



TOGETHER, YOU WIN.

PRODUCT MANAGEMENT MEETS DEVOPS

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CSG: WHO ARE WE?

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



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CSG in North America

SaaS Based Customer Care and Billing

- ~62M 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

— RECAP(2012): AGILE TRANSFORMATION

	Begin	End	Change	
Rel. Impact	507	85	-83%	Agile: 2012-2016

Agile Transformation: 2012-2016

Lean Thinking: Remove Queues

Inverse Taylor / Conway Maneuvers

Cross Functional Teams: Design, Build, Test

Continuous Integration, Continuous Deployment Pipeline

Test Automation

Shared Telemetry

Batch Size Reduction

Shared Operations Teams

— RECAP(2012-2015): AGILE TRANSFORMATION AND EARLY DEVOPS



**Operations Engineers watching over 15.1 deployment
71 features released to 50M subscribers**

— RECAP(2016): OPPOSING FORCES



— RECAP(2016): DEVOPS → LET'S COMPETE ON THE SAME TEAM

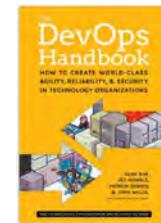
Let's be fast, stable and secure!

Let's compete on the same team! Let's be fast, stable and secure!

Let's compete on the same team!



— RECAP(2016-2018): POST DEVOPS



	Begin	End	Change	
Rel. Impact	507	85	-83%	Agile: 2012-2016
Inc./mo.	1640	427	-74%	DevOps: 2016-*



Ops is Really Hard

DevOps Transformation: 2016-2018

Unimodal IT

Build and Run Teams & Service Ownership

Localized CAB

Support Swarming

Inverse Brent Maneuver

Consolidated Backlog

Infrastructure Automation

Operations is an Engineering Problem: More Engineering, Less Duct-Tape



— RECAP: DEVOPS JOURNEY IN METRICS

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Inc./mo.	1640	427	-74%	DevOps: 2016-*
Subscribers	48.9M	62M	27%	Agile + DevOps 2012-2018
TPS	750	4,000	433%	

Stability and Growth Enabled via Agile/Lean/DevOps

— PRODUCT MGT MEETS DEVOPS: KEY THEMES

Connect people your to strategy

Improve Product Management and DevOps relationship
→ Better outcomes

IT cannot be separate from the business:
manage **Product Value Streams** not ~~Projects~~

Operations is an **Engineering** and **Product** problem

Impact Minutes	22,932	9,481*	-58%	2017-* Lean Portfolio Leadership PM Meets DevOps
Release On Demand	<5%	28%	460%	
eNPS	4	20	400%	

— THE VALUE OF PRODUCT MGT MEETS DEVOPS

The Market

Our core business is Cable/DBS BSS

We own 60%+ of the market

Cable Operators are struggling to grow

Our industry is growing at ~2% CAGR

Challenge to keep technical talent

CSG Results

CSG BSS CAGR 3.92%

Added two new BBS clients

eNPS increased by 400%(4→20)

