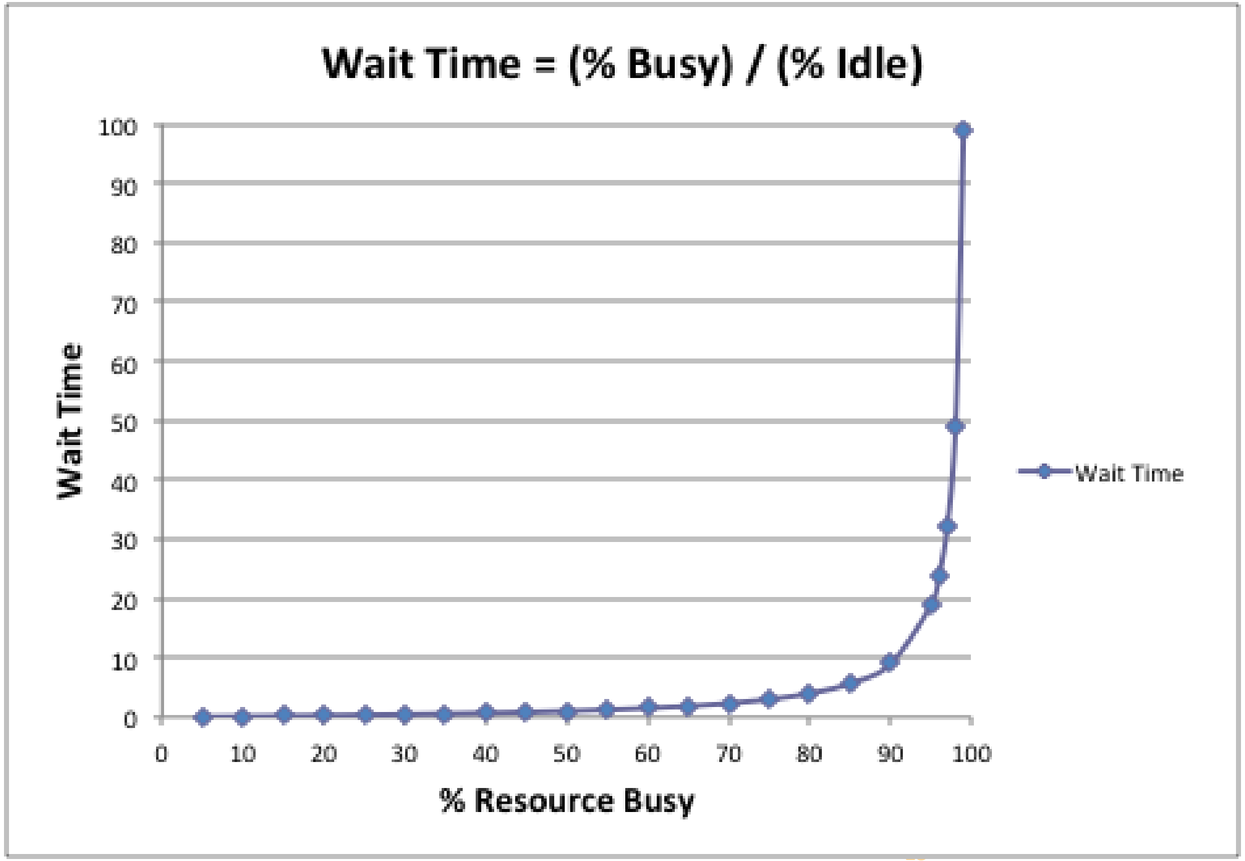
- **They're more agile**
  - 30x more frequent deployments
  - 8,000x faster lead time than their peers
- **They're more reliable**
  - 2x the change success rate
  - 12x faster MTTR

Source: Puppet Labs 2012 State Of DevOps: http://puppetlabs.com/2013-state-of-devops-infographic

