

Move Fast and Break Things



Joel Pobar
Engineering Director

Performance @ Facebook





CNUTCon 2017

全球运维技术大会

上海·光大会展中心大酒店 | 2017.9.10-11

智能时代的新运维

大数据运维
安全
SRE
DevOps
Kubernetes
Serverless
游戏运维
AI Ops
智能化运维
基础架构
监控
互联网金融



StuQ

斯达克学院

实践驱动的IT教育



斯达克学院(StuQ)，极客邦旗下实践驱动的IT教育平台。通过线下和线上多种形式的综合学习解决方案，帮助IT从业者和研发团队提升技能水平。



10大职业技术领域课程

<http://www.stuq.org>



2+ Billion



1+ Billion



700+ Million



1+ Billion

Daily Video Views



Bandwidth Growth







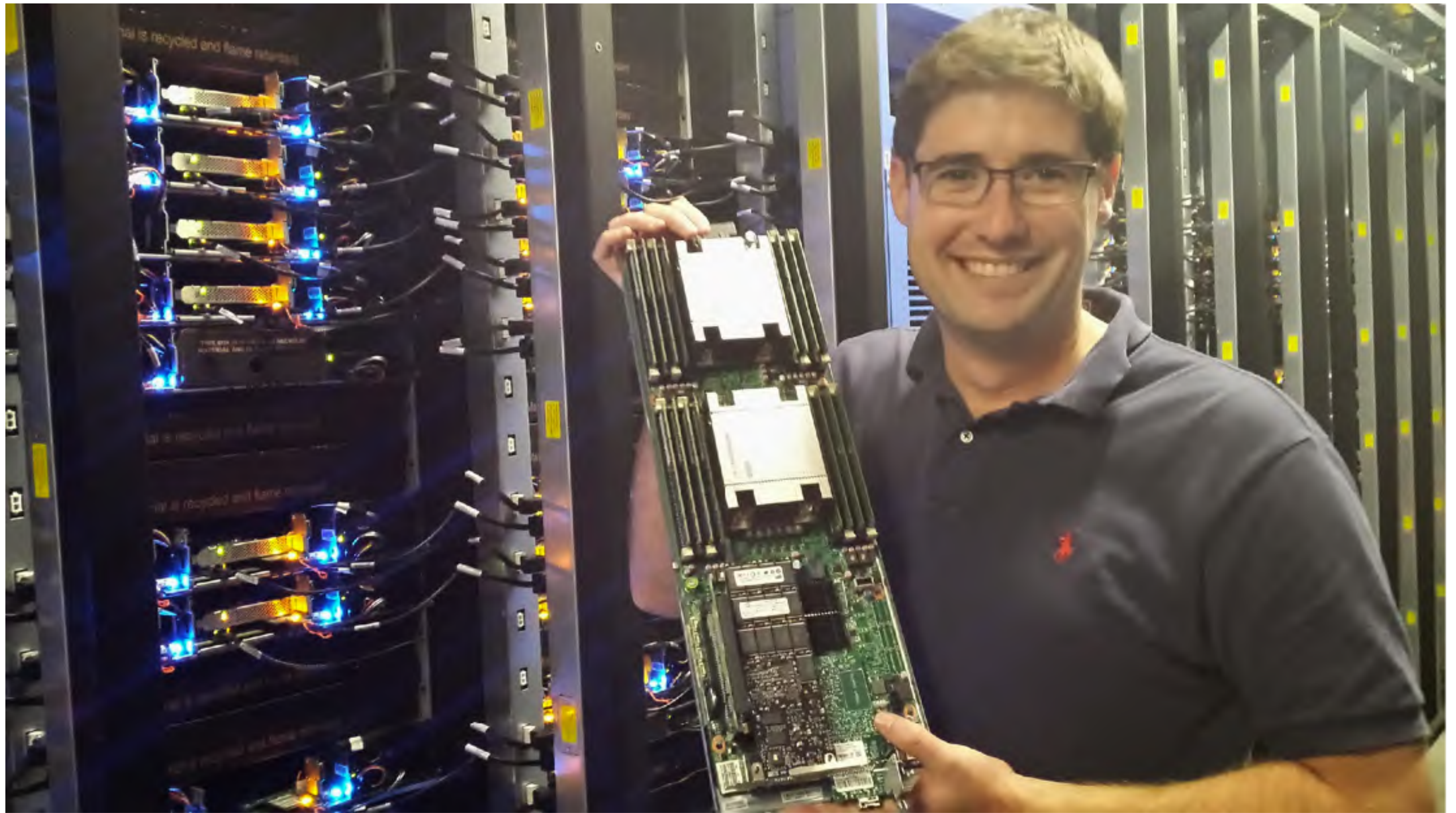


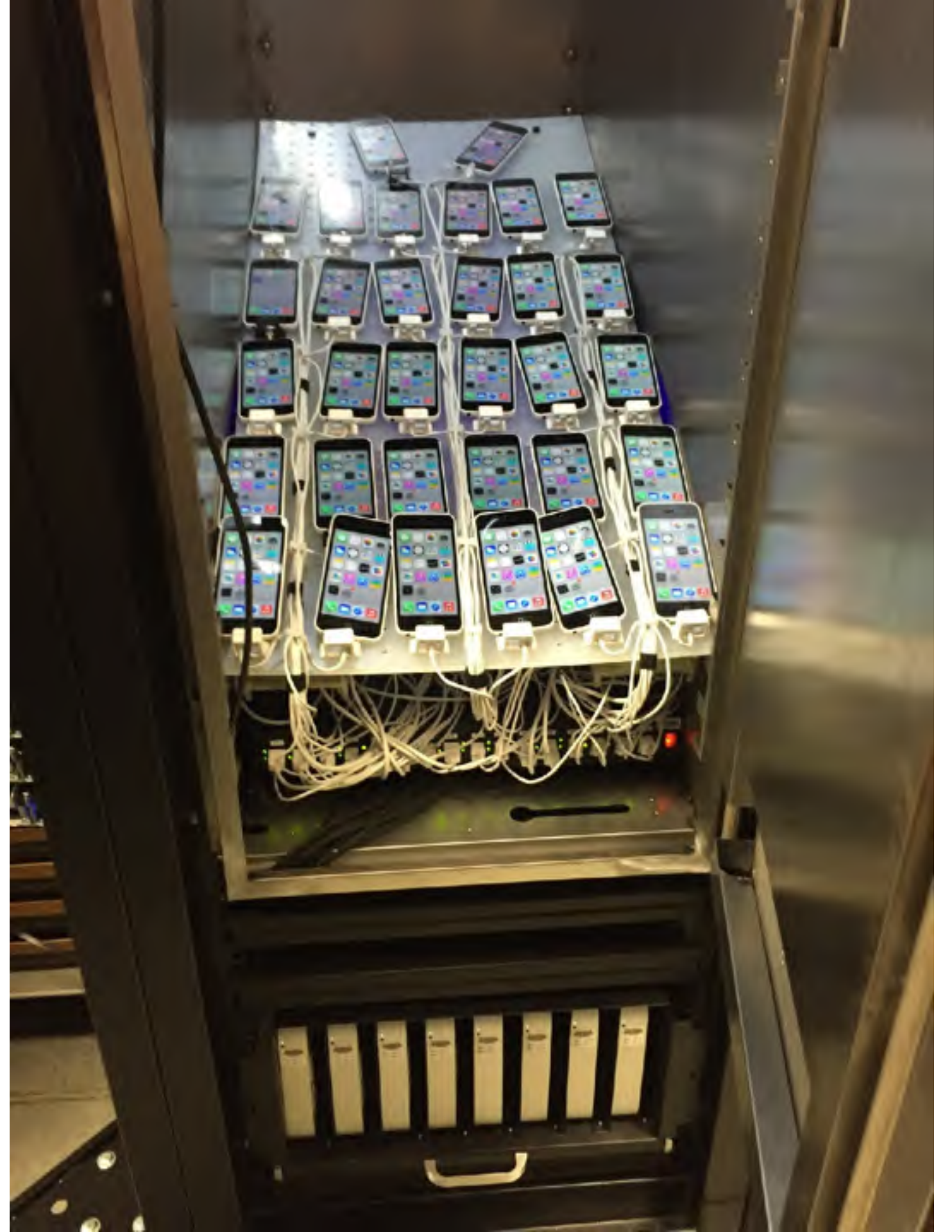




424.f











What is the secret sauce?

Ingredients

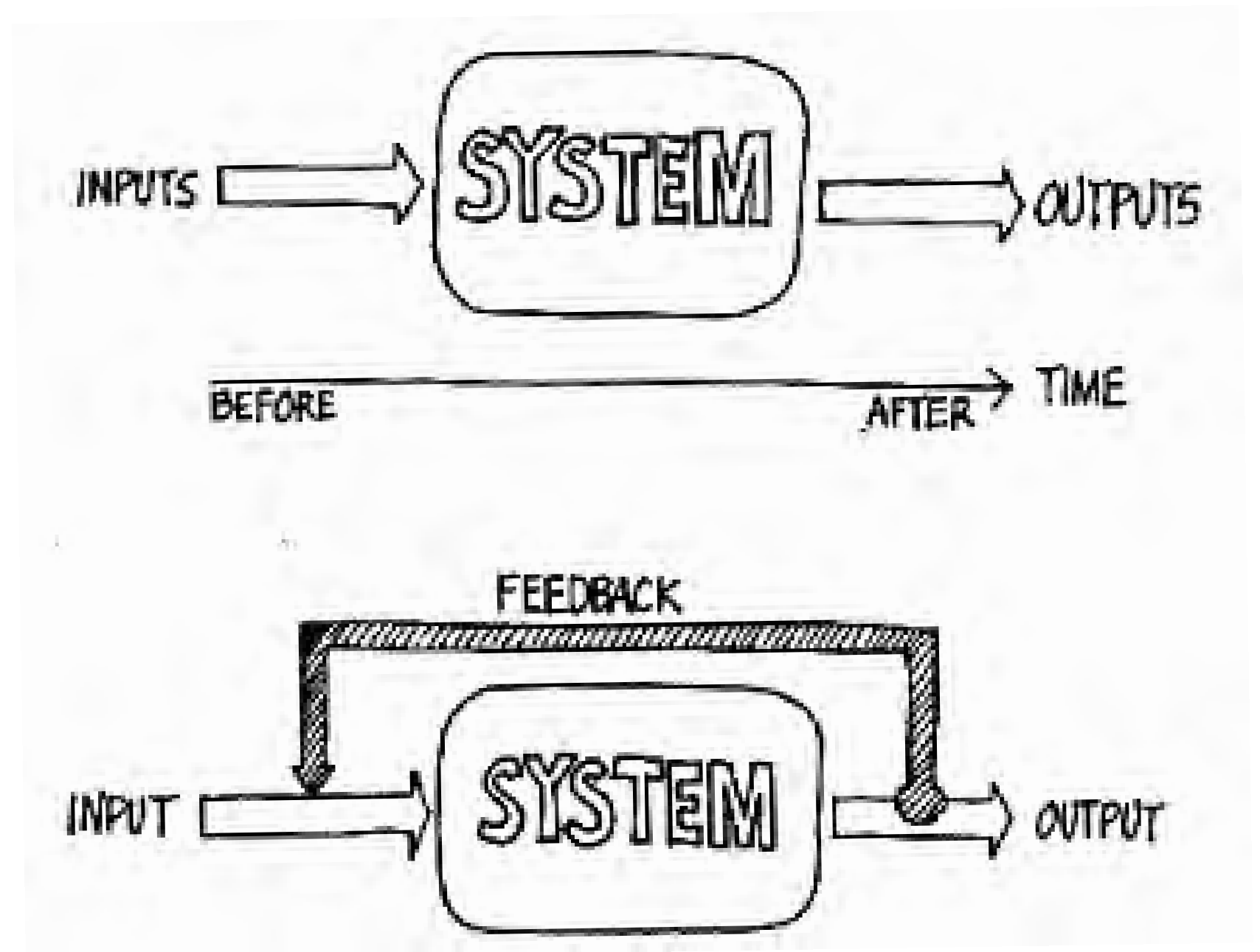
1. Feedback Loops

2. Culture

Feedback Loops

Feedback Loops

- Open Loop
 - Taxi driver returning to hotel, without taking in to a account theater performance
- Closed Loop
 - Uber. Real time traffic + demand