Retention is > 95%

Positioned for market share increase



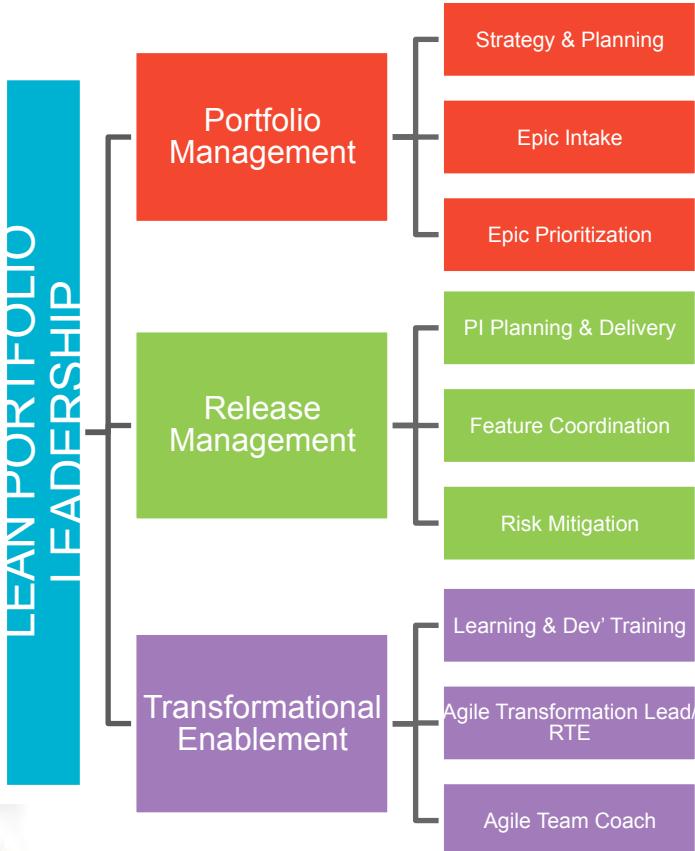


Organizational Vision Statement

Making Our Work Visible
So We Connect Our People to Our Strategy
Driving Engagement, Value & Excitement



**LEAN PORTFOLIO
LEADERSHIP TEAM**



LEAN PORTFOLIO LEADERSHIP TEAM



— LEAN PORTFOLIO LEADERSHIP

2016 → 2017 → 2018 → 2019

1

SERVICE REQUEST
MANAGEMENT



Work that improves
the operability,
stability or cost
profile of a service

53k+

service requests
generated

75k+

site visits

620

services
catalogued

**Exponential
Growth**

increase in
work visible
in a single
location



1

VALUE
LOGS

1 Epic Team *(Embodying Lean-Agile Principles and Walking the Walk)*



— LEAN PORTFOLIO LEADERSHIP

2016 → 2017 → 2018 → 2019

1

SERVICE REQUEST
MANAGEMENT



2

MAKE WORK
VISIBLE



Work that improves
the operability,
stability or cost
profile of a service





LEAN PORTFOLIO LEADERSHIP

2016 → 2017 → 2018 → 2019

1

SERVICE REQUEST
MANAGEMENT



Work that improves
the operability,
stability or cost
profile of a service

2

MAKE WORK
VISIBLE



3

CONNECT THE
STRATEGY TO
THE PEOPLE



LEAN PORTFOLIO LEADERSHIP TEAM **TANKS**

noun
collaboration forums that bring together good people (i.e. wicked smart, fiercely driven, and all-around awesome) to break down barriers and solve complex business problems...while having a little fun along the way.



Connecting the Business to the Strategy

Senior Leadership Forum

[Learn More](#)

THINKTANK

Strengthening the Partnership and Flow of Information

Lean Portfolio Leadership, Product Management, PMO, Product Owners

[Learn More](#)

DOTANK

For those who DO, to get the job DONE

Lean Portfolio Leadership, Scrum Masters, Product Management

[Learn More](#)



Delivering Value and Delighting Our Customers

CBU's, CES, Lean Portfolio Leadership

[Learn More](#)



Setting the Vision and Aligning Product Strategy

ACP, CCM, WFX, and Payment MGR Product Management

[Learn More](#)



Strategic Sales and Solution Forum

Product Management, CBU Leadership, PSG

[Learn More](#)

— LEAN PORTFOLIO LEADERSHIP

2016 → 2017 → 2018 → 2019

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SERVICE REQUEST
MANAGEMENT



Work that improves
the operability,
stability or cost
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2

MAKE WORK
VISIBLE



3

CONNECT THE
STRATEGY TO
THE PEOPLE



THINKTANK
DO TANK
BIZ TANK

4

DELIVERING &
DRIVING VALUE



18.3 VALUE DELIVERED

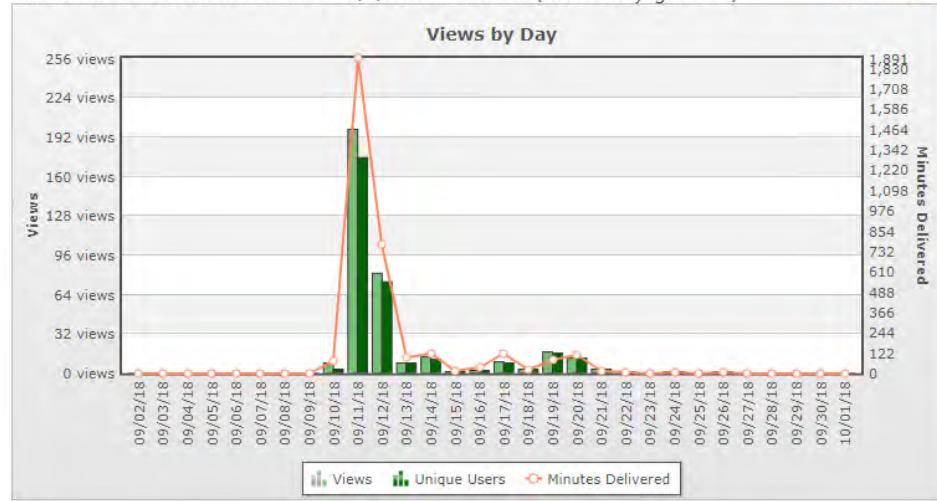


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Minutes delivered data current as of: 10/1/2018 2:48:31 PM (Eastern Daylight Time)