The Three Ways



Why 15 min Tasks Take Weeks To Complete

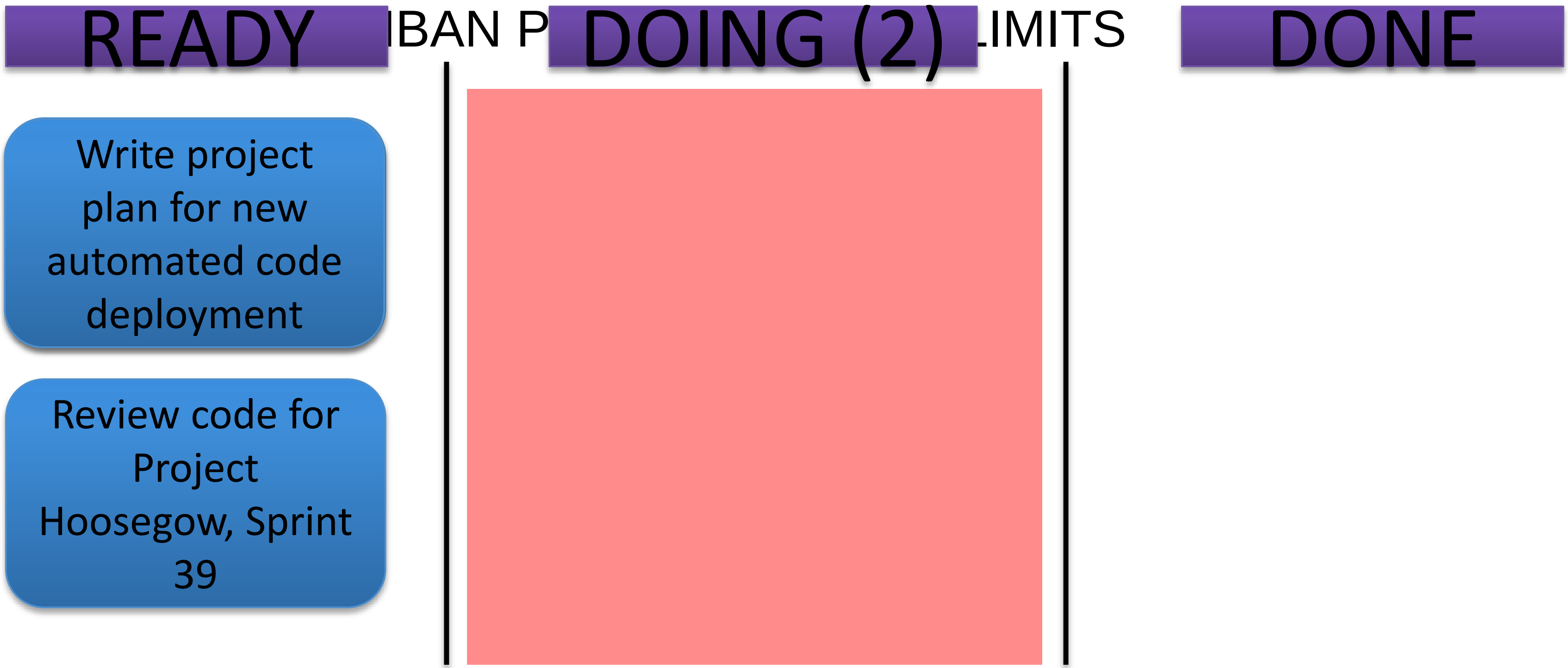


- Task queue time (actually, queue length)
  - 50% busy: 1 day
  - 75% busy: 3 days
  - 90% busy: 9 days
  - 95% busy: 19 days
  - 99% busy: 99 days

Kanbans

- What is it, and why does it work?
  - Popularized by Taiichi Ohno (Toyota)
  - Scheduling board for lean production
  - Good: Visualizes work in a system
  - Better: Visualizes work FLOW THROUGH a system
- Outcomes: Work gets done!
  - Work takes less time to complete (i.e., reduced cycle time, on time!)
  - Better tracking of effort and costs
  - Find recurring work that we can automate
  - Find work where there’s too much time ‘waiting’ or ‘in queue’
  - Business gets what they need, when they need it

Source: Branden Williams



READY

IBAN P

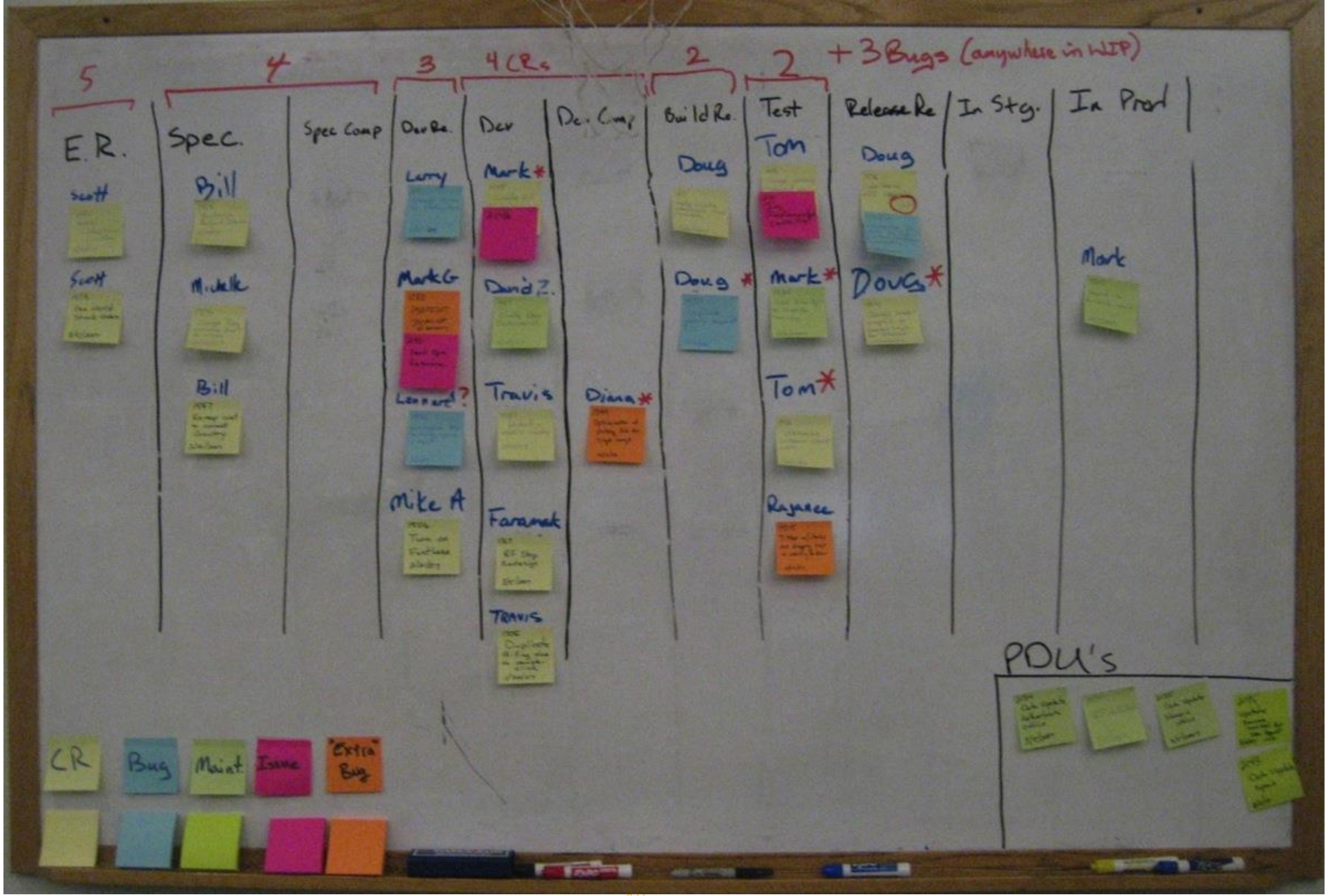
DOING (2)