Facebook Examples of Feedback Loops

1. Product development

2. Career growth and performance

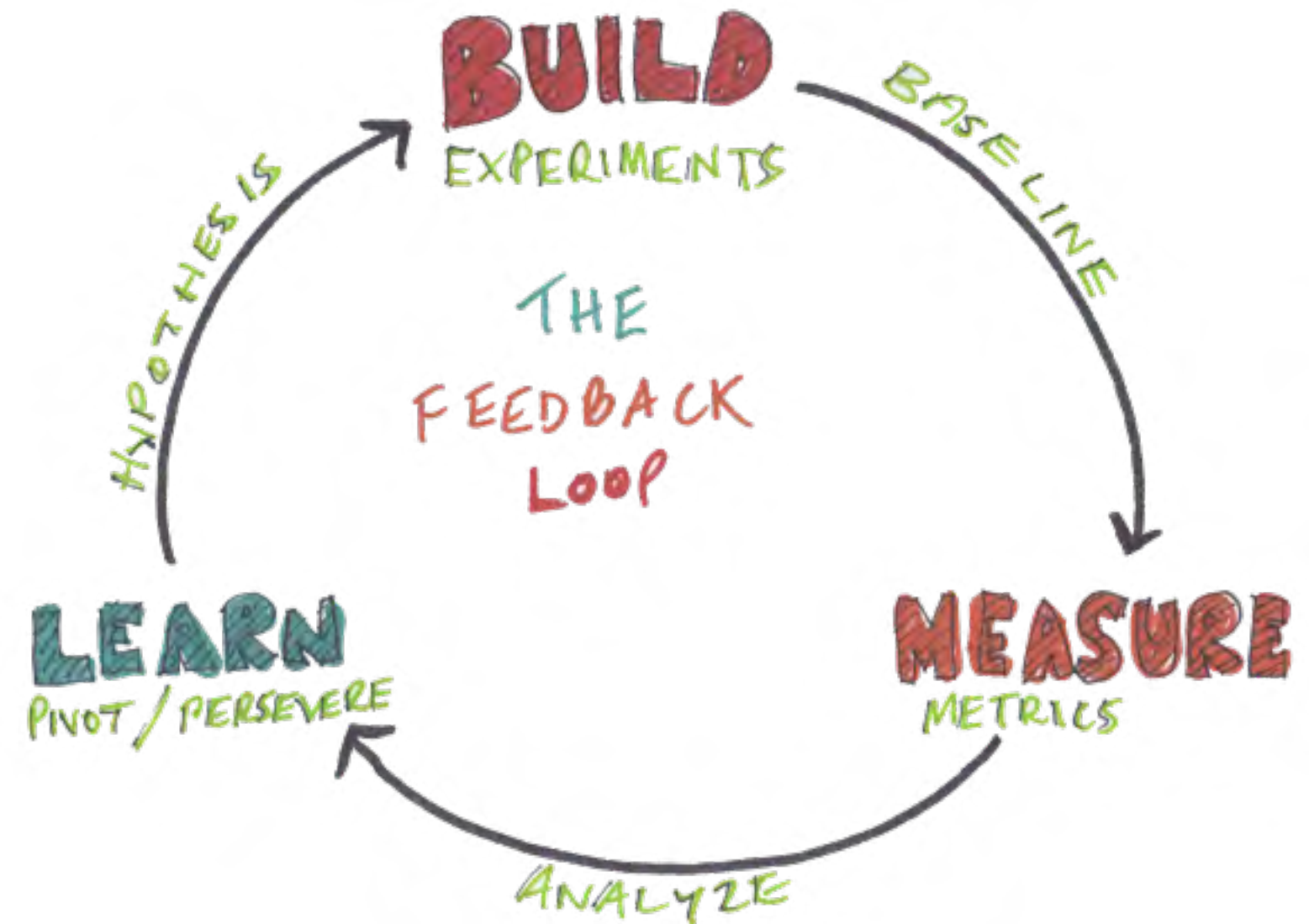
Facebook Examples of Feedback Loops

1. Product development

2. Career growth and performance

Building Products

- Decide on features
- Furiously work on them
- Create experiment
- Measure, get results





