Scott Prugh, Senior Vice President, Software Engineering
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MORE CULTURE MORE ENGINEERING LESS DUCT-TAPE V3.0

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2018

CSG: Who Are We?

csg

Industry Leading, Innovative, Configurable Business Support Solutions

REVENUE MANAGEMENT	**CONTENT** MONETIZATION	**CUSTOMER** COMMUNICATION MANAGEMENT	**MANAGED** SERVICES	**ASCENDON** NEXT GEN PLATFORM

3,300 EMPLOYEES
Around the Globe

35+ YEARS
Supporting the World's most respected CSPs

COMCAST Charter™ dish NETWORK Mediacom
verizon CenturyLink® COX COMMUNICATIONS EASTLINK

CSG in North America
SaaS Based Customer Care and Billing

- ~61M Subscribers
- 150k Call Center Seats
- ~6B External Transactions/month
- 40 Dev. Teams & 1000 Practitioners
- ACP: ~20 Technology Stacks: JS to HLASM
  - Integrated Suite of 50+ applications

Challenges: Time to Market, Quality: Software & Operations

More Culture, More Engineering, Less Duct-tape

2014

Pressures & Constraints
Demand for Quality & Speed
SoRs being pressured to become SoEs
Org & Process Debt, Technical Debt
YouTube: f4et0EGvKXA

2015

Strive for Unimodal IT
Invest in:
Culture, Empathy, Understanding,
Simplicity & Automation
YouTube: tKdIHCL0DUg

2016

Accelerate Feedback & Learning
Understanding
Accountability
Engineering
YouTube: 6afD-sQm03E

2017-18

Spread Culture, Invest in Engineering, Shift Ops Left
1. "Bi-Modal IT"
2. DevOps Journey: Business and Culture Metrics
3. Service Owner Model
   - SDLC/ITIL, Change, Incident
4. Team Spotlight
5. Targeted DevOps Culture Focus(DevOps Leadership Series)

DevOps Team

My Definition of Bimodal IT

Mode1: Servers are destroyed in the parking lot with a sledgehammer

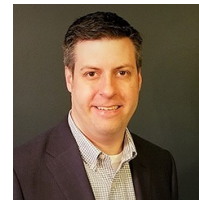**Mode2**: Servers and apps are run safely with speed and quality

Apps and servers are updated safely and quickly with features and operational concerns. Tech-debt is actively managed. Be waiver free.

DevOps: Be Fast, Stable, Secure

CHEFCONF2018

1. Go Fast and Deliver Value
2. Be Stable and Cost Less
3. Be Secure
You can have all three!!

CHEF
RUNDECK
INSPEC BY CHEF
Terraform

Bid Farewell to "Compliance Theater" and Welcome Continuous Compliance
-Carter McHugh

20k hours reduced by 80%!

"With Chef Compliance, CSG was able to demonstrate compliance of our configuration standards across our server population. This saved countless hours of manual compliance checks for our PCI QSAs and far better assurance than sample set checking."
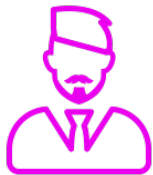*Doran Stienike, CISO*

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DevOps Journey in Metrics

	Begin	End	Change	
Rel. Impact	507	85	-83%	Agile: 2012-2016
Inc./mo.	1640	~~633~~ 427	~~-61%~~ -74%	DevOps: 2016-*
Subscribers	48.9M	61.4M	26%	Agile + DevOps 2012-2018
TPS	750	4000	433%	

How are you involving <u>all</u> your people?

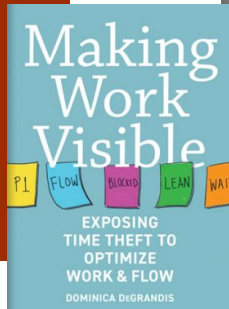HR   Sales   Helpdesk   Finance   Prod. Mgt.   Security   Engineering: Dev + Ops

"Our DevOps transformation and closer working relationship enables us to react quickly to client demands which leads to improved customer experience. "
Brian Clark, ED, Product Management

One Team: Making Work Visible

Service Owner(SO) Model

The SO is the single Transformational Leader accountable for the E2E construction, operation, SLAs, CXP and stewardship of business value for a product or set of services.