Download



PRODUCT RELEASE SHOWCASE

18.3 VALUE DELIVERED



Watch [this edition of Showcase On Demand](#) to learn the value provided in the upcoming 18.3 release as the result of the efforts of Engineering, Product Management, the CBUs, and the SSUs. Teams successfully partnered to improve the customer experience, expand the capabilities of our products, and solve incredibly complex problems for our customers, while continuing to achieve our corporate objectives.

WIN A \$50 AMAZON GIFT CARD



This may be the easiest contest you enter this year. Watch the entire video by Friday, September 14th to be entered into a drawing for a \$50 Amazon gift card. Our Panopto video tool provides a list of those who watched, so there is no additional action needed on your part. We will notify the winner next week!

All Release videos and slides can be found on the [Product Release Showcase page in UNCLE](#). We will be gathering in person for a live event for the 18.4 release, and we hope to see you there!

— LEAN PORTFOLIO LEADERSHIP

2016 → 2017 → 2018 → 2019

1

SERVICE REQUEST
MANAGEMENT



Work that improves
the operability,
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profile of a service

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MAKE WORK
VISIBLE



3

CONNECT THE
STRATEGY TO
THE PEOPLE



4

DELIVERING &
DRIVING VALUE



3 PORTFOLIOS | 3 EVENTS

AUGUST

15 CORE BILLING
16 CCM
17 ASCENDON

8AM MT



5

ACHIEVING
BALANCE





CAPACITY INSIGHTS



CAPACITY DATABASE

Teams enter PI level capacity using an ASAP form



REPORTING

Visual reports in PowerBI compare current allocations to targets



PI PLANNING

Insights will facilitate more stable planning and commitment

— VALUE STREAM AND TEAM LEVEL INSIGHTS



— LEAN PORTFOLIO LEADERSHIP

2016 → 2017 → 2018 → 2019

1

SERVICE REQUEST
MANAGEMENT



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MAKE WORK
VISIBLE



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CONNECT THE
STRATEGY TO
THE PEOPLE



4



3 PORTFOLIOS | 3 EVENTS

AUGUST

15 CORE BILLING
16 CCM
17 ASCENDON

8AM MT



5



6

WORK LIFE
BALANCE



Achieving Balance

Work that improves
the stability of our
most valued
resources, our
people.

201

8

PI GALLERY

Key Stats



- 15K Hours Invested
- 31 Teams
- 25% In Pages
- 100% Data Setup
- 90% Validation

THE SECRET SAUCE



— WHY USE PRODUCTS VS. PROJECTS(PVP)?

Characteristic	Project	Product
Organization	Matrixed Functional Silos Context Switching	Unified Team/Department Dedicated Focus
Lifecycle/Longevity	Build & Abandon Weeks-Months	Own: Design, Build, Run, Improve Roadmap Relevance
Success Measure	Scope, Budget, Schedule	Business Outcomes
Funding	Temporal Scope	Product Lifetime
Work Visibility	Project Completion	Construction + Ops Lifecycle

Queues & projects don't learn.
Product based teams do.

— EXAMPLE: PRODUCTS VS PROJECTS(PVP)

Business Epics

Epic-01

Epic-02

Epic-03

Order Dev

Billing Dev

Customer Dev

Dev: Product Work

Cadence based work release
Product backlog & prioritized
Engineered solutions

OrderOps

BillingOps

CustomerOps

PlatformOps(SA, DBA)

