



TASKTOP



Value Stream Architecture

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43

of the
Fortune
100



11

of the top 25
world banks



4

of the top 10
US insurers



6

of the top 6
health plans





#68 ON THE
FORTUNE
500 LIST



We are a strong mutual company built to serve our members.



Nationwide[®]
is on your side



NATIONWIDE ONE IT ORGANIZATION

200+

AGILE / LEAN
STANDING TEAMS

800+

BUILD PROJECTS
EXECUTED ANNUALLY

FIRST PHASE: AGILE DEVELOPMENT

NEXT PHASE: APPLICATION OF LEAN
ACROSS THE DELIVERY LIFE CYCLE

25%
ANNUAL INCREASE
IN NUMBER OF
AGILE TEAMS

75%
OF ALL PROJECT
WORK DONE BY
AGILE TEAMS



BALANCE
— OF —
INNOVATION
— AND —
DISCIPLINE

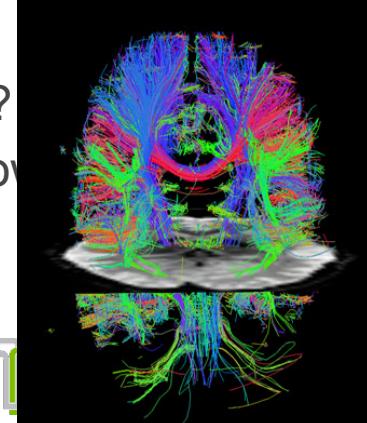
Overview

Problem

- Org charts and software architecture are the best representation of value creation we have. They are failing us and we know it.
- Software investment and staffing decisions are made anecdotally, using static and stale slivers of data.

What if we could take an fMRI of the organization?

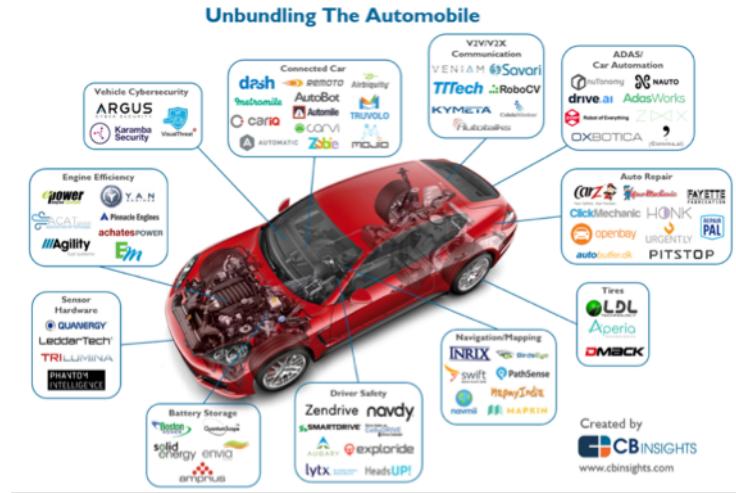
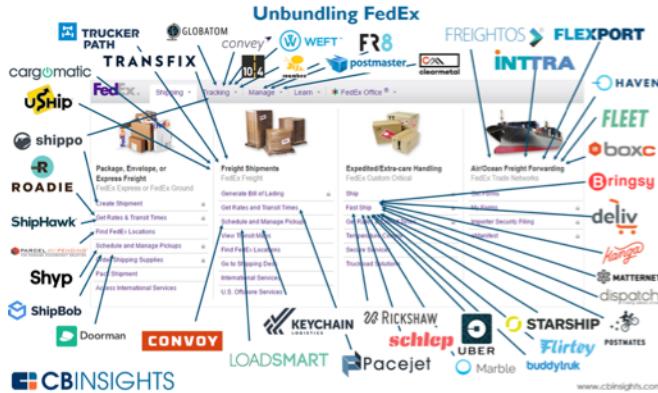
- What if we could see the flow of business value in real-time?
- See evidence of bottlenecks use them to prioritize IT investment?
- Re-architect our software and organization around maximizing flow
- Hypothesis test based on real-time data from every team?





What if we could take an fMRI of the organization?

Innovation & disruption



Unbundling of a Bank

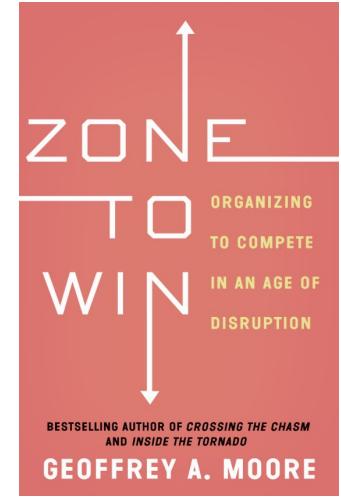


CB INSIGHTS

Types of disruption

Types of disruption

- Infrastructure model: product is now a connected car
- Operating model: Tesla's disruption of dealerships
- Business model: Autonomous fleets



What it means

- Software innovation will determine which organizations decline, which thrive
- We need to provide our organizations with an infrastructure for innovation

Easy for a startup

- Tech startups are engines for software innovation
- But things change at scale...

Fragmented Value Stream

Business Value



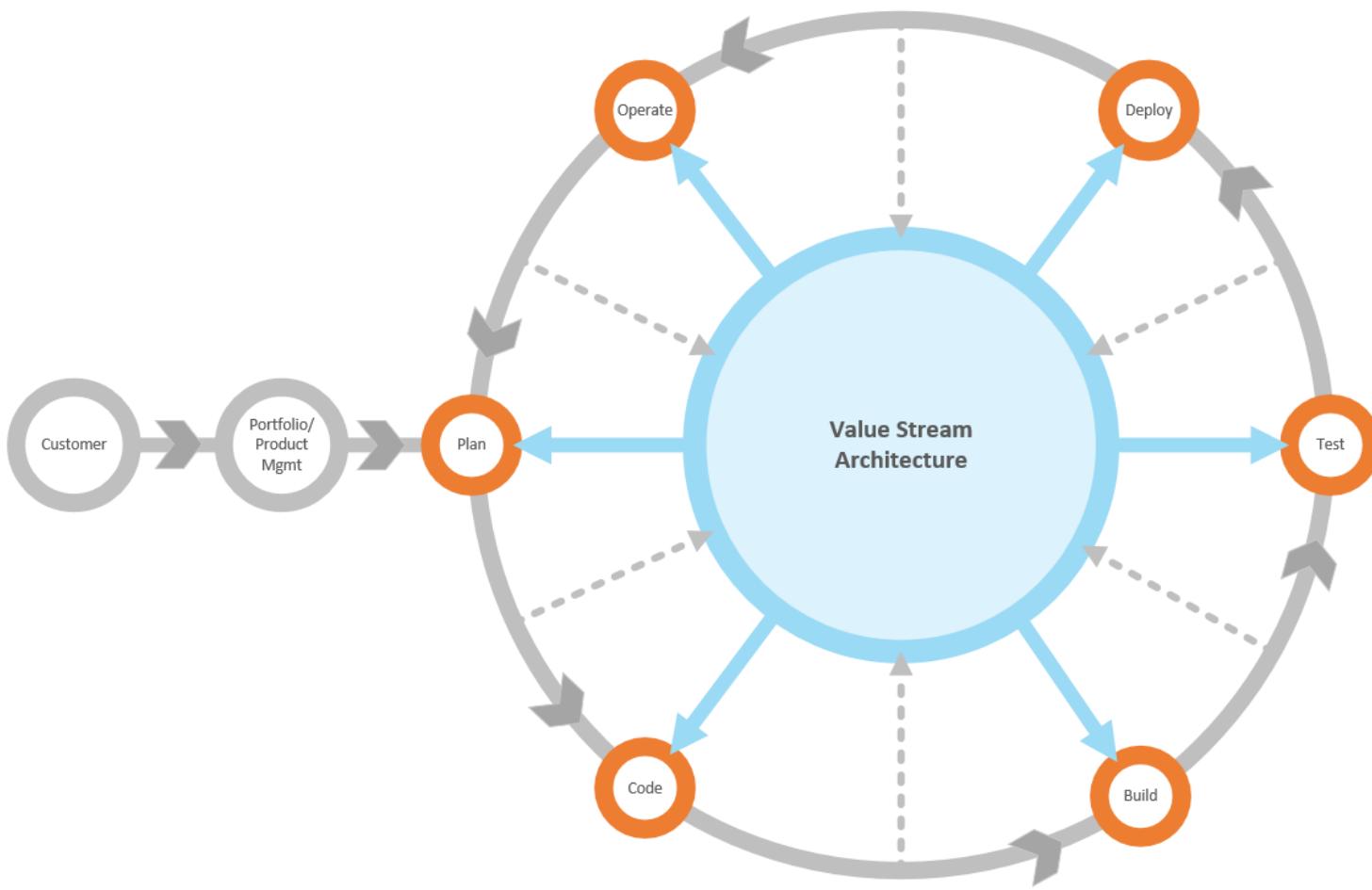
Revenue Results

Best-of-breed tool chain

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We need a new layer of infrastructure
for the software Value Stream