Objective C

All iOS versions



Java

Android >= 3.x



PHP/Hack

React JS

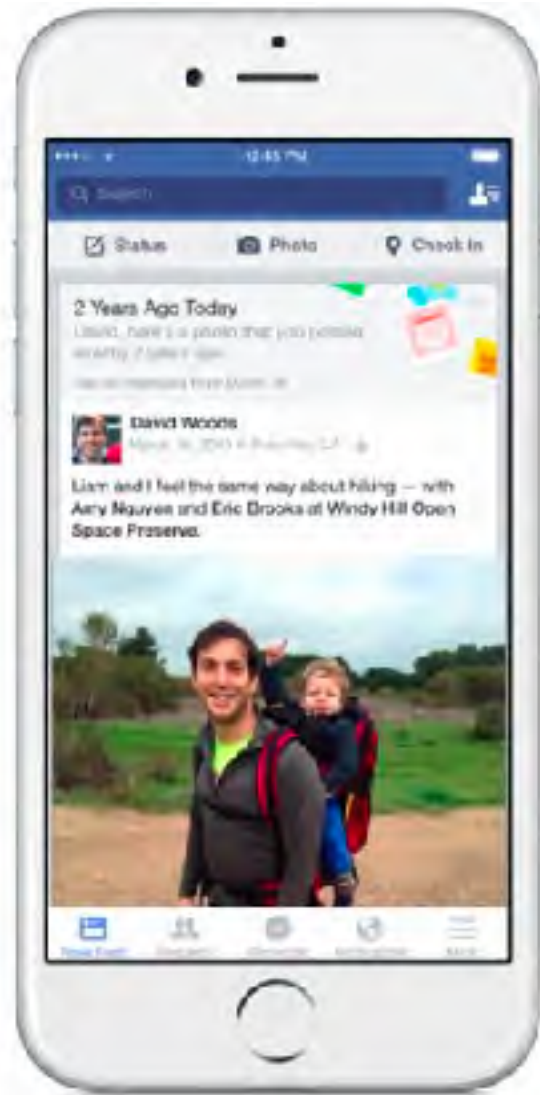
GraphQL

C++

Java

Haskell

D



Every week



Every week



Every hour

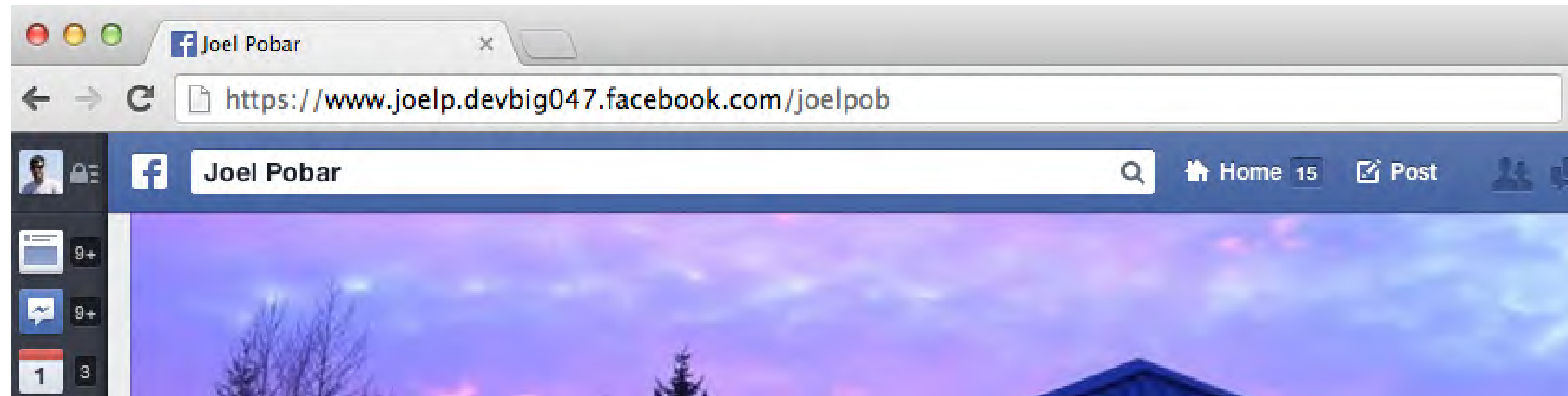
What the, PHP?

1. Great workflow
2. No state or concurrency



Developer environment looks like production

1. 32 core, ~3TB of flash, 144G of RAM



Code Review

The screenshot shows a Phabricator code review page for revision D915832. The title is "Print command errors to console.stderr instead of to the bare stderr". The page is marked as "Closed".

Author: royw
Reviewers: mbolin
CCs: christianl

Lint: No Linters Available
Unit: Unit Tests OK
[Show Full Unit Results \(1 Passed\)](#)

Commits: rBUCK976c0bf91f9f: Print command errors to console.stderr instead of to the bare stderr
Branch: parseErrorToStderr
Lines: 3
Arcanist Project: buck

Async Builds: Async Builds OK
[Show all builds](#)

Comments:

- royw** explained the test plan for this revision. (Aug 5 2013, 8:09 PM · [D915832#test-plan](#))
buck build buck
- mbolin** requested changes to this revision. (Via Web · Aug 6 2013, 10:19 AM · [D915832#1](#))
[Inline Comments](#)

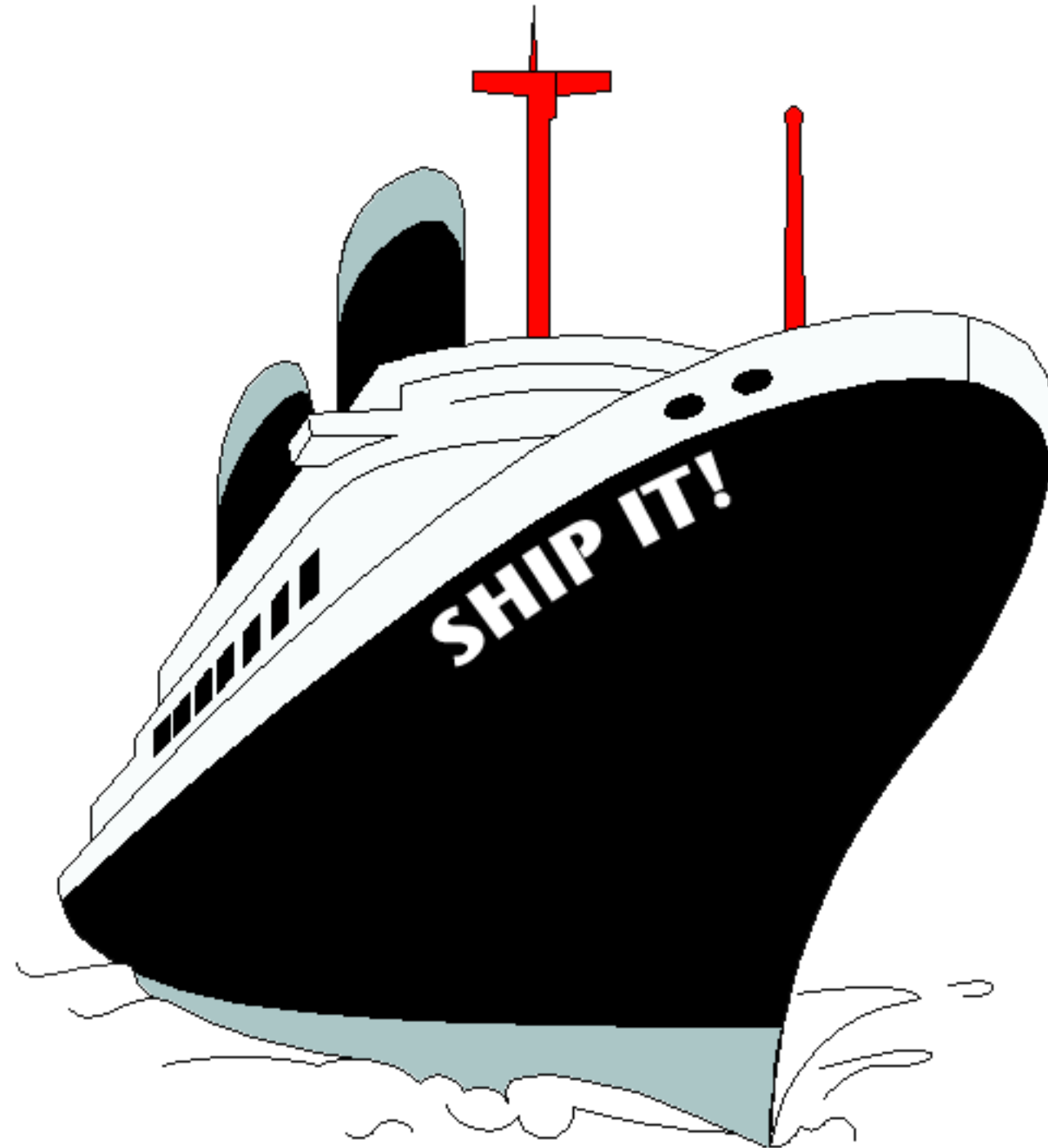
Actions: Subscribe, Edit Dependencies, Download Raw Diff, Edit Facebook Tasks, Flag For Later, Award Token