Dimension	Waterfall	Agile	DevOps/Service Owners
Team & People Shape	I-Shaped	t-Shaped	T-Shaped
Optimization/Efficiency	Resource	Flow(Turbulent)	Flow & Knowledge & Code
Process	Role Specific	SAFe vs. ITIL	SAFe & ITIL
Leadership Structure	Role Specific	Dev vs. Ops	DevOps/Service Ownership Transformational
Work Management	Tool Silos Doc Handoffs Queues	Tool Silos SDLC Team Collaboration Queues	Unified Backlog E2E Team Collaboration Automation/Self Service

More SO Responsibilities: SLAs, Monitoring, Performance, People Operations, Standards, Tech Debt, Incident Response, Security
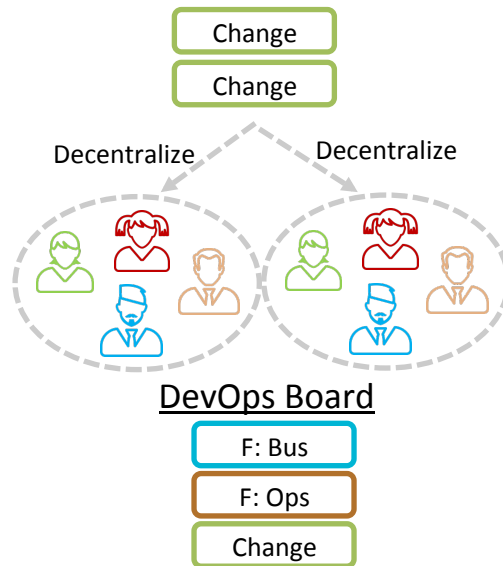
Service Owner Model: Change

Traditional Change Advisory Model ❌

Centralized Change Advisory/Approval

- *Puts approval furthest from knowledge*
- *Removes accountability from responsibility*
- *Increases batch sizes and lead times*
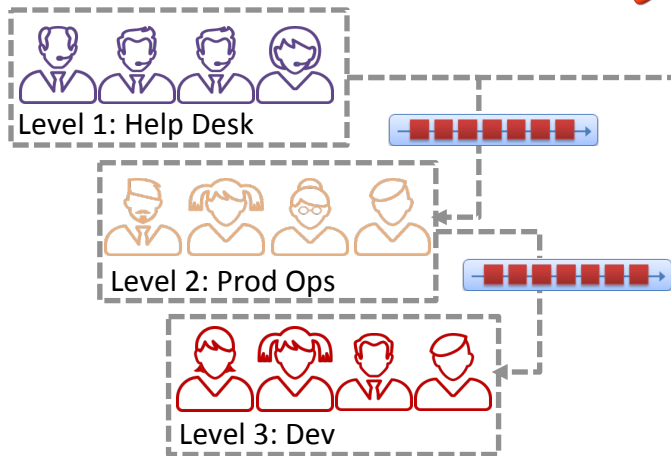- *Increases risk around change failure*

Decentralized Change Model ✅

Change

Change

Decentralize   Decentralize

DevOps Board

F: Bus

F: Ops

Change

"Changes are features with low variability."

"How are you making the system safer for change?"