Framework

Value Stream Architecture

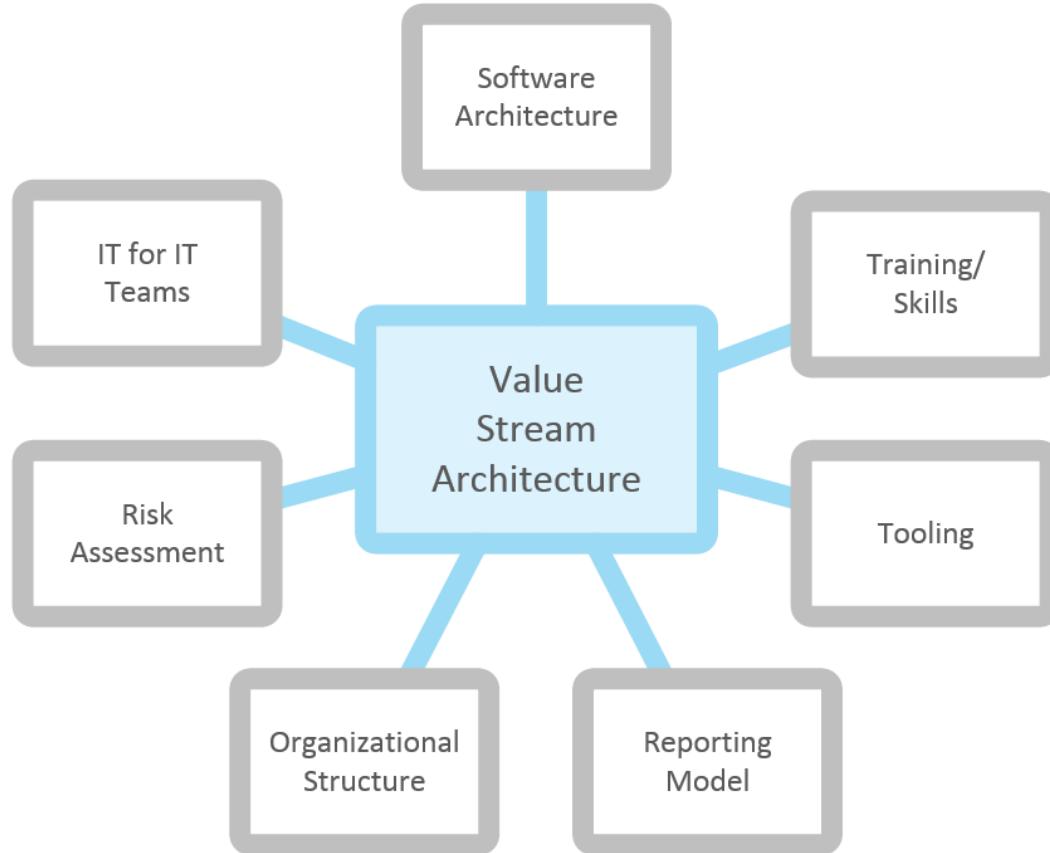
- Software architecture follows value stream, not vice versa (eg, APIs, Microservices added to minimize a team's wait times)
- Team structure follows value stream (eg, Spotify/squad embedding vs. functional orientation)
- Created and maintained by Value Stream Architect, “IT for IT team”

Value Stream Integration

- Every tool and process is connected for end-to-end flow
- Single standard tool chain, can be specialized for countries, LOBs, investment horizons
- The tool chain becomes modular, supports change and specialization

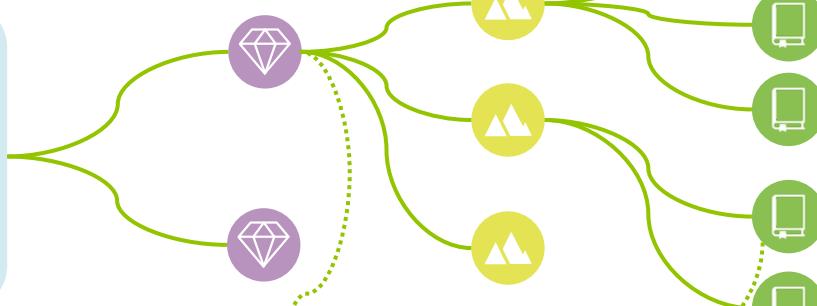
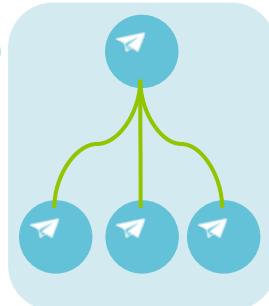
Value Stream Visibility

- Real-time view of all business value flows and bottlenecks
- Metrics are connected to business results
- Risk and compliance certification is built into the framework