LIMITS

DONE

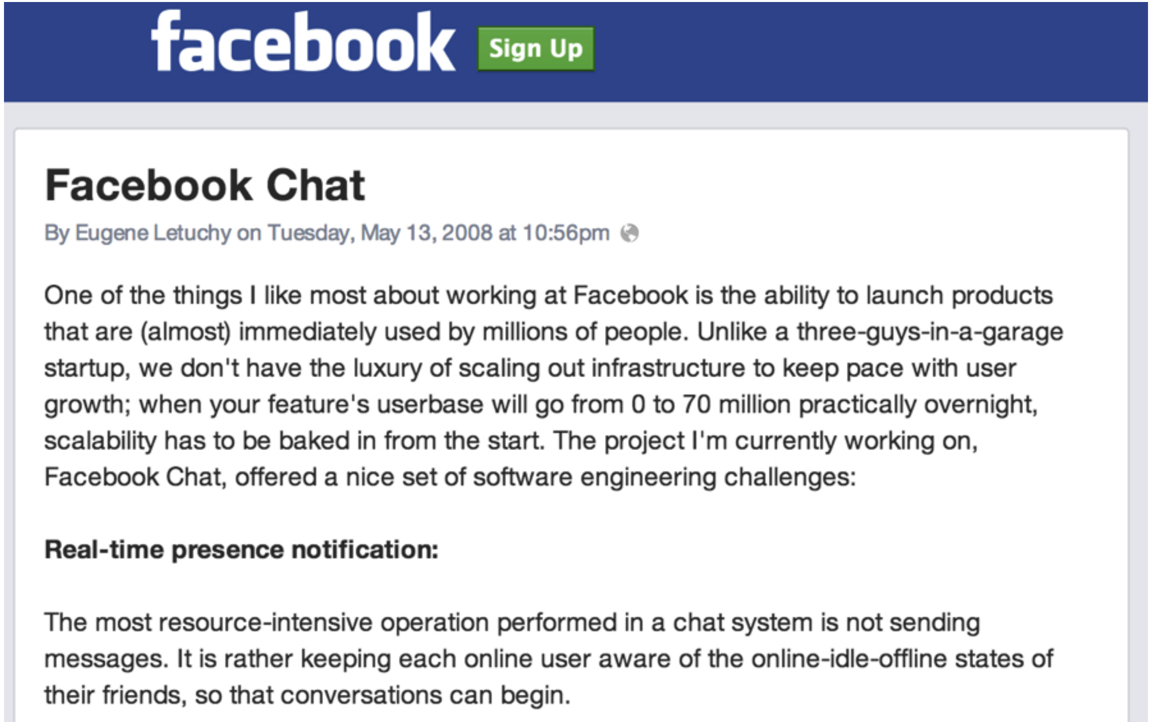
Write project plan for new automated code deployment

Review code for Project Hoosegow, Sprint 39



Source: Dominica DeGrandis, David J. Anderson

Deploy Smaller Changes, More Frequently *



Facebook Chat

By Eugene Letuchy on Tuesday, May 13, 2008 at 10:56pm

One of the things I like most about working at Facebook is the ability to launch products that are (almost) immediately used by millions of people. Unlike a three-guys-in-a-garage startup, we don't have the luxury of scaling out infrastructure to keep pace with user growth; when your feature's userbase will go from 0 to 70 million practically overnight, scalability has to be baked in from the start. The project I'm currently working on, Facebook Chat, offered a nice set of software engineering challenges:

Real-time presence notification:

The most resource-intensive operation performed in a chat system is not sending messages. It is rather keeping each online user aware of the online-idle-offline states of their friends, so that conversations can begin.

Source: http://www.facebook.com/note.php?note_id=14218138919

Deploy Smaller Changes, More Frequently *

- Decouple feature releases from code deployments
- Deploy features in a disabled state, using feature flags
- Require all developers check code into trunk daily (at least)
- Practice deploying smaller changes, which dramatically reduces risk and improves MTTR