Service Owner Model: Support

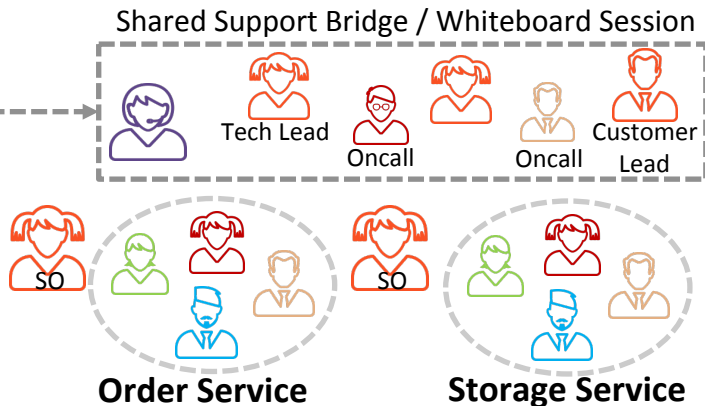## Standard 3 Tier Support Model ❌

Level 1: Help Desk

Level 2: Prod Ops

Level 3: Dev

Tiered Support Model Disadvantages

- *Creates queues which*
  - *Elongate TTR*
  - *Prevent the sharing of knowledge*
- *Issue resolution furthest from the knowledge*

Major Incident Swarm Model ✅

Shared Support Bridge / Whiteboard Session

Tech Lead

Oncall

Oncall

Customer Lead

SO

SO

Order Service

Storage Service

Swarm Model Advantages

- *All parties with proper expertise swarm*
- *Removes queues and handoffs*
- *Reduces TTR/maximizes knowledge sharing*
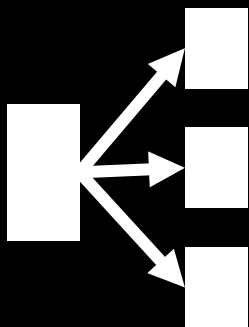- *"Swarm and solve problems / create new knowledge"*

Success Is a Journey….
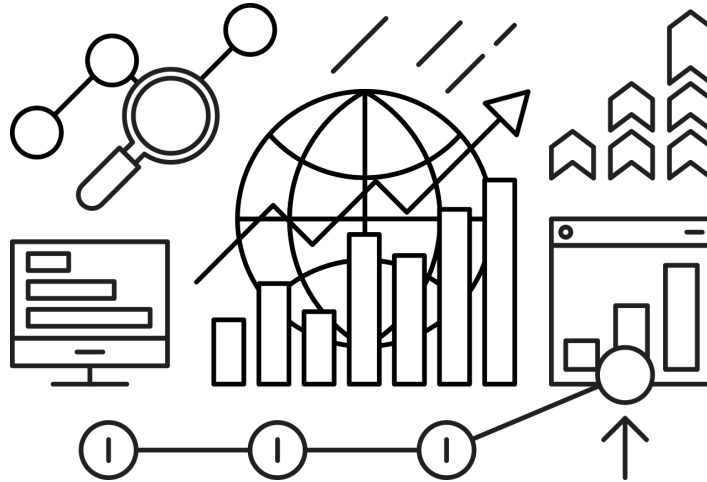
Successes will bring unexpected challenges

Not a straight-line journey

Team Spotlight

Load balancer

- Expanding infrastructure as code
- Created synthetics
- Introduced release cadence (small batches)
- Evolving towards self-service

Team Spotlight

Monitoring & Alerting

Added and separated infrastructure and software

Improved fault tolerance between components

Tuned third-party components

Improved visibility around system usage

Migrated to public cloud using infrastructure as code

Targeted DevOps Culture Focus

"Act your way to new thinking."
David Marquet

> **Vision**
> *1x1 Feature Flow; 100% Value Add*
> *Employee & Customer Delight*
> *Security & Safety for People and Customers*

- Set the vision
- Provide a forum for discussion
- Provide venue for success stories
- Introduce DevOps Leadership Series
- Expanded DevOps Community of Practice
- Hold book clubs
- Participate in local DevOps community

Summary & Future Direction

Recap

- "Bi-Modal IT" & Fast, Stable, Secure
- DevOps Journey: Business and Culture Metrics
- Service Owner Model
- Team Spotlight
- Targeted DevOps Culture Focus

Future Direction/ Help We Are Looking For

- Public and private cloud transformations
- Work/life balance initiative
- Security and compliance

Spread Culture, Invest in Engineering, Shift Ops Left

THANK YOU

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TOGETHER, YOU WIN.