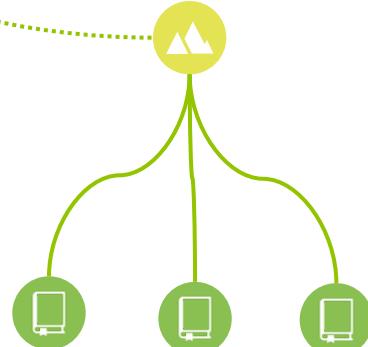




Feature Team



Architecture Team



Ops Team

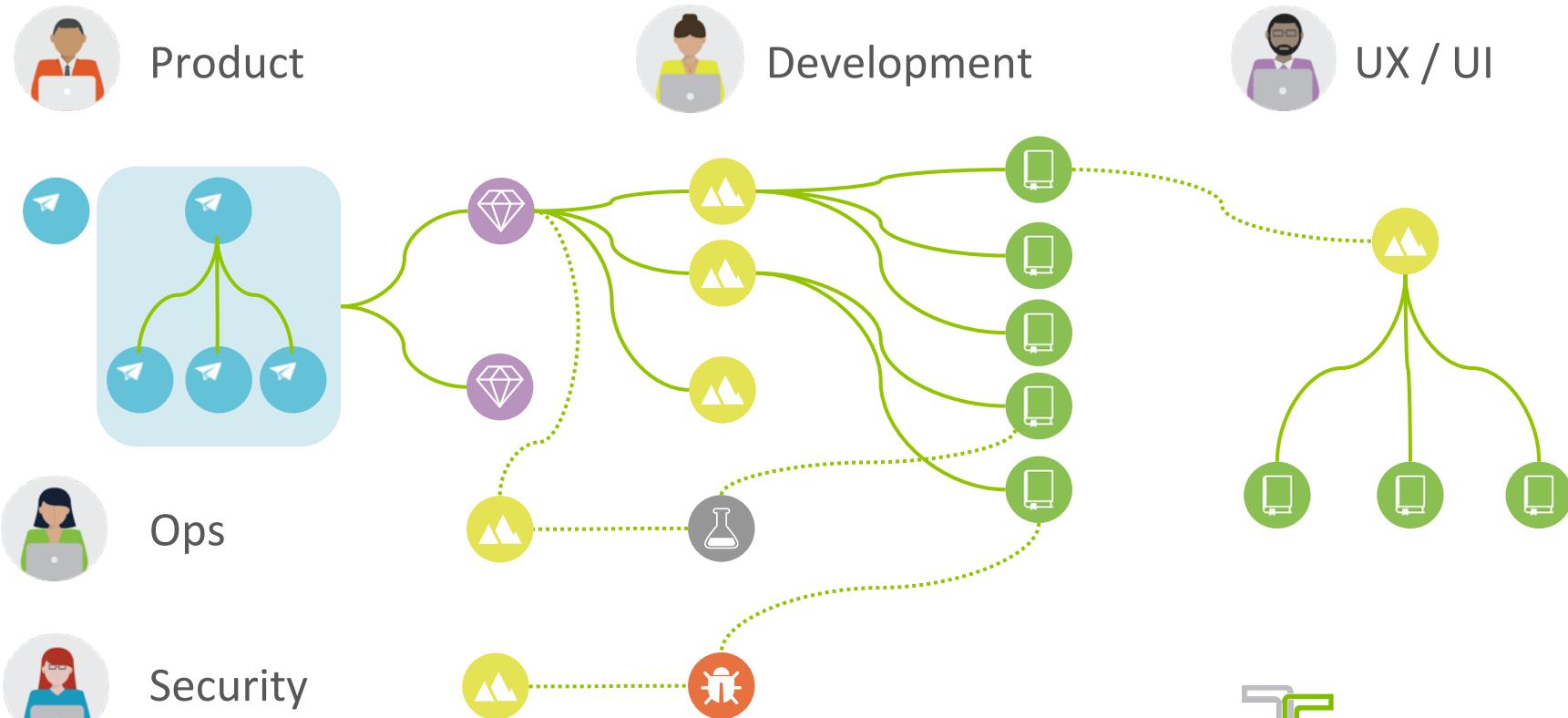


Security Team

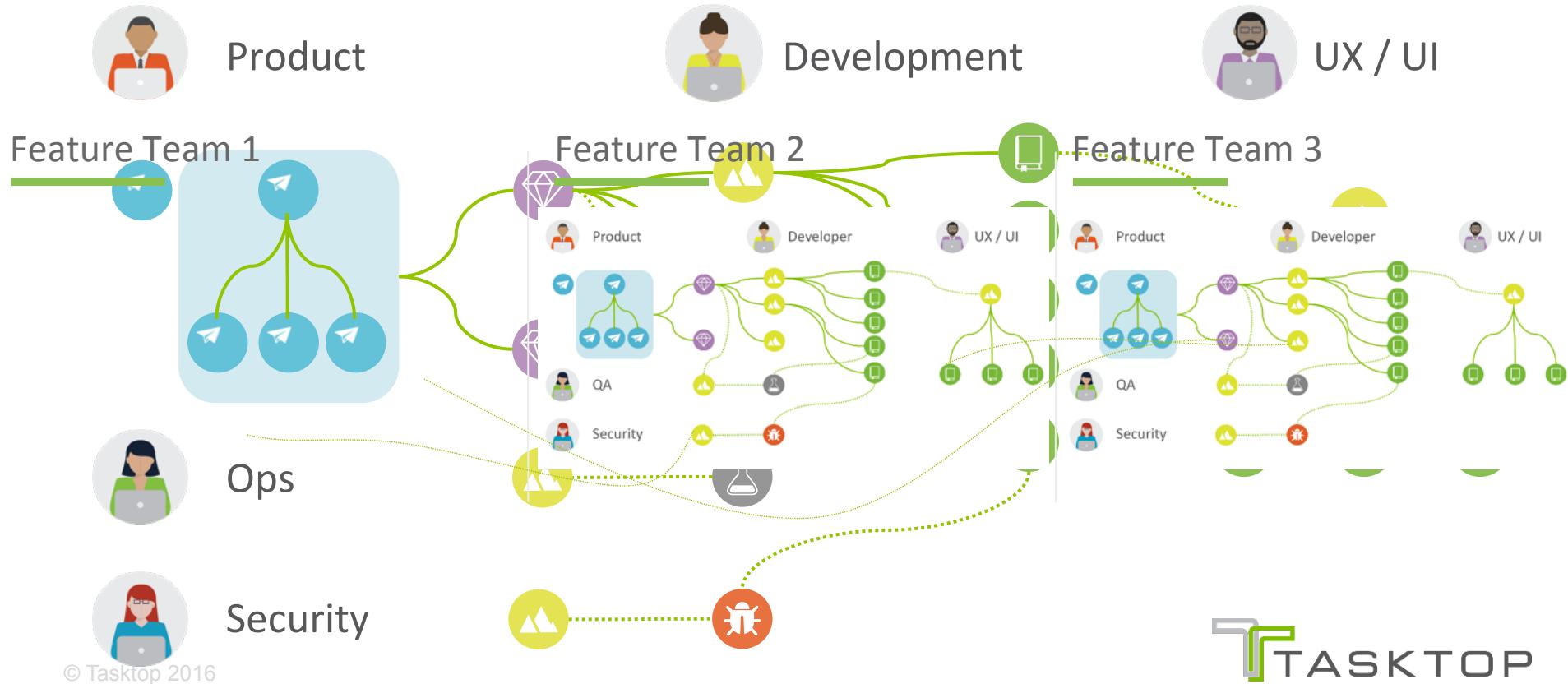


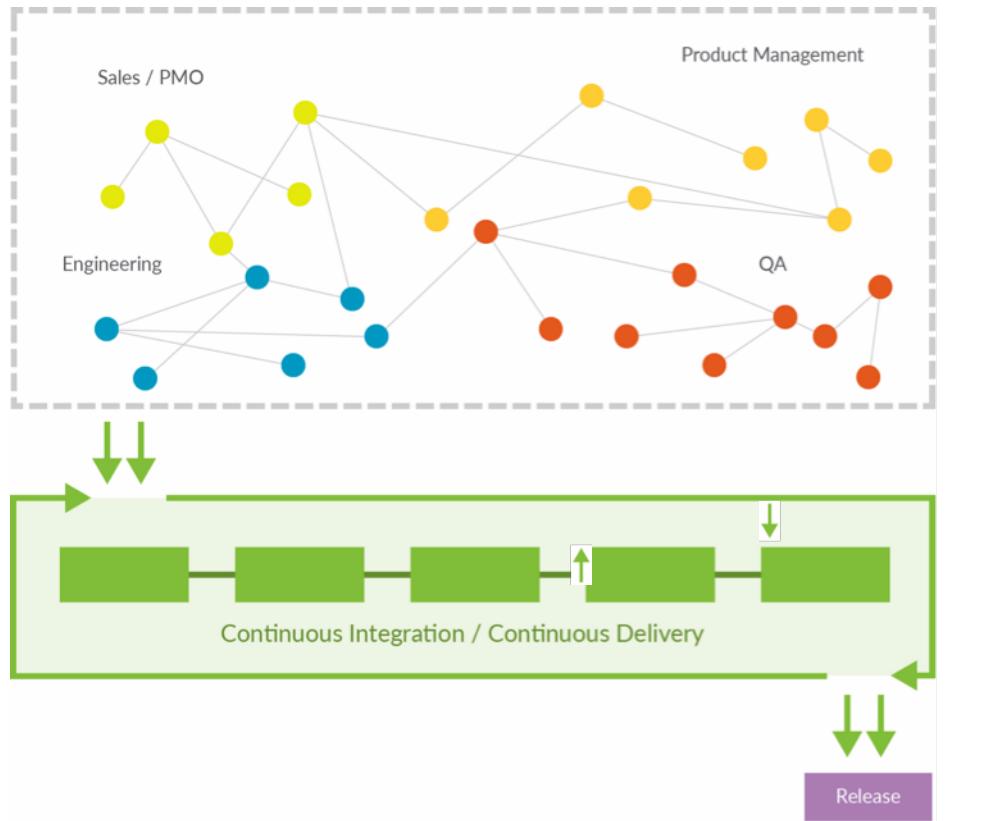
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Cross Functional Feature Team