The First Way: Outcomes

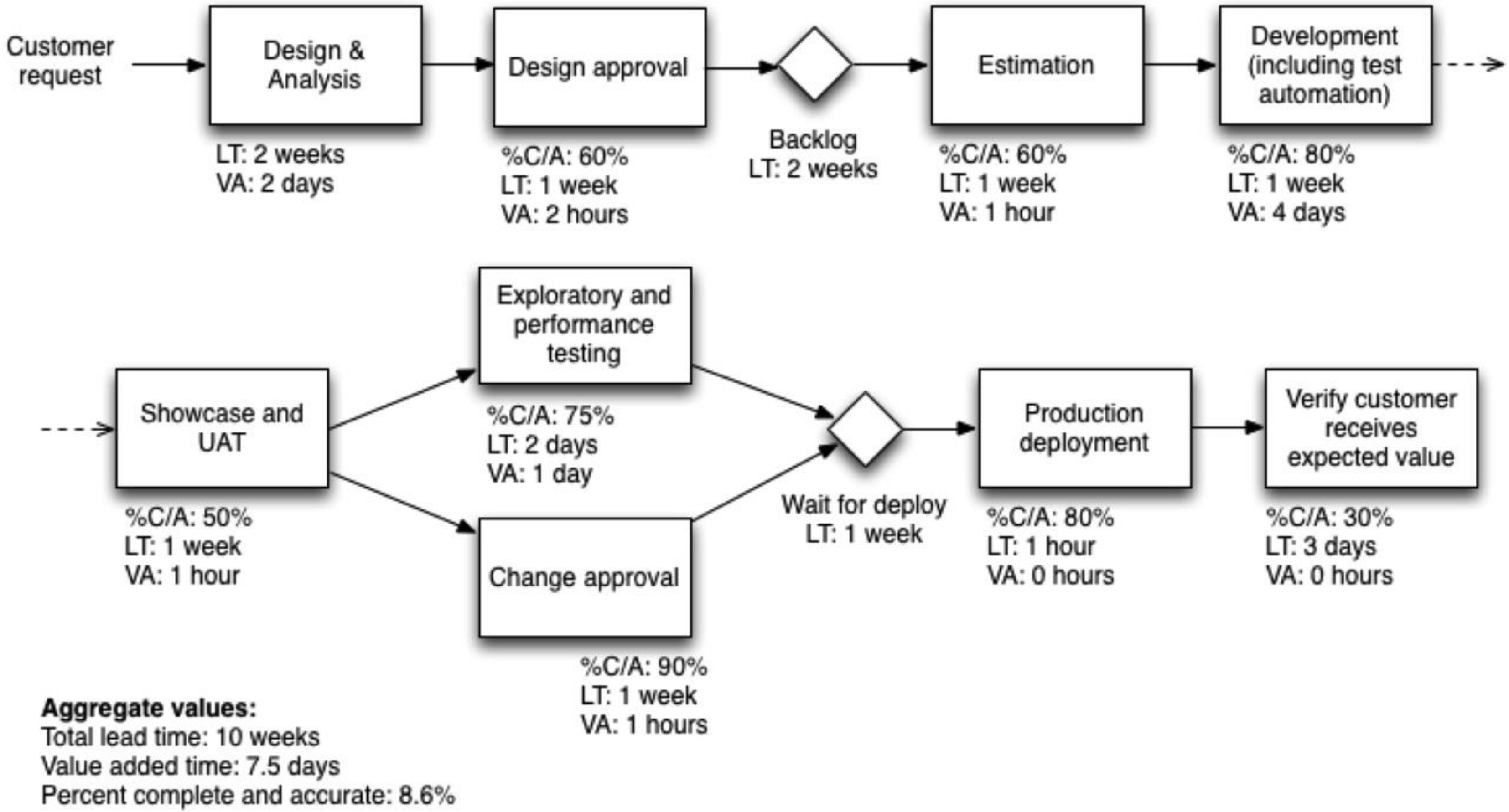
- Everyone's work is visible
- Work in process is limited
- Lead times go down
- We get in the habit of daily deployments, decoupling deploys from sprint boundaries
- Determinism in the release process
- Consistent Dev, Test and Production environments, all properly built before deployment begins
- Features being deployed daily without catastrophic failures
- Decreased lead time
- Faster cycle time and release cadence

What would you want everyone to learn about Kanban?

“deploys per day”

vs.

“lead time”



Customer request

Design & Analysis

LT: 2 weeks
VA: 2 days

Design approval

%C/A: 60%
LT: 1 week
VA: 2 hours

Backlog
LT: 2 weeks

Estimation

%C/A: 60%
LT: 1 week
VA: 1 hour

Development (including test automation)