SecurityOps

Ops: Project Work

IT Projects

OS upgrade

PCI

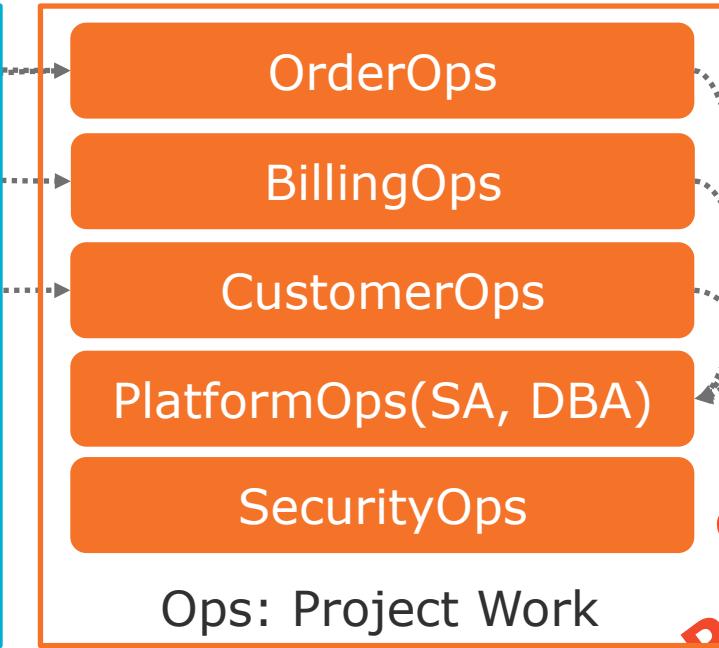
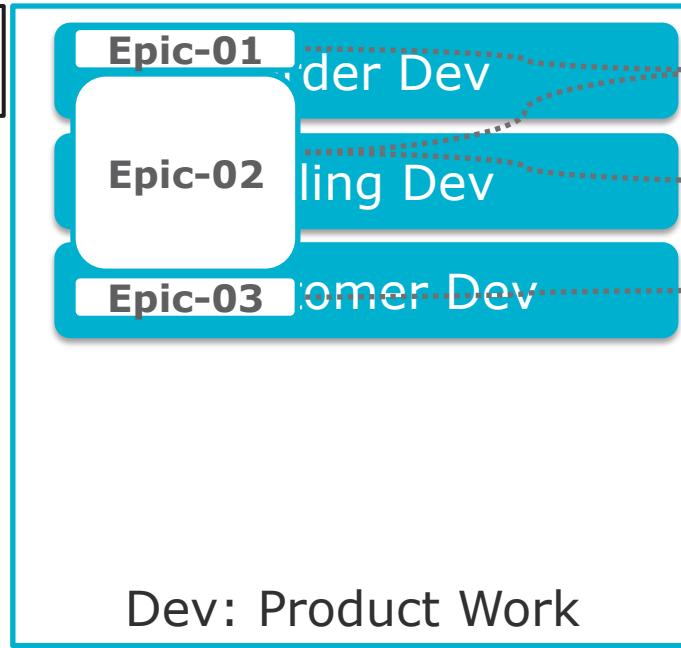
AD Migration