Feature Teams

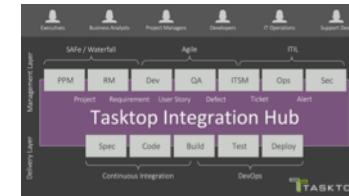
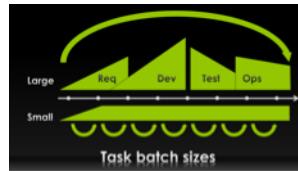
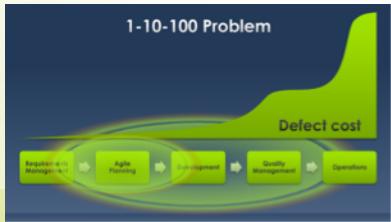




Not a linear manufacturing process

We need to think about software development differently

Linear and batch-oriented models are over-simplified and wrong



Agile 2011

SXSW 2012

ALM Forum 2015



Integration Landscape

View your organization's integration landscape to get an overview of artifact types flowing between your repositories via integrations.

Filter [Reset Filter](#)

Display Settings

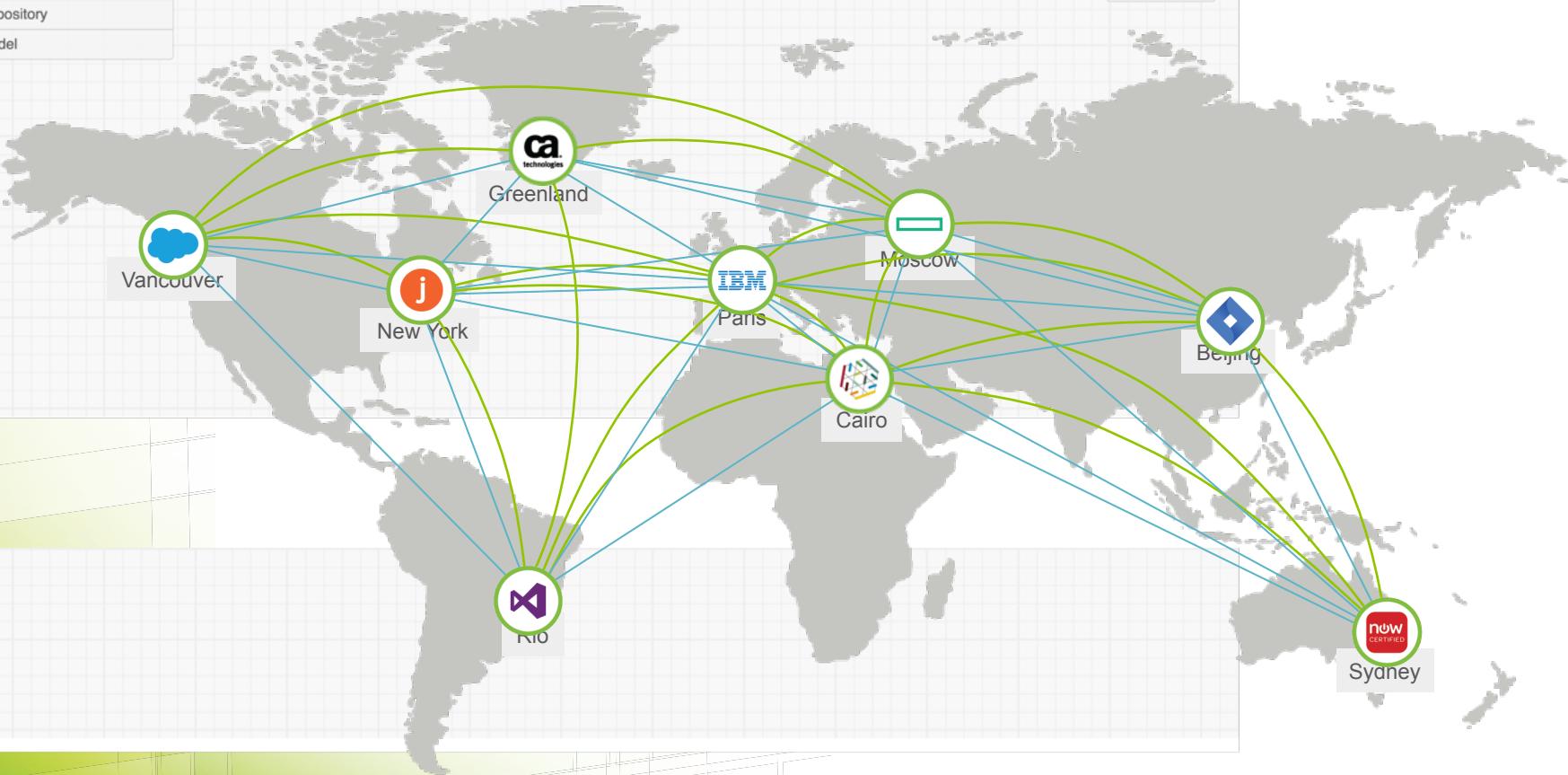
Show All Models

Show All Artifact Types

[Reset Layout](#)

[Repository](#)

[Model](#)



What flows in a software value stream?

Flow units

- Features added, defects fixed, vulnerabilities fixed

Optimizing for linear flow

- Optimize for repeatability
- Remove all creative and non-deterministic steps
- De-couple planning and design from production

This model doesn't work for software

- Waterfall and RUP were an attempt to make software linear
- Overly narrow DevOps transformations running into the same issue

Value Stream Architect

Creates visibility

- Designs and implements end-to-end flow, working with functional heads and LOB leaders
- Provides visualization of all value streams and identifies constraints
- Connects value stream metrics to business metrics
- Head or key part of IT for IT team

Influences

- Supports the DevOps transformation by driving change and future state of value stream
- Drives value stream improvement work across team backlogs

Mentors and trains

- Continually identify training and skill deficiency bottlenecks
- Work with IT leaders to close knowledge/skill gaps

Flow Units

Work Items	Aka	Pulled by	Description
Feature Story	Requirements, User Stories	User/Customers	New business value added to the application, visible to the customer
Defect Story	Bug	User/Customers	Fixes for quality problems that affect customer experience
Security Story	Vulnerability	Security Officers/ Auditors	Fixes for weaknesses, flaws and vectors for exploits
Tech Debt Story		Software Architects, Teams	Improvement to the software architecture, invisible to the customer
Value Stream Story		Value Stream Architects	Improvement to the value stream architecture, invisible to the customer