%C/A: 80%
LT: 1 week
VA: 4 days

Showcase and UAT

%C/A: 50%
LT: 1 week
VA: 1 hour

Exploratory and performance testing

%C/A: 75%
LT: 2 days
VA: 1 day

Change approval

%C/A: 90%
LT: 1 week
VA: 1 hours

Wait for deploy
LT: 1 week

Production deployment

%C/A: 80%
LT: 1 hour
VA: 0 hours

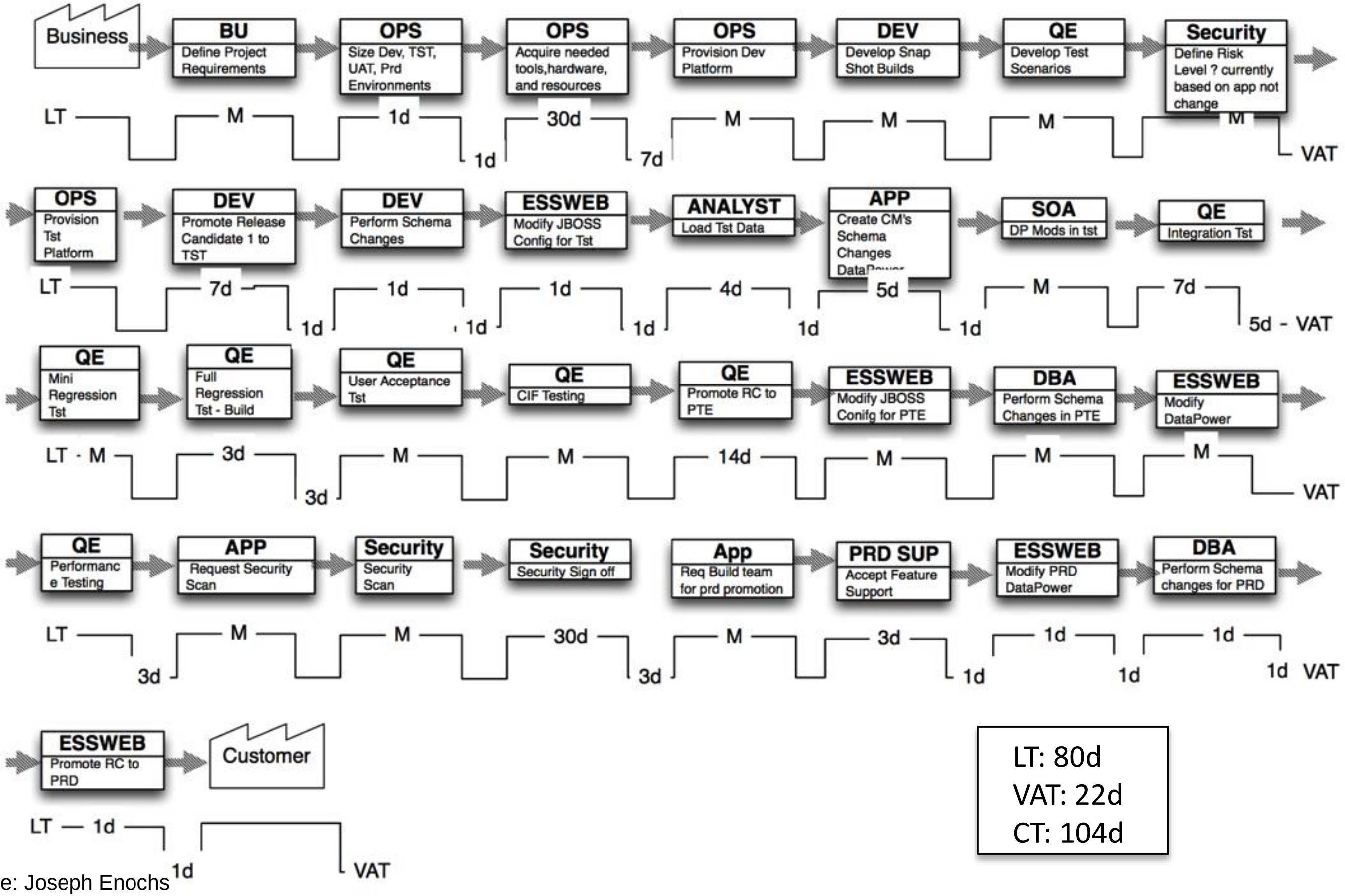
Verify customer receives expected value

%C/A: 30%
LT: 3 days
VA: 0 hours

Aggregate values:
Total lead time: 10 weeks
Value added time: 7.5 days
Percent complete and accurate: 8.6%

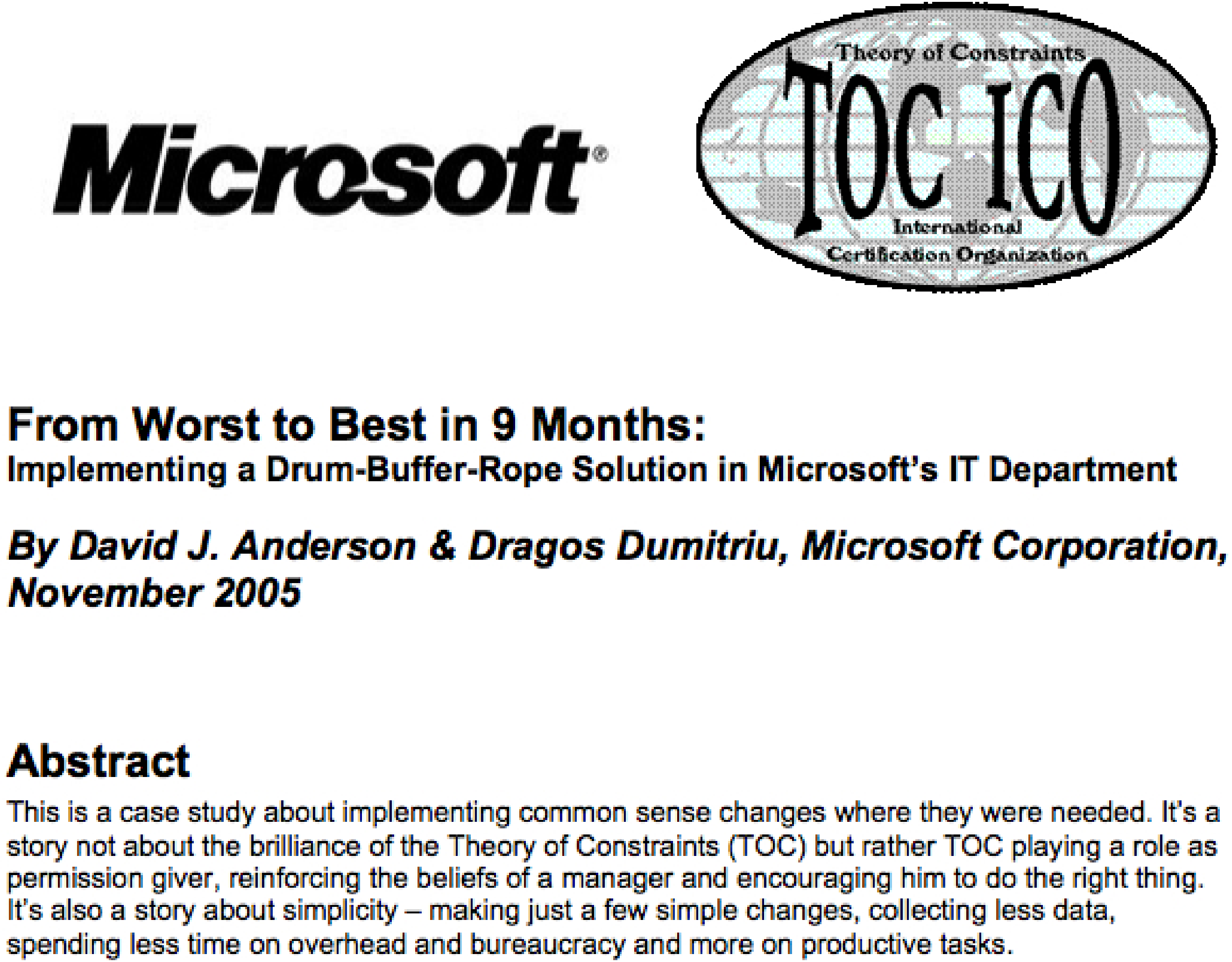
Source: Lean Enterprise (upcoming): Jez Humble, Joanne Molesky, and Barry O'Reilly