Code Review



joelm commented on this revision.

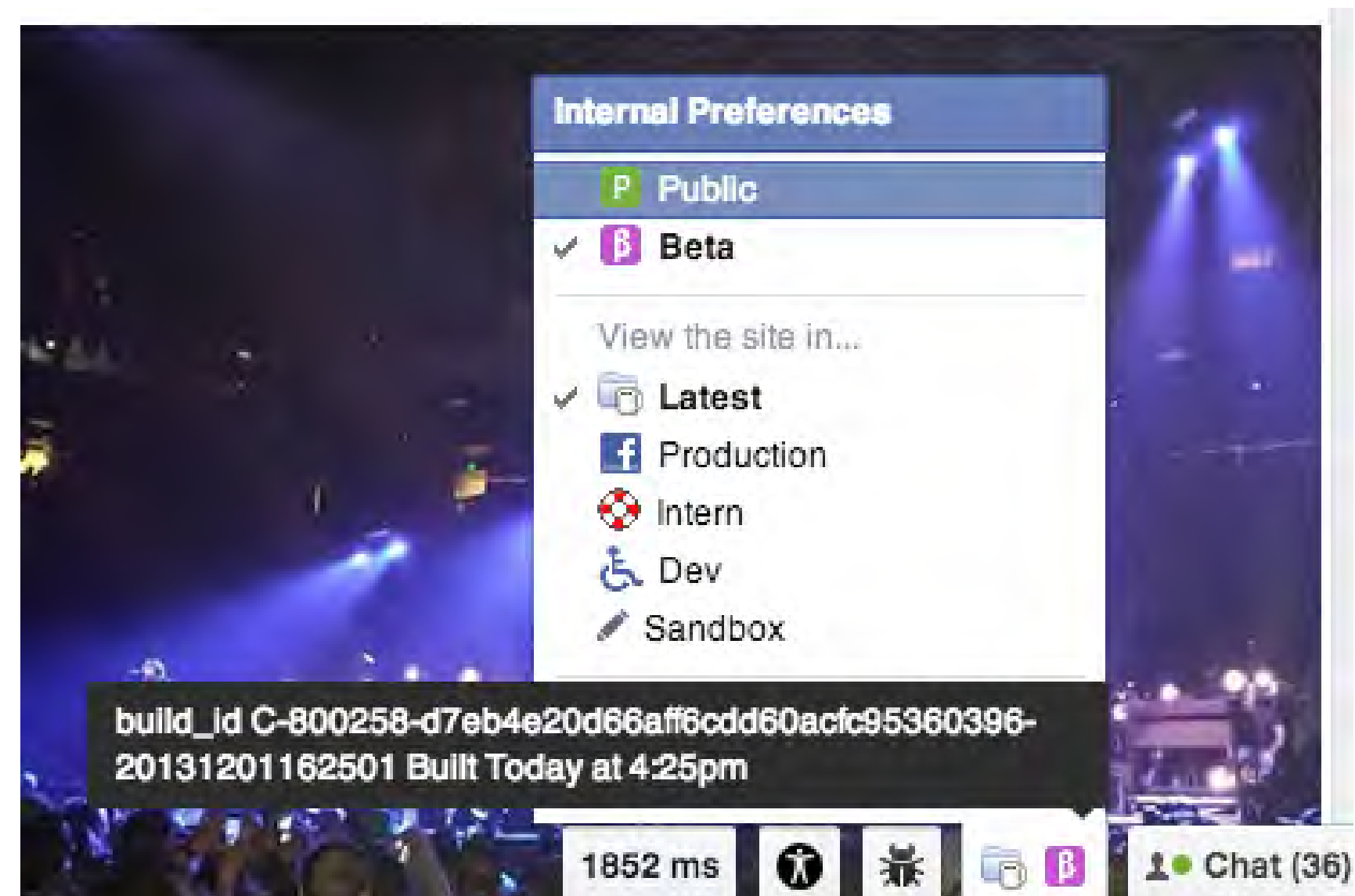
Via Web · Fri, Nov 22, 9:50 AM · D1069304#9



...after the unit tests pass and allow you to, of course!