Pre-2017 CSG

— PVP & UNCOORDINATED WORK RELEASE



Business Epics



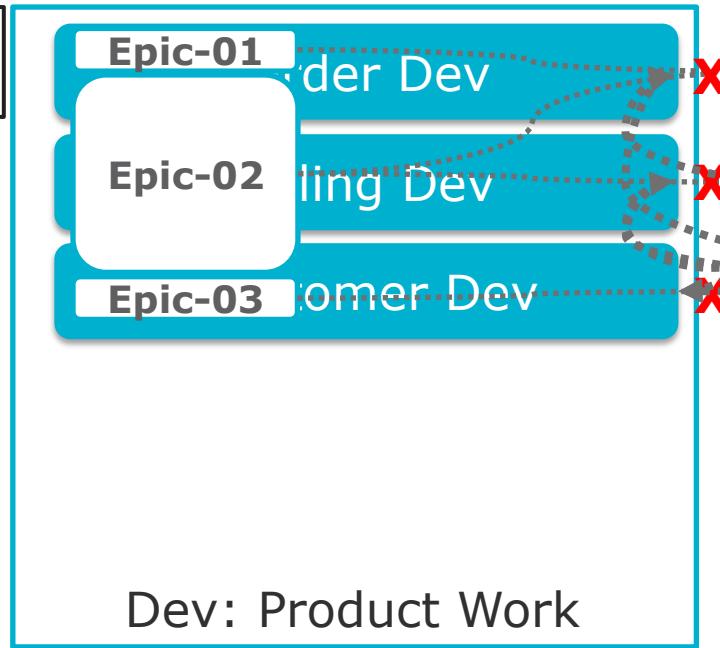
Pre-2017

Cadence based work consumes resources
and dependencies across Dev and Ops

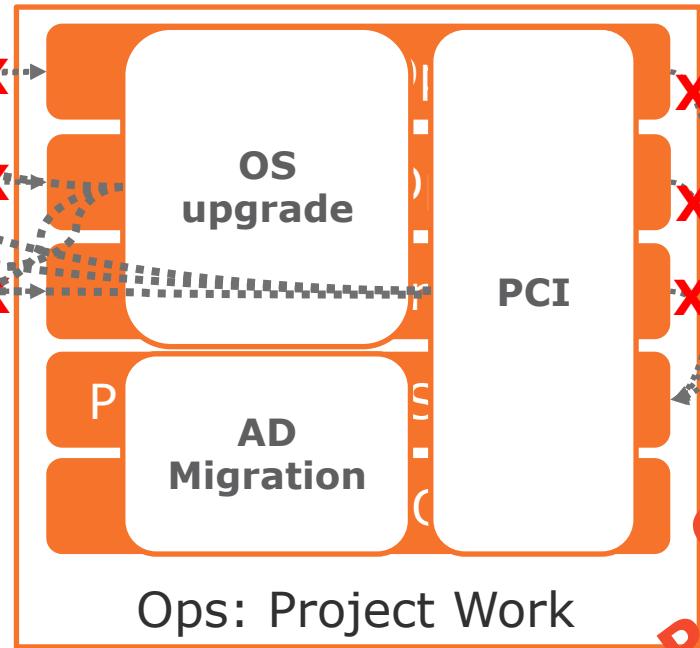
PVP & UNCOORDINATED WORK RELEASE



Business Epics



IT Projects



Pre-2017
CSG

Project based work conflicts with product based work: bi-directional dependencies
Multiple intake and planning processes allow work to collide
Lack of unified dependency and capacity view drives up WIP
Project based work can result in poorly engineered solutions

PVP: SINGLE INTAKE / MULTIPLE CADENCE / PRODUCT

All Epics **FOCUS**

Epic-01

Epic-02

Epic-03

OS
upgrade

AD
Migration

PCI

Cadence based plan
and work release

2w
4w
6w
12w

Feature release on
demand

Order DevOps

Billing DevOps

Customer DevOps

PlatformOps(SA, DBA)

SecurityOps

Product Work

Single work intake allows holistic prioritization → Make it all visible and prioritize
Manage work release via cadence: Vary on maturity, business need, coupling
Planning on cadence doesn't mean you can't release on demand!
Re-engineer via: Automation, Architecture & Operations as a Service Pattern