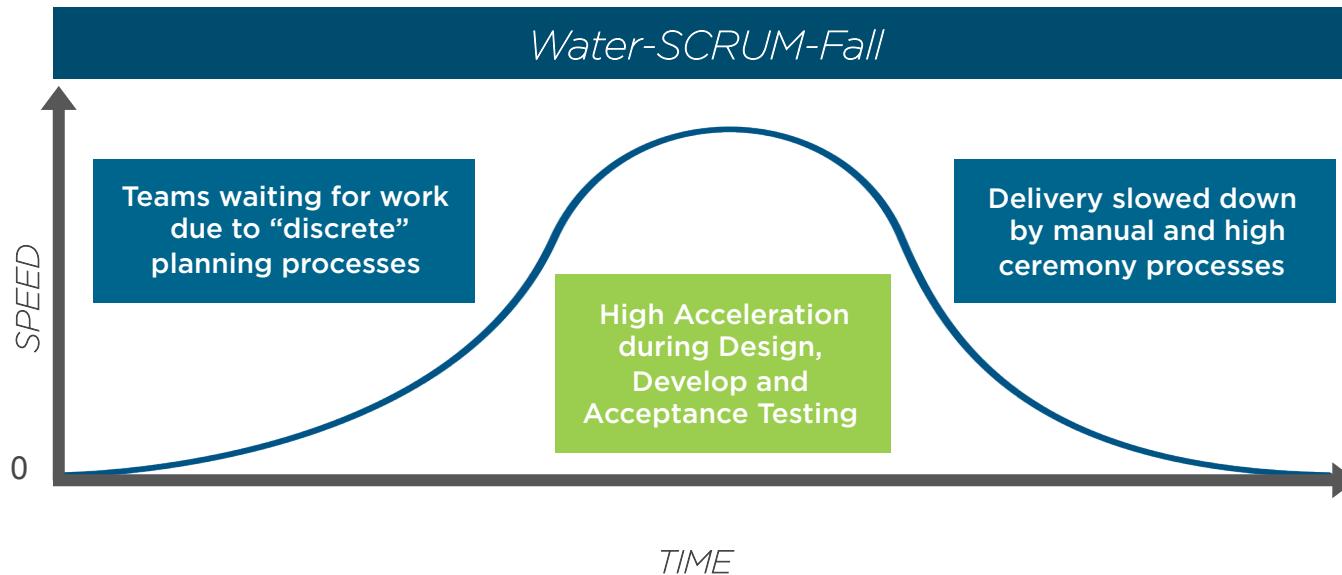
Flow Measures

Flow Measures	Description	Example
Backlog Size	Number of artifacts in the queue at a particular stage of the value stream	The number of Security Stories on an Agile team's backlog.
Lead Time	Time from request to delivered artifact running in production	Hours from customer requesting a feature to using the requested feature.
Cycle Time	Time from work start to completion	Days from developer accepting a Feature Story to merging the finished implementation to master.
Process time	Time an artifact is actively worked on	Cumulative days a Feature Story is actively worked on.
Wait time	Time from work request to work start	Time zone delay in hours for an offshore team to start work on a Feature Story.
Utilization	Sum of process times of lead time (%)	Low utilization for a Dev team with an external dependency

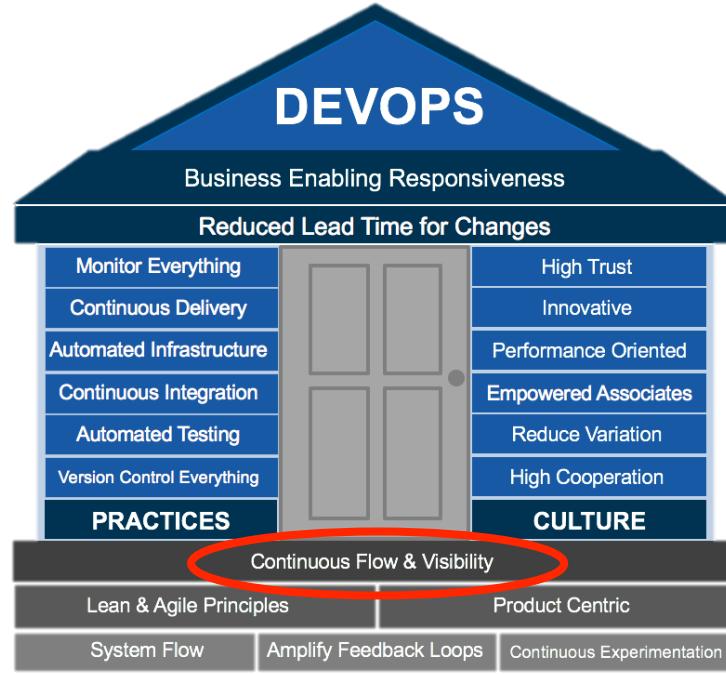
Flow Metrics

Flow Metrics	Type	Description
End-to-end Lead Time	Velocity	Time from customer request to improvement running in production
Cost per Work Item	Cost	Work items shipped per FTE.
Mean Time To Repair (MTTR)	Responsiveness	Round-trip time from support ticket, through Defect Story creation, diagnosis, fix through to delivery.
Productivity	Throughput	Number of Work Items delivered per team per release.
New Business Value Ratio	Value	Proportion of Artifacts of type Feature Story delivered per release.

ACCELERATE DELIVERY THROUGHOUT VALUE STREAM



DEVOPS MODEL

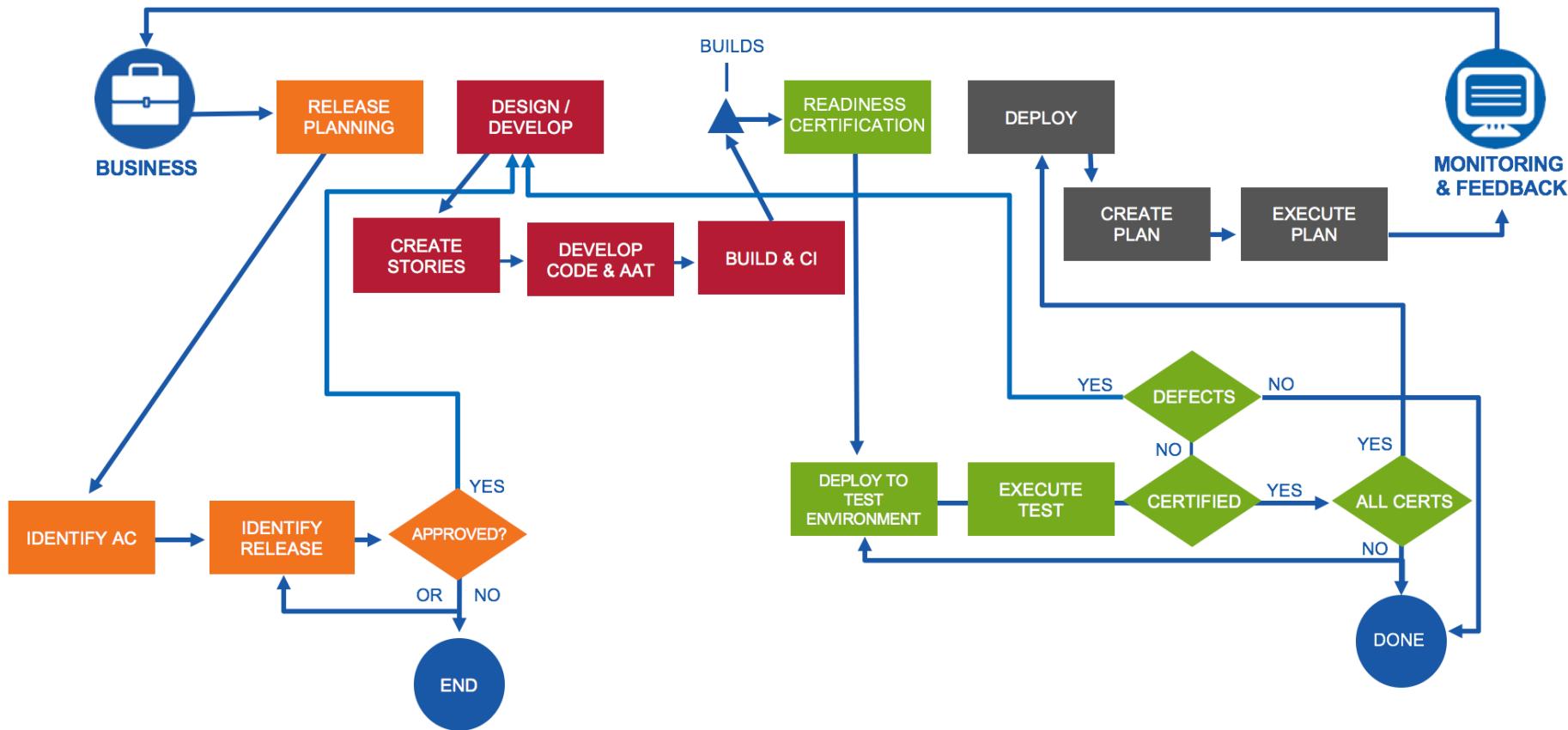


True North:

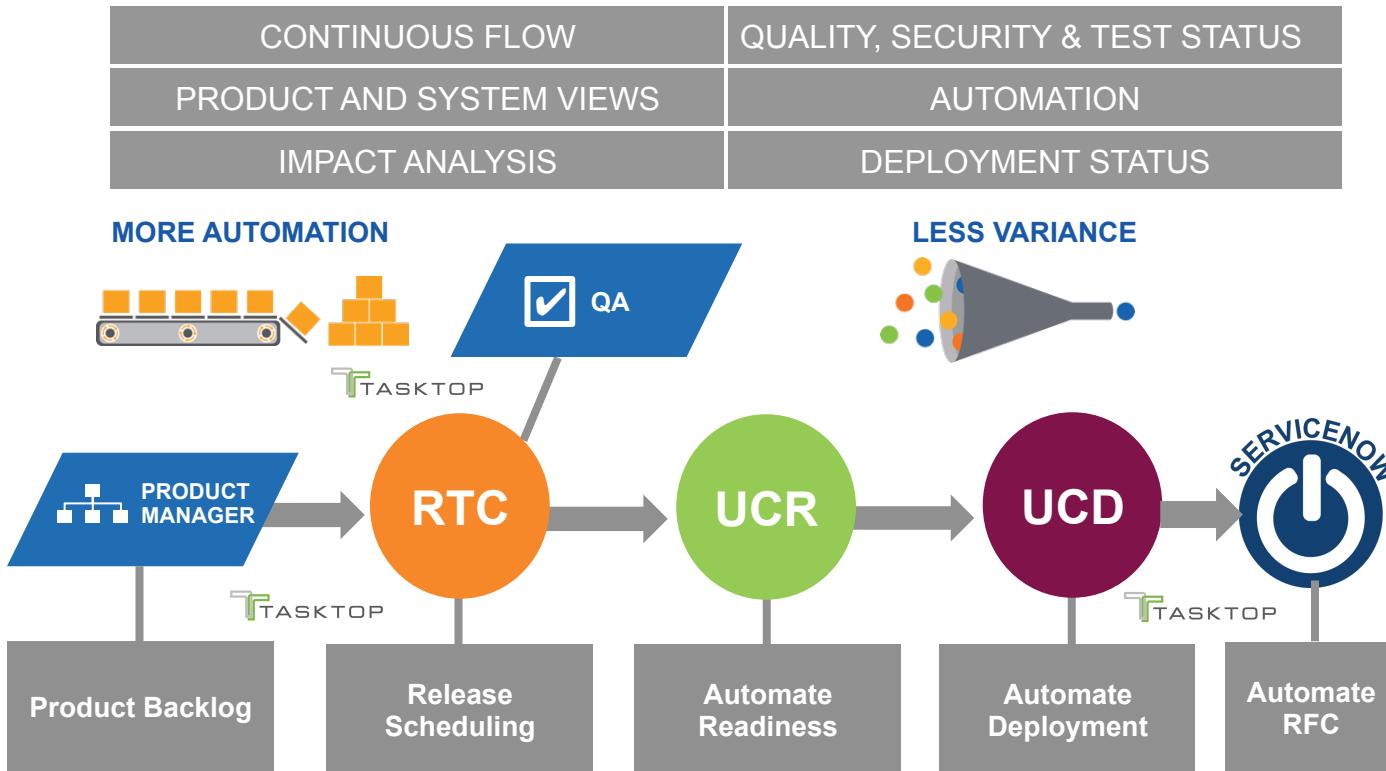
Reduced lead time for changes

Business enabling responsiveness

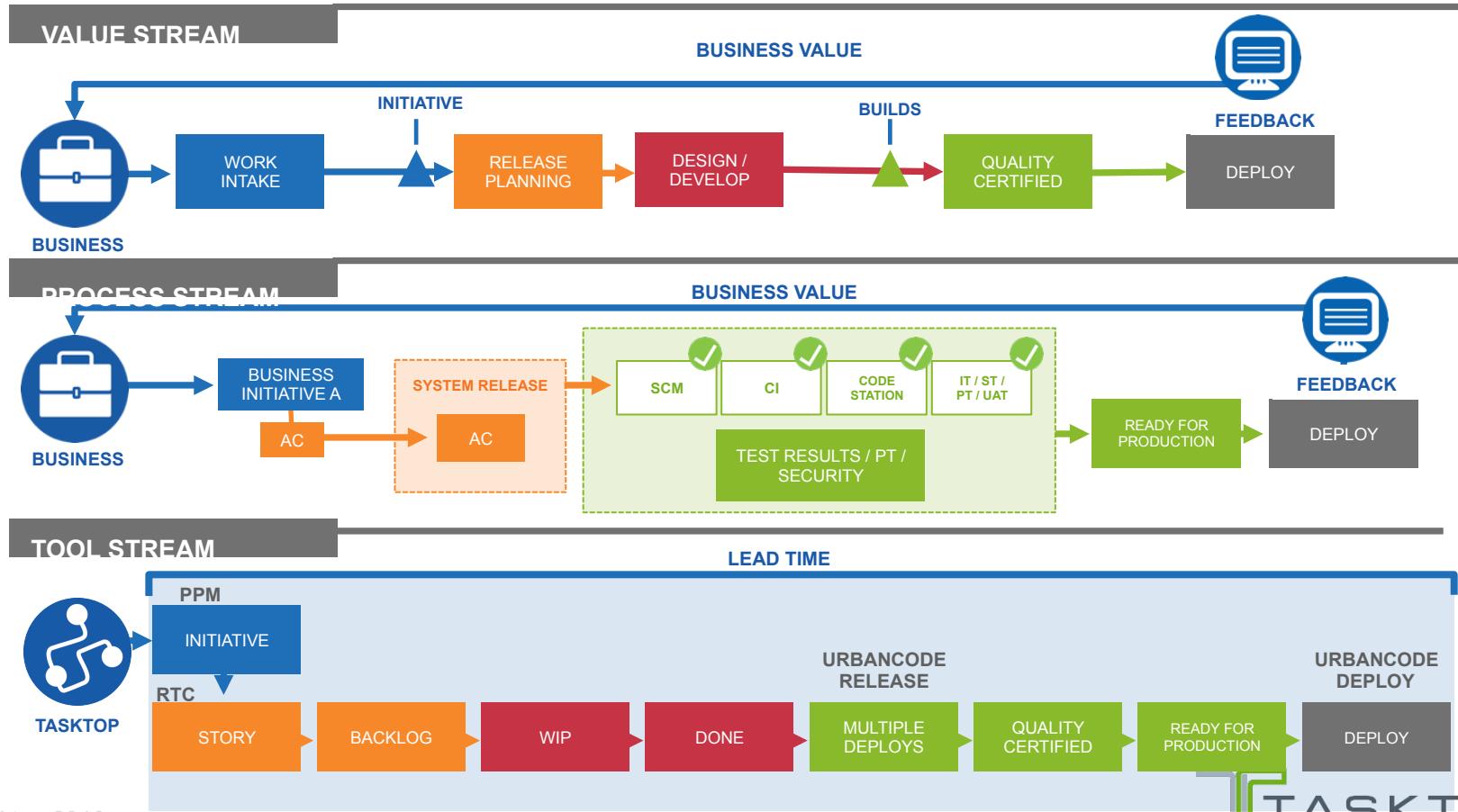
INTEGRATED DELIVERY VALUE STREAM



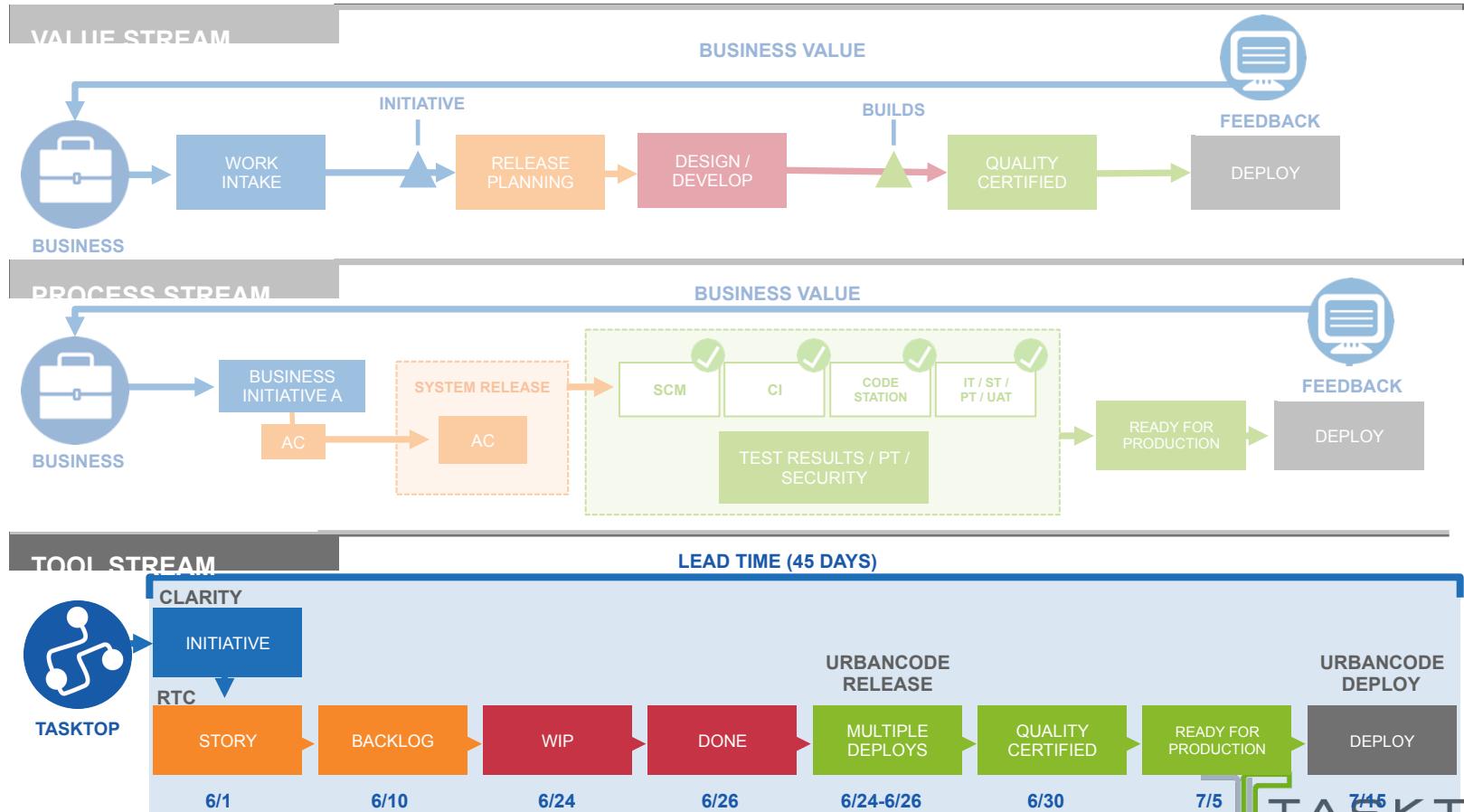
VISABILITY VIA REAL TIME INFORMATION



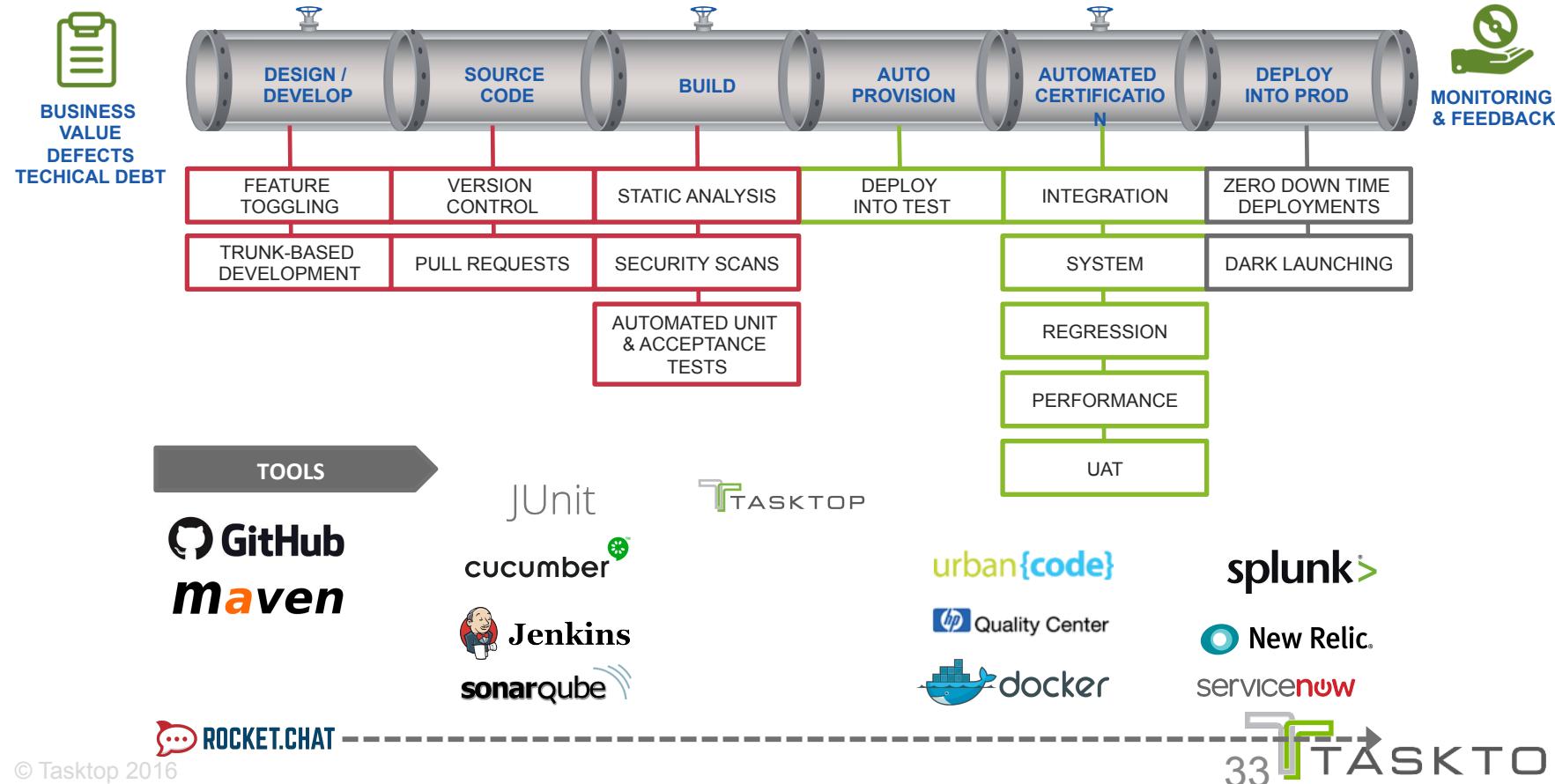
MEASURING LEAD TIME



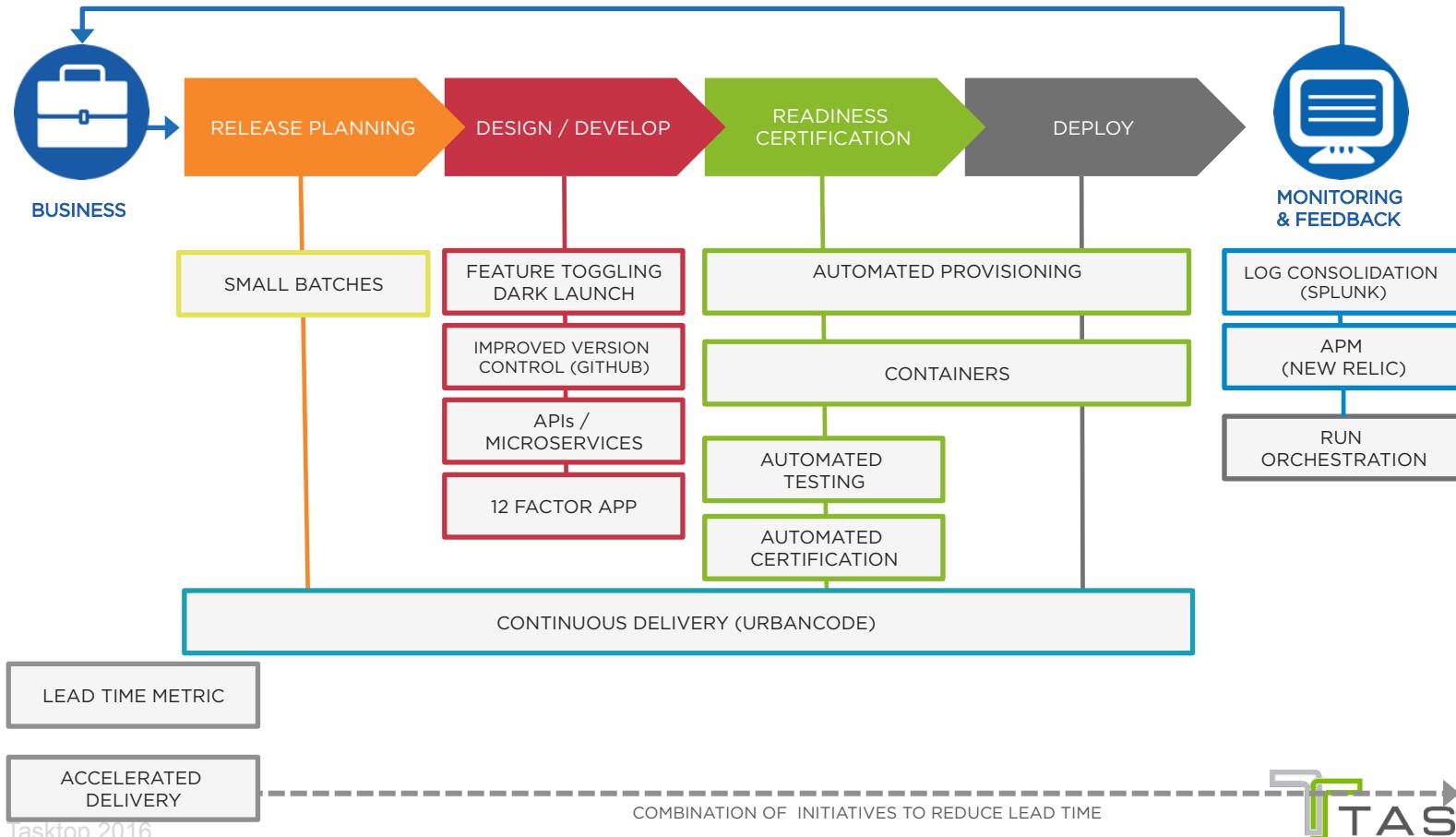
MEASURING LEAD TIME



DELIVERY PIPELINE



VALUE STREAM INITIATIVE MAPPING





All revolutions require a new infrastructure