Employee and Beta Dogfooding

- I'm always on www 'master'
- I'm always on daily iOS/Android builds
- Millions of Mobile Alpha/Beta testers



A/B Testing

- Gatekeeper: A/B testing on steroids
 - 500+ experiments on app startup
 - 500 million+ Gatekeeper experiment checks per second

Search

Project: 64bit_rollout

New Group | History | RenderTime

Rank	Move	Group Des
1	▲▼	all users (delete)

New Restraint

Restraint Type Age - Older ▼

Save Cancel

- Age - Older
- Age - Younger
- Application
- Browser
- Code Location
- Country
- Datacenter
- Is Employee
- Friend Count - Less
- Friend Count - More
- Gatekeeper project ID
- Locale
- Network
- OS
- Remote IP
- Server IP
- Server Time - After
- Server Time - Before

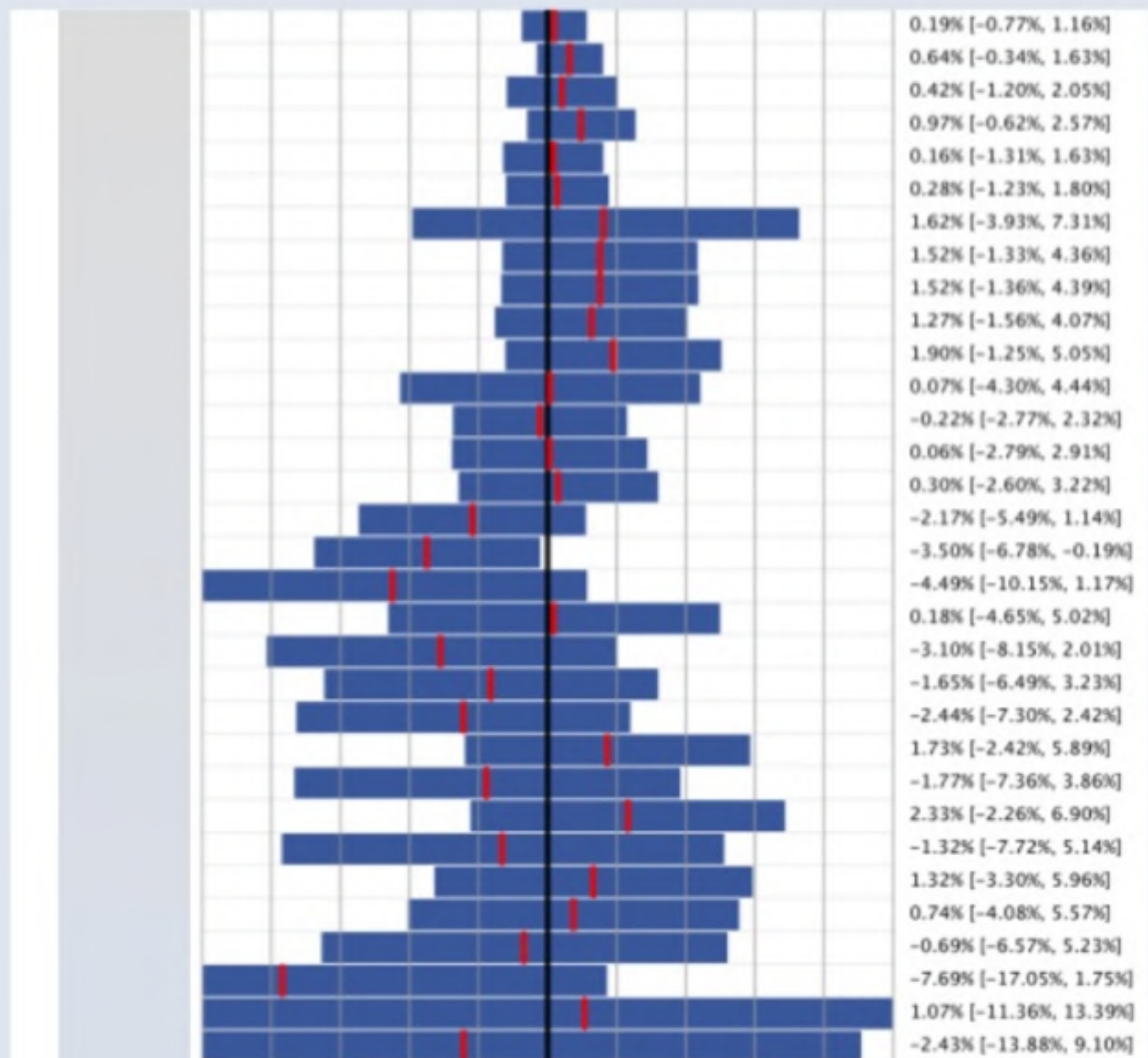
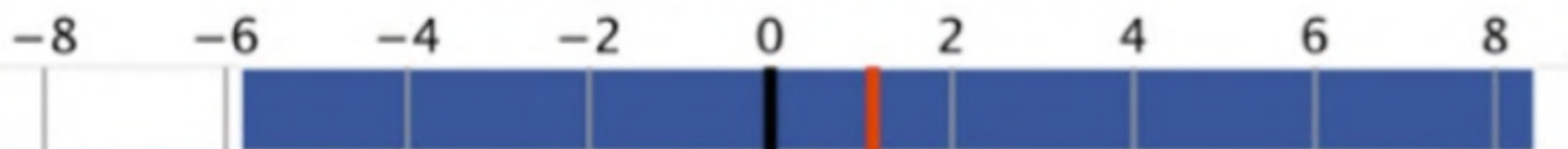
WHITELIST ME

BLACKLIST ME

On	
vvtxzdqrp	
Alpha	n/a
Alpha Def.	n/a
Updated	4/21/09 3:23:04pm
Console	none
Name	
Description	64 bit rollout
Needs Flush	No



% change from control to test



Flytrap (Map)

Map

New to Flytrap? Check out our Flytrap Dex

Dataset Version(?)

Simplified Advanced

Save FBUrl

Reset Done

View Settings Discuss

Start: -1 day

End: now

Compare: -1 week

Field:

Aggregate: Count

Country Column: Current Country

Color Scheme: Heatmap

Comparison Range: +/- 10%

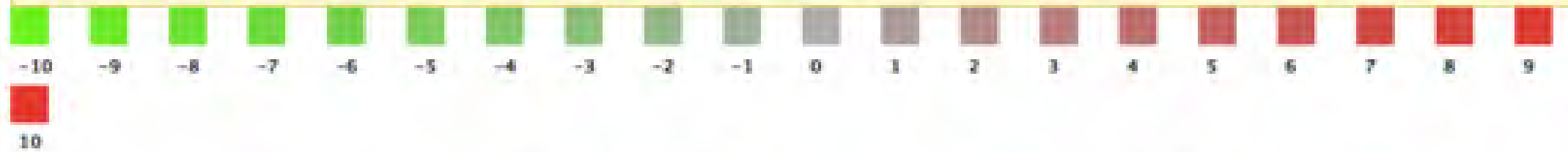
(This offers comparison mode)

Filters

Word Tokens all

photo n

Only 94.6% of all samples were processed. Sums and counts will be low.