— PVP: REPRIORITIZATION

All Epics

Epic-01

Epic-03

OS upgrade

PCI

AD Migration

Epic-02



Cut line

**Cadence based plan
and work release**

2w
4w
6w
12w

**Feature release on
demand**

Order DevOps

Billing DevOps

Customer DevOps

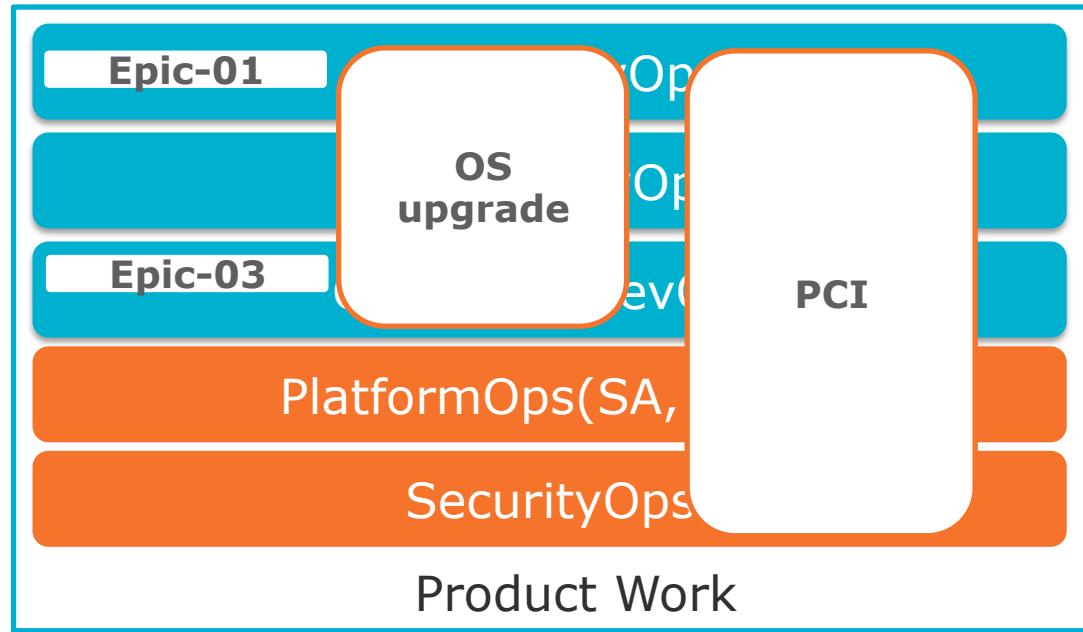
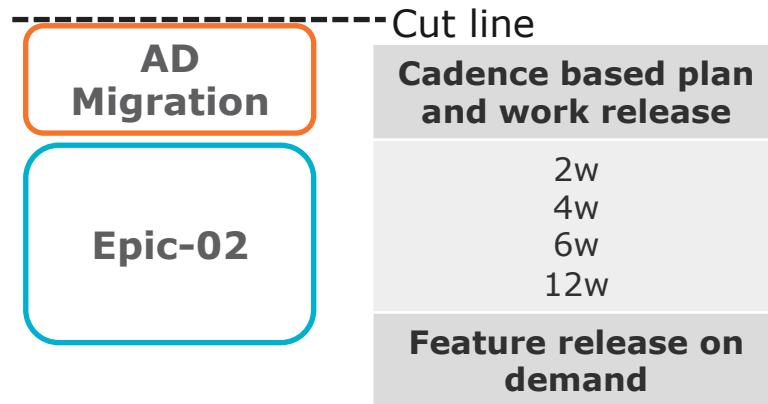
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SecurityOps

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— PVP: REPRIORITIZATION AND PREDICTABLE WORK RELEASE



Single work intake allows holistic prioritization → Make it all visible and prioritize
Manage work release via cadence: Vary on maturity, business need, coupling
Planning on cadence doesn't mean you can't release on demand!
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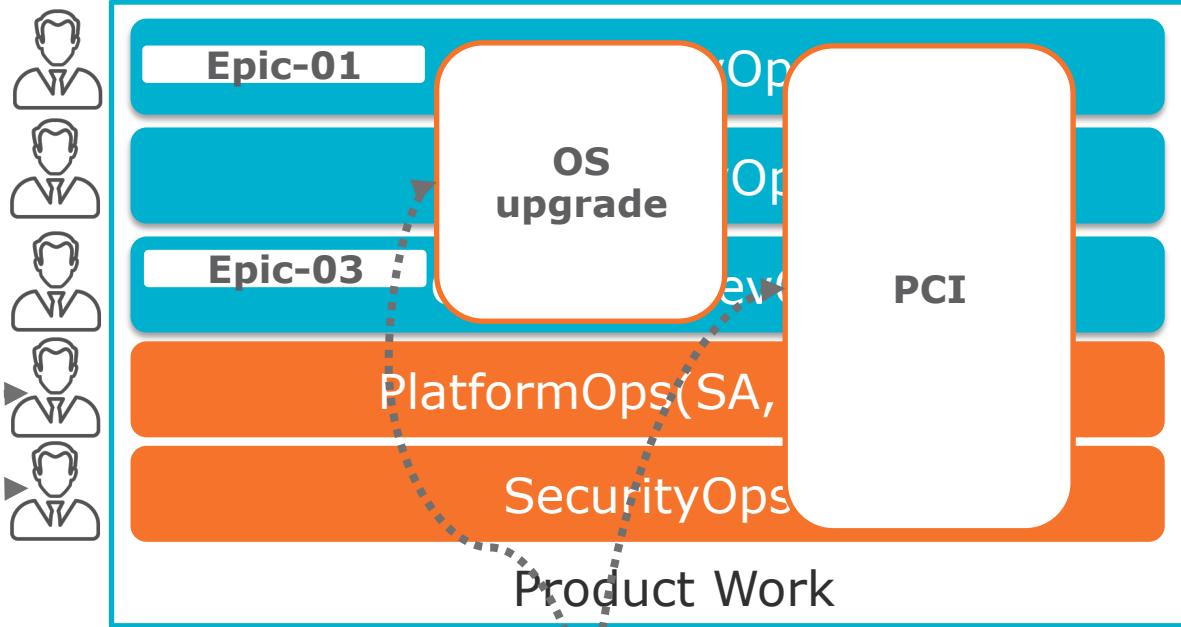
PVP: APPLY PRODUCT MANAGEMENT TO INTERNAL PLATFORMS

ThoughtWorks®

TECHNOLOGY RADAR

Applying product management to internal platforms

May 2018: Trial?