When Lead Times == 3 Months



LT: 80d
VAT: 22d
CT: 104d

Source: Joseph Enochs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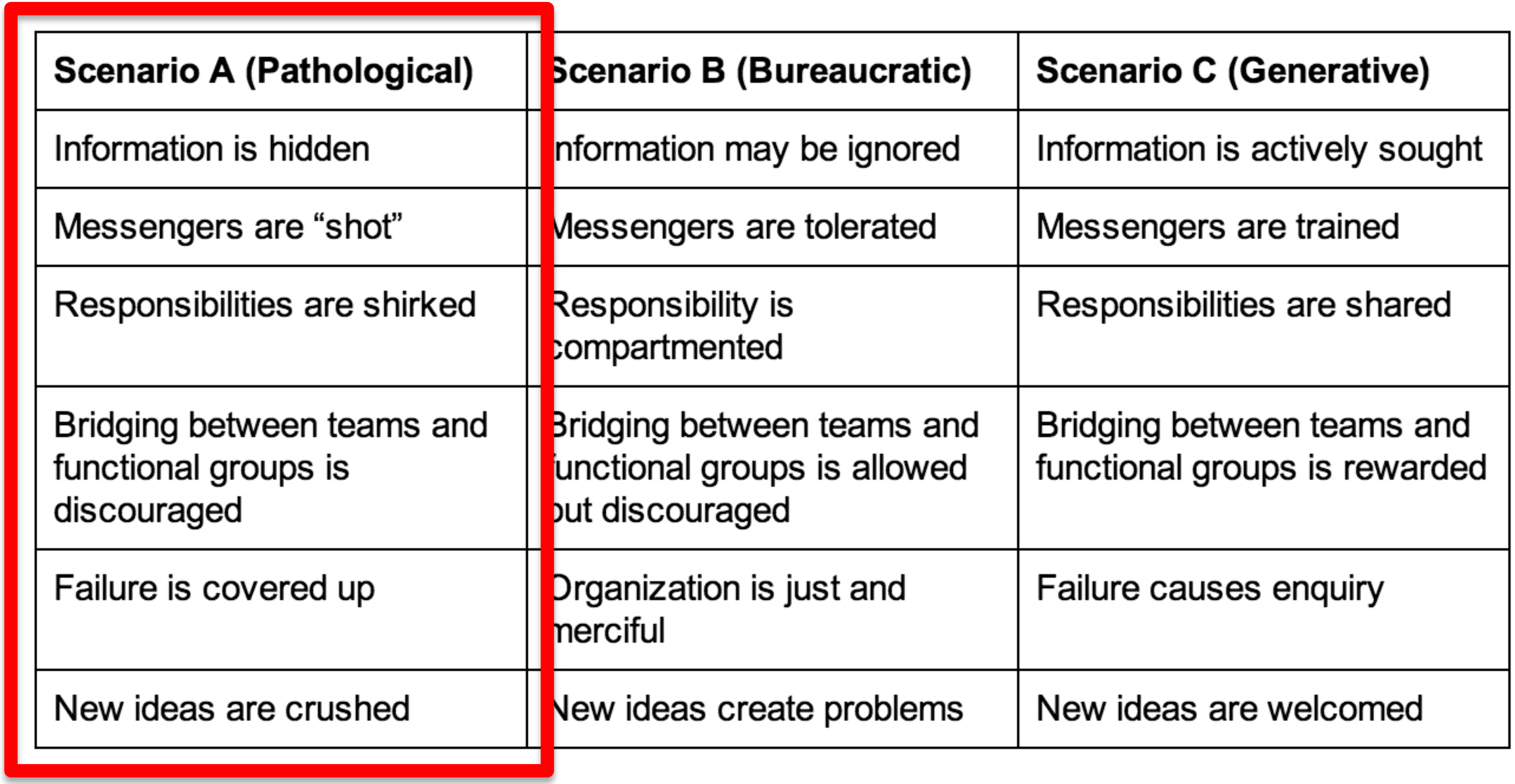
Training Everyone Should Take!

- Dominica DeGrandis: “Kanban and DevOps” 2 Day Workshop
  - http://www.ddegrandis.com/services/kanban-training/