Facebook Examples of Feedback Loops

1. Product development

2. Career growth and performance

Career Feedback

- Every 6 months, 360 degree feedback
 - Self review
 - Peer feedback
 - Manager review
- Feedback 'loops' both self selected, manager selected and ad-hoc
- Every 6 months, create a set of individual goals for the next half

Career Feedback

- Based on your direct experience working with Joel, describe the impact he had during the past half. Please share specific examples.
- Based on your direct experience, describe 1-2 areas that would help Joel have greater impact during the next half. Consider ways Joel can better align his work with his strengths (things he might enjoy and be great at), and areas where he can improve.

JOEL'S PEER FEEDBACK



David Alves' Feedback about Joel

Q3 2016 Performance Summary Cycle June 29, 2016 Shared with Joel

[Copy](#) | [Export](#)



Michelle Filiba's Feedback about Joel

Q3 2016 Performance Summary Cycle June 29, 2016 Shared with Joel

[Copy](#) | [Export](#)



Bryce Redd's Feedback about Joel

Q3 2016 Performance Summary Cycle June 28, 2016 Shared with Joel

[Copy](#) | [Export](#)



Marty Greenia's Feedback about Joel

Q3 2016 Performance Summary Cycle June 29, 2016 Shared with Joel

[Copy](#) | [Export](#)



Felix Wong's Feedback about Joel

Q3 2016 Performance Summary Cycle June 29, 2016 Shared with Joel

[Copy](#) | [Export](#)



Cyril Meurillon's Feedback about Joel

Q3 2016 Performance Summary Cycle June 29, 2016 Shared with Joel

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JOEL'S AD HOC FEEDBACK



Eryn Wade's Ad Hoc Feedback about Joel

Thanks / Ad Hoc Cycle January 14, 2016 Shared with Joel and David [Like](#)

[Copy](#) | [Export](#)



Ben Christensen's Ad Hoc Feedback about Joel

Thanks / Ad Hoc Cycle January 14, 2016 Shared with Joel and David [Like](#)

[Copy](#) | [Export](#)



Cooper Lees' Ad Hoc Feedback about Joel

Thanks / Ad Hoc Cycle January 12, 2016 Shared with Joel [Like](#)

[Copy](#) | [Export](#)



Peter O'Hearn's Ad Hoc Feedback about Joel

Thanks / Ad Hoc Cycle January 8, 2016 Shared with Joel and David [Like](#)

[Copy](#) | [Export](#)

Team Feedback

Manager

- How often does your manager show care for you?
- Would you work with your manager again in the future?
- How often does your manager hold you accountable for making an impact?
- How often does your manager give you clear, actionable feedback?



Dimension Average: Manager



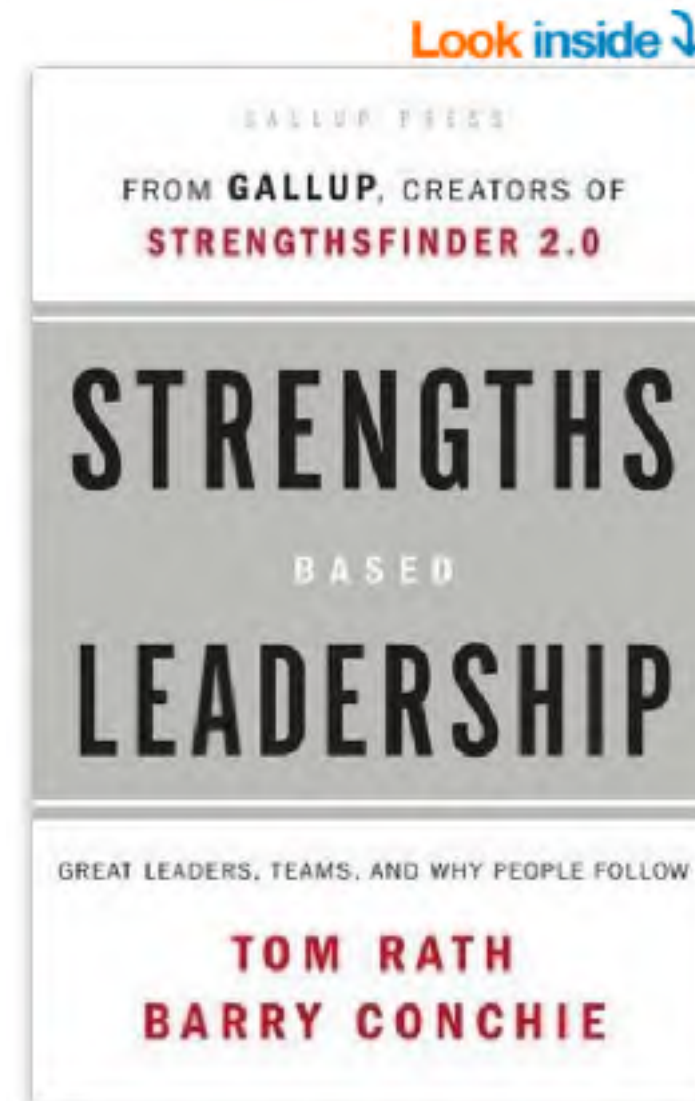
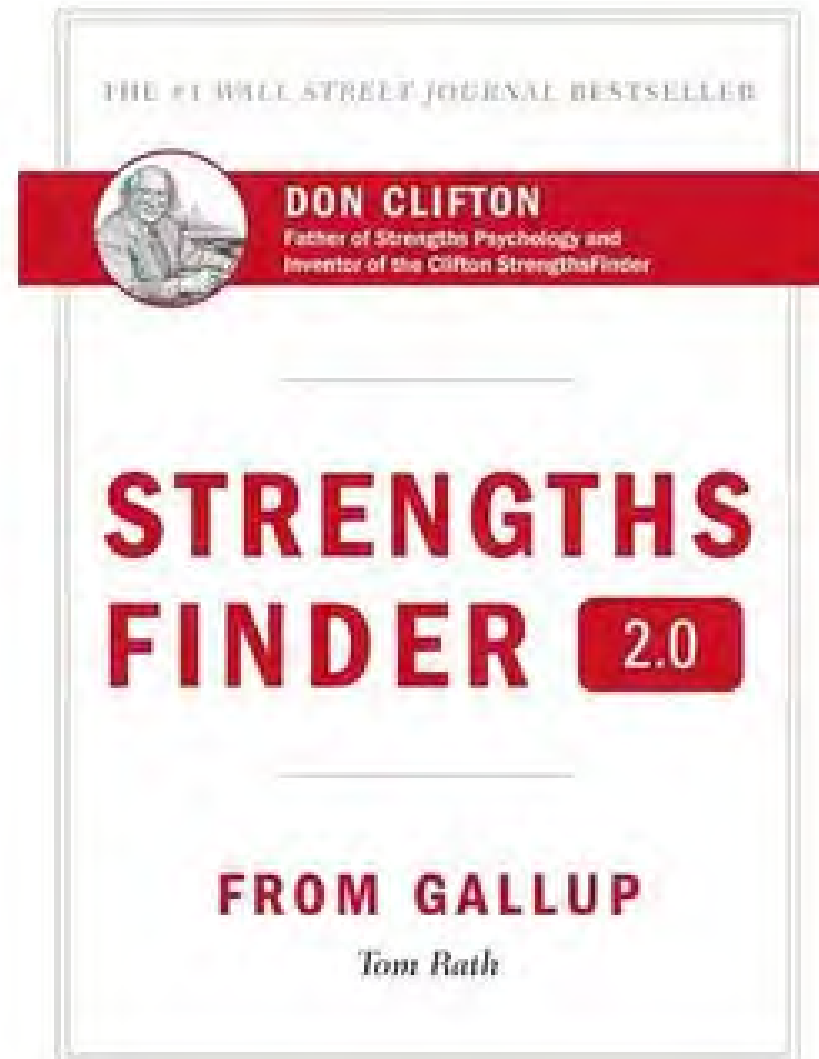
Communication