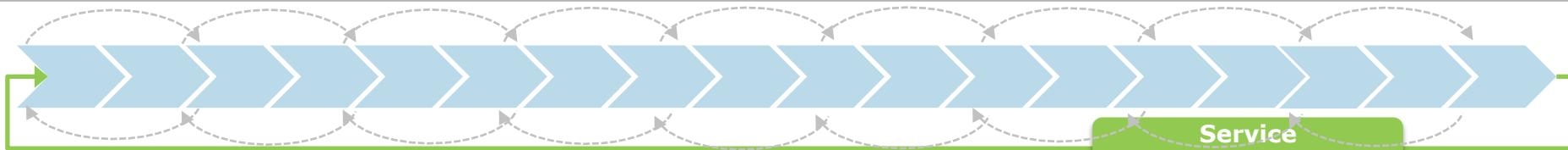
Treat everything like a Product: Dedicate PM expertise to Platform and Security Operations is an Engineering and Product problem: re-engineer to improve

— DESIGN & BUILD VS PRODUCT VALUE STREAM

MANAGEMENT



- 1-N cross functional DBTR teams(9+/-2)
- Strong cross functional leadership
- Sprint cadence and Kanban
- Single backlog for all activities
- Stewardship and Engineering Excellence: CI, CD, Everything is Code
- Measure: Deploy Freq, Lead Time for Change, MTTR, Change Failure Rate
- Swarm for Incident Response
- Operations is an Engineering and Product Problem: Concerns continually worked into backlog



Product/Service Value Stream Management

Design & Build

Test

Continuous Integration

Artifact & Release Management

Configuration Management(Infrastructure & App)

Service Request & Change

Telemetry, Monitoring & SLA Management

Security

Incident Response, Post Mortem & Problem

Run

— OPERATIONS IS AN ENGINEERING AND PRODUCT

PROBLEM

“The PCI audit project consumes large amounts of our resources on a recurring basis. How do we make this better for our teams and work on more features?”

In a perfect world....

Rebuild 3k servers to CIS hardening specs via ConfigMgt

Have auditors come back when we are done...

The reality....

PCI is an ongoing process

It is mandatory to continue processing cards

Auditors are not forgiving. Neither are the bad guys

Requirements...

Create and manage platform and application server build specifications

Must be intuitive and easy for large number of teams to use quickly

Must allow for continuous daily audit against specifications + notifications

Should support rollup and drill down reporting for management & audit

Supports an evolutionary based process

And we need it in time for the next audit...



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

— THE CSG SOLUTION - ACT



Asset Compliance Tracking Tool



CSG Open Sourcing ACT!!
<http://bit.ly/csg-act>

All source code
AWS: Docker, Beanstalk, Lambda
Aurora PostgreSQL Persistence
Integration hooks to external providers:
Asset Inventory, Chef



— BENEFITS OF TREATING OPERATIONS AS AN ENGINEERING PROBLEM

"With Chef Compliance, CSG was able to demonstrate compliance of our configuration standards for multiple OSes 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*