One Of The Highest Predictors Of Performance

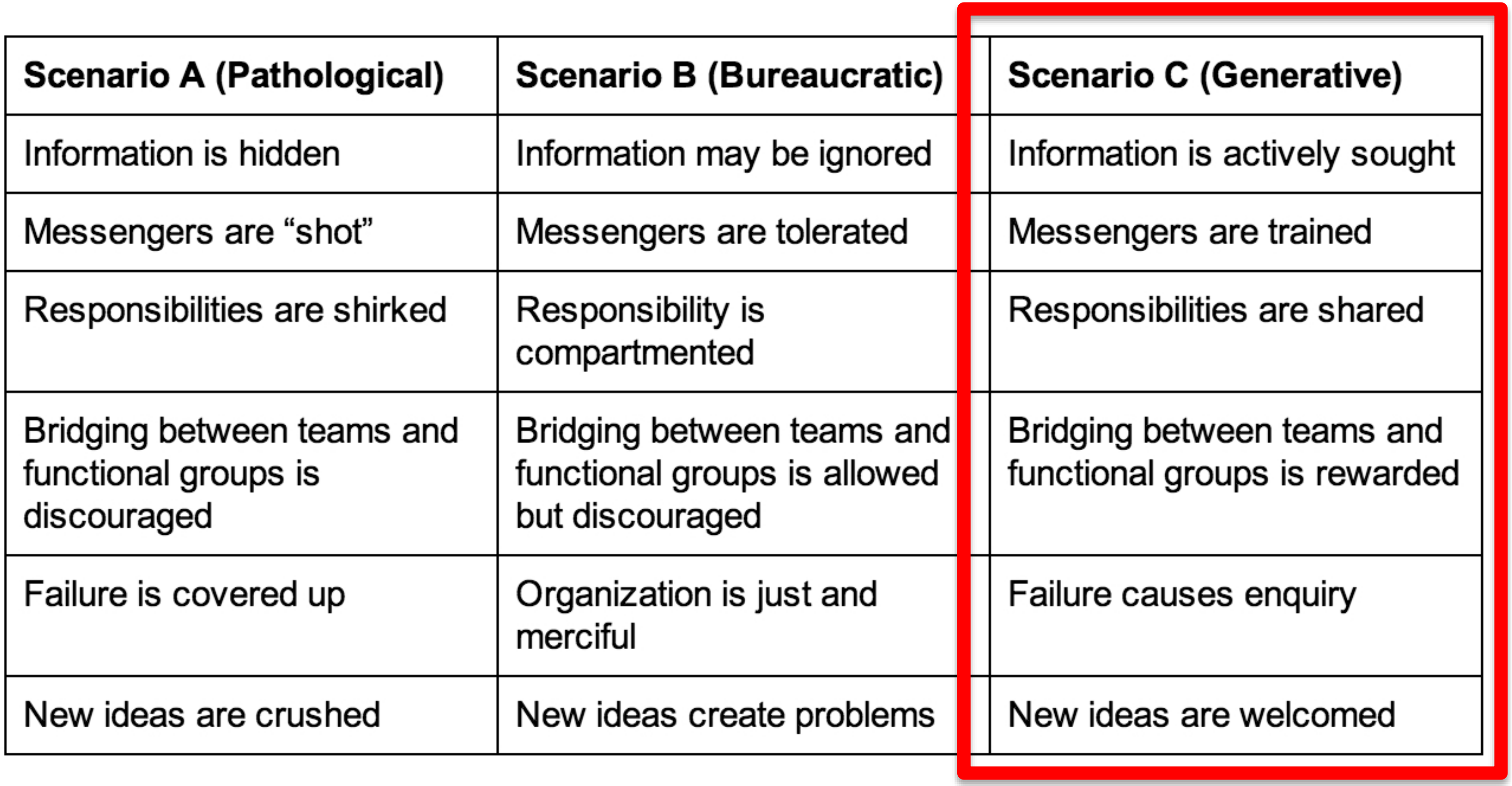


Scenario A (Pathological)	Scenario B (Bureaucratic)	Scenario C (Generative)
Information is hidden	nformation may be ignored	Information is actively sought
Messengers are “shot”	Messengers are tolerated	Messengers are trained
Responsibilities are shirked	Responsibility is compartmented	Responsibilities are shared
Bridging between teams and functional groups is discouraged	Bridging between teams and unctional groups is allowed but discouraged	Bridging between teams and functional groups is rewarded
Failure is covered up	Organization is just and merciful	Failure causes enquiry
New ideas are crushed	New ideas create problems	New ideas are welcomed

Source: Westrum Organizational Typology Model (2004)

@RealGeneKim

One Of The Highest Predictors Of Performance



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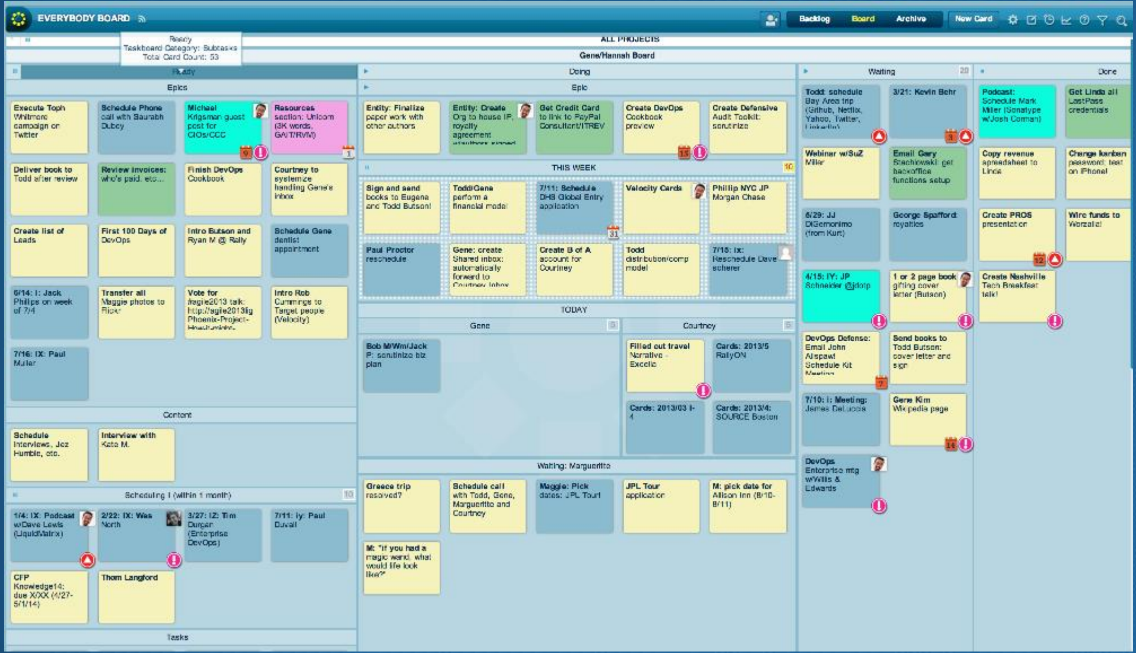
How do you use Leankit?