- How satisfied or dissatisfied are you with the recognition you receive?
- To what extent do you feel treated with respect at Facebook?
- How transparently do the leaders in your organization communicate?
- To what extent does your immediate team encourage diverse perspectives?
- How effective is the collaboration between your immediate team and other teams you need to work with at Facebook?



Dimension Average: Communication





Culture

Empathy

- Leaders are *listeners*
- Facebook as a tool encourages that
- Deep sense of trust
- Minimize differentiation (no offices)



A screenshot of a Facebook post by Jay Parikh, dated 11.15.13. The post is titled "Top Hits" and contains two main points: "Boston Office Launch" and "ML Summit". The "Boston Office Launch" section mentions the opening of the fifth engineering team in Boston and provides a link to details. The "ML Summit" section describes the success of the Machine Learning Summit, noting over 375 attendees and the importance of team collaboration. The post includes a "Continue Reading" link and interaction options like "Like", "Comment", and "Share". Below the post, there are two comments: one from Nam Nguyen asking about datacenter energy usage and another from Vince Van Son replying "Yes - 100%".

Jay Parikh 11.15.13 Top Hits

=> Boston Office Launch - Last week we officially opened our fifth engineering team in Boston. See details - <http://fburl.com/15227657>.

=> ML Summit - The Machine Learning Summit was held last week with great success (total turnout was just over 375 attendees). We had standing room only and many great conversations got started after the event between teams across the company. We couldn't have had this success without terrific help from Jennifer Santos, Briana Tabry, Kim Nicolau, Stuart Bowers & Jonathan Hoover. The videos will available this week on <http://vod.thefacebook.com> and we'll also post t...[Continue Reading](#)

Liked by Bryan O'Sullivan, James Paussa, Nam Nguyen and 68 others

Nam Nguyen on Altonna: what percentage of the datacenter's energy be served by wind? the whole 100%?
November 15 at 5:01pm · Like · 1

Vince Van Son Yes - 100%
November 15 at 5:03pm · Like · 11

Organizational

- Relentless focus on hiring (I'm doing at least 3-4 interviews a week)
- 4-5 engineers on the interview loop
- Look for empire builders, self-servers, whiners in the interview process, then don't hire them.
 - “Describe your responsibilities as a leader.”
 - “Can you tell me about four people whose careers you have fundamentally improved?”
 - “Describe a few of your peers at your company and what type of relationship you have with each of them.”
 - “What did you do on your very best day at work?”
 - “What does office politics mean to you, and do you see politics as your job?”
 - “Tell me about a project that you led that failed. Why did it fail and what did you learn?”

Organizational

- 6 week 'bootcamp'
- Self select to a team at the end of it
- Extreme mobility

Leadership

- People leave managers, not companies
- Managers held accountable:
 - Support and understanding for individual experience
 - Set clear goals/expectations for individual & team
 - Clear, actionable feedback on a timely basis
 - Provide resources, remove roadblocks
 - Hold people accountable
 - Recognize for outstanding impact

Leadership

- Manager + Tech Lead
 - Set the team composition and culture
 - Connect the team with context
 - Communicate intent "read your mind"
 - Move team through stages (forming, storming, norming, performing)
- Provide signal:
 - All feedback from everyone
 - pre/post mortem
- Relentless improvement and growth

Goals and Planning

- Mission oriented
- Goal focused:
 - 50% goals
- Horizon:
 - Goals: 6m
 - Outcomes: 1-2y
 - Vision: 2-5y+



Goals and Planning

- Context context context
- Brainstorm sessions + goal setting
 - "structure" the problems/context
 - find leverage points
 - avoid zone-of-indifference
 - build goals + their measurements
 - ... then alter the goals
- Measure measure measure

Thanks!

Joel Pobar
Engineering Director

Performance @ Facebook



让创新技术推动社会进步

HELP TO BUILD A BETTER SOCIETY WITH
INNOVATIVE TECHNOLOGIES

Geekbang >

极客邦科技

InfoQ_{ueue}

专注中高端技术人员的技术媒体



EGO EXTRA GEEKS' ORGANIZATION
NETWORKS

高端技术人员学习型社交平台



StuQ_{ueue}
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