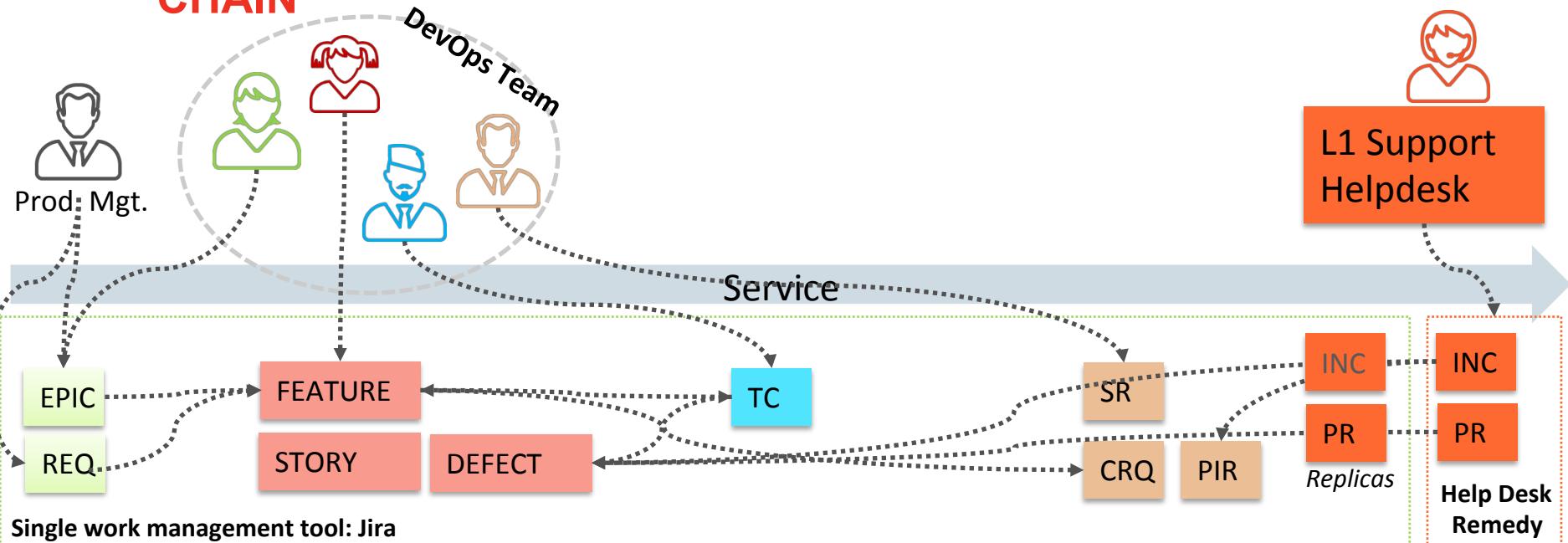
Before	After
Missing, incomplete, and incorrect build specs	All platform & application build specs defined in ACT database. Foundation for rapid Chef cookbook implementation and verification
Manual, infrequent or no automated compliance checks	All platform & application build specs continuously validated via Chef Audit cookbook running every 30 minutes.



20k hours across DevOps, Security and Audit

80% reduction in resource hours through Chef technology enablement allowing standardization of data and automation

— WORK MANAGEMENT VISIBILITY ACROSS THE VALUE-CHAIN



Invest to unify / link work management systems across the value chain

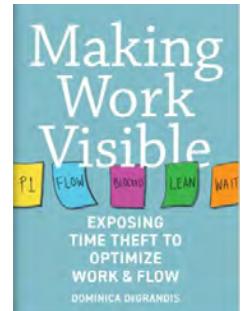
— SEE MORE: WORK MANAGEMENT VISIBILITY ACROSS THE AIN



Overcoming
Inefficiencies in
Multiple Work
Management Systems



<https://itrevolution.com/book/overcoming-inefficiencies-multiple-work-management-systems>



Thanks!

Dominica DeGrandis, Director Digital Transformation, Tasktop; @dominicad
Rosalind Radcliffe, Distinguished Engineer for DevOps for IBMz, IBM; @RosalindRad
Pat Birkeland, Business Analytics/Intelligence Competency Center Lead, Boeing
Keanen Wold, DevOps Transformation/DevOps CoE & Developer Practice Leader, Delta Airlines, @KeanenWol

— DEVOPS JOURNEY IN METRICS: WHAT NEXT?

	2017	2018	2019
Impact Minutes	22,932	9,481*	4,700?

50% YOY?

System Robustness
People Resilience

Releases? or >70%?

Architecture
Automation
Decoupling

Release On Demand	<5%	28%	50%?
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Lean Portfolio Leadership
Connecting Our People
Work Life Balance

eNPS	4	20	??
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Thanks: Community & Mentors



Mauricio Zamora



Ken Kennedy



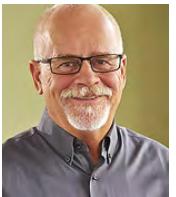
Steve Barr



Erica Morrison



CSG



Dean Leffingwell



Gene Kim



Damon Edwards



John Willis



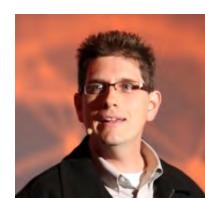
Dominica DeGrandis



Courtney Kissler



Ross Clanton



Jason Cox



Jeff Gallimore



Rosalind Radcliffe



Scott Nasello



Nicole Forsgren



Mik Kersten



IT Rev Staff

BONUS SUMMARY SLIDES

SUMMARY: KEY THEMES

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Improve Product Management and DevOps relationship

→ Better outcomes

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