Ready
Taskboard Category: Subtasks
Total Card Count: 53

ALL PROJECTS

Gene/Hannah Board

Ready

Epics

- Execute Toph Whitmore campaign on Twitter
- Schedule Phone call with Saurabh Dubey
- Michael Krigsman guest post for CIOs/CCC
- Resources section: Unicorn (3K words, GA/T/RVM)
- Deliver book to Todd after review
- Review invoices: who's paid, etc...
- Finish DevOps Cookbook
- Courtney to systemize handling Gene's inbox
- Create list of Leads
- First 100 Days of DevOps
- Intro Butson and Ryan M @ Rally
- Schedule Gene dentist appointment
- 6/14: I: Jack Philips on week of 7/4
- Transfer all Maggie photos to Flickr
- Vote for #agile2013 talk: http://agile2013ig Phoenix-Project-Headhunting
- Intro Rob Cummings to Target people (Velocity)
- 7/16: IX: Paul Muller

Content

- Schedule Interviews, Jez Humble, etc.
- Interview with Kate M.

Scheduling 1 (within 1 month) 10

- 1/4: IX: Podcast w/Dave Lewis (LiquidMatrix)
- 2/22: IX: Wes North
- 3/27: IZ: Tim Durgan (Enterprise DevOps)
- 7/11: Iy: Paul Duvall
- CFP Knowledge14: due X/XX (4/27-5/1/14)
- Thom Langford

Tasks

Doing

Epic

- Entity: Finalize paper work with other authors
- Entity: Create Org to house IP, royalty agreement
- Get Credit Card to link to PayPal Consultant/ITREV
- Create DevOps Cookbook preview
- Create Defensive Audit Toolkit: scrutinize

THIS WEEK 10

- Sign and send books to Eugene and Todd Butson!
- Todd/Gene perform a financial model
- 7/11: Schedule DHS Global Entry application
- Velocity Cards
- Phillip NYC JP Morgan Chase
- Paul Proctor reschedule
- Gene: create Shared inbox: automatically forward to Courtney inbox
- Create B of A account for Courtney
- Todd distribution/comp model
- 7/15: Ix: Reschedule Dave Scherer

TODAY

Gene 5

- Bob M/Wm/Jack P: scrutinize biz plan

Courtney 5

- Filled out travel Narrative - Excelic
- Cards: 2013/5 RallyON
- Cards: 2013/03 I-4
- Cards: 2013/4: SOURCE Boston

Waiting: Marguerite

- Greece trip resolved?
- Schedule call with Todd, Gene, Marguerite and Courtney
- Maggie: Pick dates: JPL Tour!
- JPL Tour application
- M: pick date for Allison Inn (8/10-8/11)
- M: "If you had a magic wand, what would life look like?"

Waiting 20

- Todd: schedule Bay Area trip (Github, Netflix, Yahoo, Twitter, LinkedIn)
- 3/21: Kevin Behr
- Webinar w/SuZ Miller
- Email Gary Stachiowski: get backoffice functions setup
- 6/29: JJ DiGemonimo (from Kurt)
- George Spafford: royalties
- 4/15: IY: JP Schneider @jdorp
- 1 or 2 page book gifting cover letter (Butson)
- DevOps Defense: Email John Allspaw! Schedule Kit Meeting
- Send books to Todd Butson: cover letter and sign
- 7/10: I: Meeting: James DeLuccia
- Gene Kim Wikipedia page
- DevOps Enterprise mtg w/Willis & Edwards

Done

- Podcast: Schedule Mark Miller (Sonatype w/Josh Corman)
- Get Linda all LastPass credentials
- Copy revenue spreadsheet to Linda
- Change kanban password; test on iPhone!
- Create PROS presentation
- Wire funds to Worzala!
- Create Nashville Tech Breakfast talk!

- Doing
  - Epics
- Lanes
  - Content
  - Meetings
- @Waiting
- @Office
- @Internet

DevOps Enterprise Summit

- Save the date: October 21-23, 2014
- DevOps Enterprise is a conference for horses, by horses
    - Macy's, Disney, GE Capital, Blackboard, Telstra, US Department of Homeland Security, CSG
- Leaders driving DevOps transformations will talk about
    - The business problem they set out to solve
    - The obstacles they had to overcome
    - The business value they created
- Submit talks at: http://devopsenterprisesummit.com/

YOUR QUESTIONS ANSWERED

Q&A: DevOps

- What are the major challenges typically faced when trying to implement DevOps in organizations?
- How does Release Engineering fit into the DevOps framework (specifics on the interaction between DEV, RE, and Ops)
- Please share techniques for inspiring executives to appreciate the value of DevOps enough that they will invest in it.

DevOps and Kanban

- Specifics of implementing Kanban for Ops...lots of examples for Engineering...not so many for Operations where there are more work streams?
- What underlying principles and values are most effective to get developers to think about delivery through to production?
- Kanban in firefighting teams - how to limit WIP when stories rarely complete before interruption?
- Excited to hear why Kanban should fight against other IT processes such as itil cobit iso and the like?

Q&A: Scrum vs. Kanban

- How do you get developers and ops to work together when the former use Scrum and the latter use Kanban?
- Is Kanban better than Scrum for an organization with quarterly releases?
- Kanban for large projects vs Sprints for large projects?
- Can DevOps be executed using the SAFe methodology?

Q&A: Getting Started

- How to get started… Baby steps or big leap?
- How does a DevOps approach change to accommodate a large vs. small organization?

Learning Resources

- Kanban and DevOps: Resource Guide for The Phoenix Project: http://itrevolution.com/resource-guide-for-the-phoenix-project-kanbans-part-2/
- The Top 11 Things You Need to Know About DevOps: http://itrevolution.com/devops-blog/
- Visit Gene’s website at: www.itrevolution.com
  - Blogs, whitepapers, books and more

Thank you!