Value Stream Networks

are the infrastructure for digital transformation

Value Stream Visibility

Tasktop Engineering Dashboard





Pitfalls of wrong model

Cyclomatic complexity v. lead time

Repeatability v. design thinking

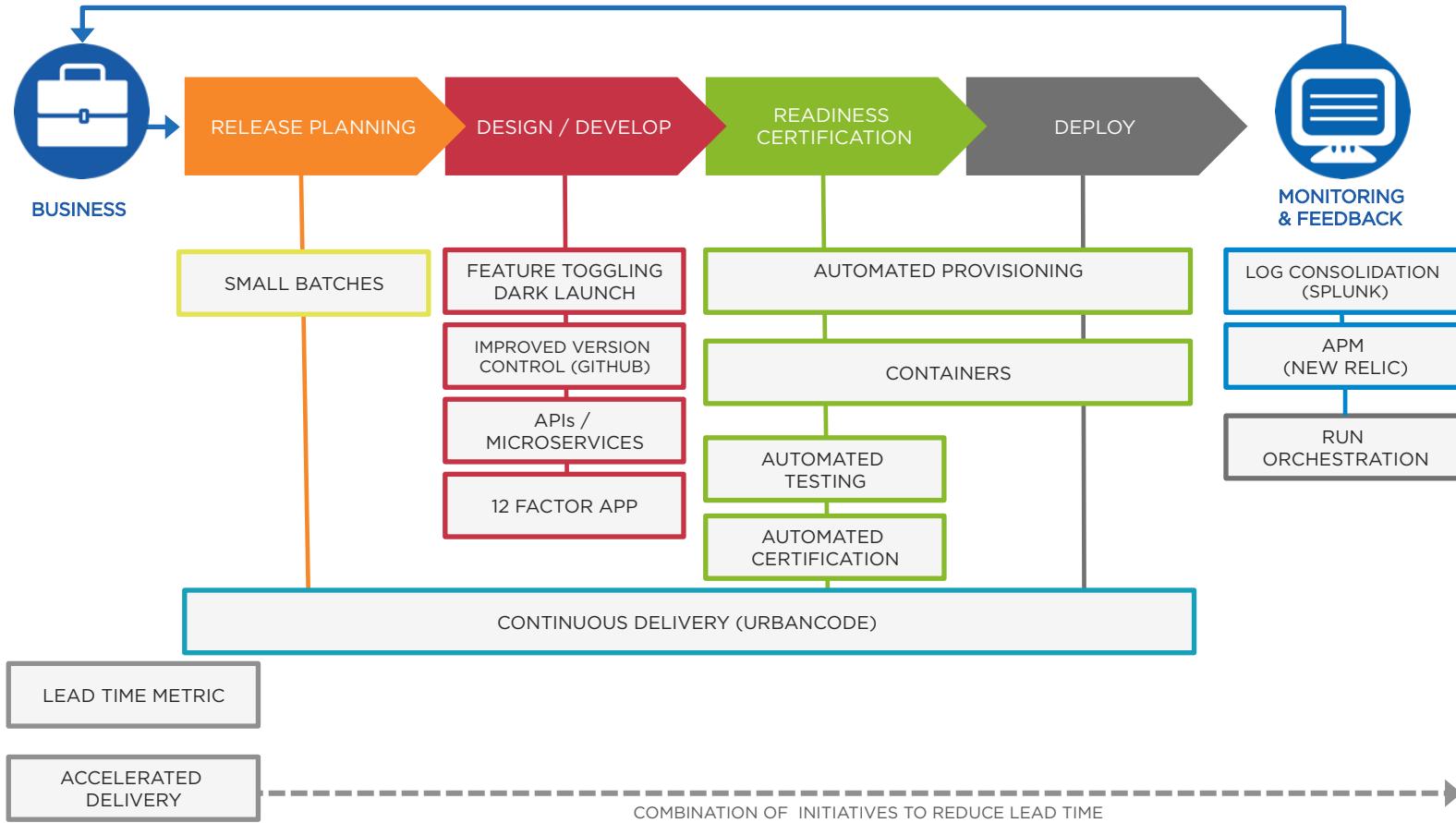
No modeling of latency, throughput

Inability to see the bottleneck



...the most important question...
Where is the bottleneck?

VALUE STREAM INITIATIVE MAPPING



Infrastructure for innovation

Value Stream Integration

- Create a roadmap for *end-to-end* integration, dovetailed with CI/CD efforts
- Deploy or pilot *before* finalizing tool selection
- Goal is end-to-end *flow*

Value Stream Visibility

- Define a few end-to-end *flow metrics* (eg, Lead Time)
- Goal is end-to-end *feedback*

Value Stream Architecture

- Assign and empower the role

Here's the help we are looking for



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Infrastructure for Innovation

Dr. @mik_kersten @carmendeardo