Accelerate Enterprise Systems Application Delivery with DevOps

Hayden Lindsey
Vice President & Distinguished Engineer,
DevOps for Enterprise Systems
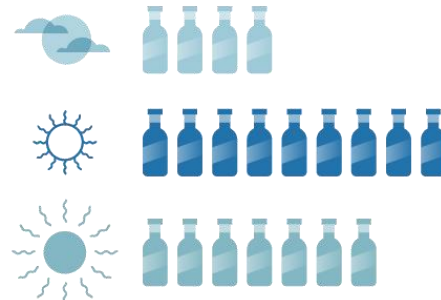
High-growth companies are re-composing their businesses through digital transformation

New channels and business models

New apps are consolidating data and capabilities to engage new audiences

Real time insight driven processes

Business processes are being infused with insight from nontraditional data sources to create new business moments
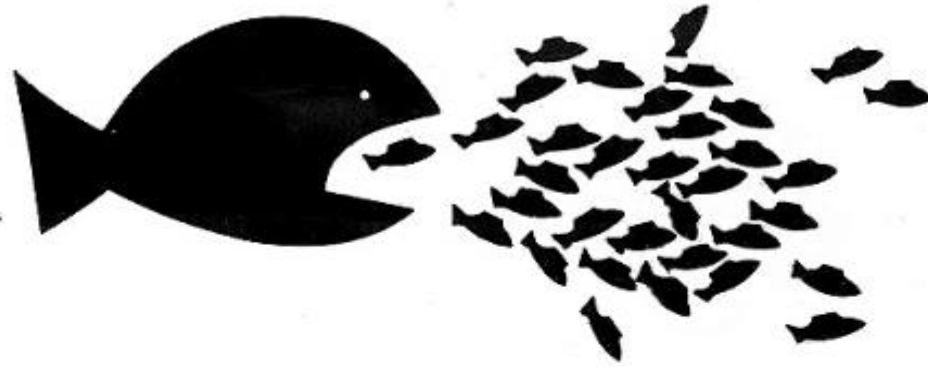
Digital innovation

New businesses are composed by leveraging digital services from a broad ecosystem
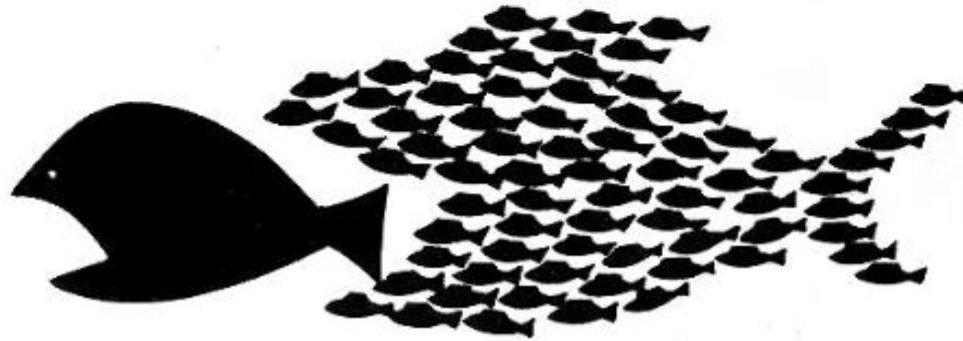
Digital Disruption enables small, nimble competitors to be successful with new business models

FROM……..

……TO

Many large, established z clients struggle to transform rapidly

…because of…

Old infrastructure and beliefs
- ✓ Outdated developer and team tools
- ✓ Aging developer population comfortable with the status quo
- ✓ Disconnected teams, silos
- ✓ FUD: "millennials can't code COBOL", "manual processes exist for a reason", "SoR dev can't be as nimble as distributed dev"
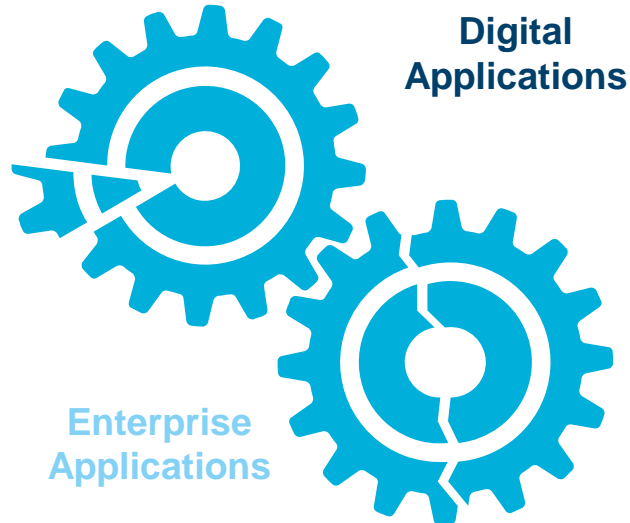
Old processes
- ✓ Manual testing
- ✓ Availability of entire system is required to test
- ✓ Mainframe availability required (if some z)
- ✓ Reluctance to move test data off mainframe
- ✓ Manual cross-platform coordination required

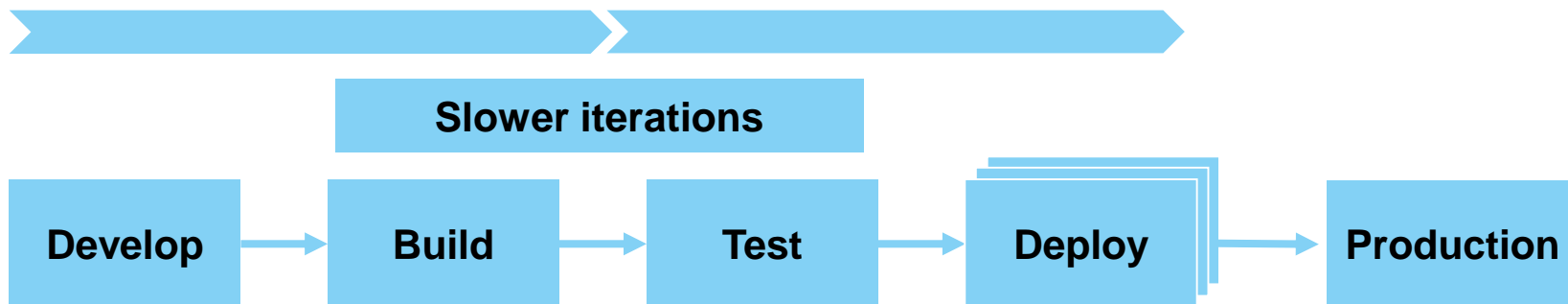All of this combines to cause the unique challenge of **variable-speed IT**……
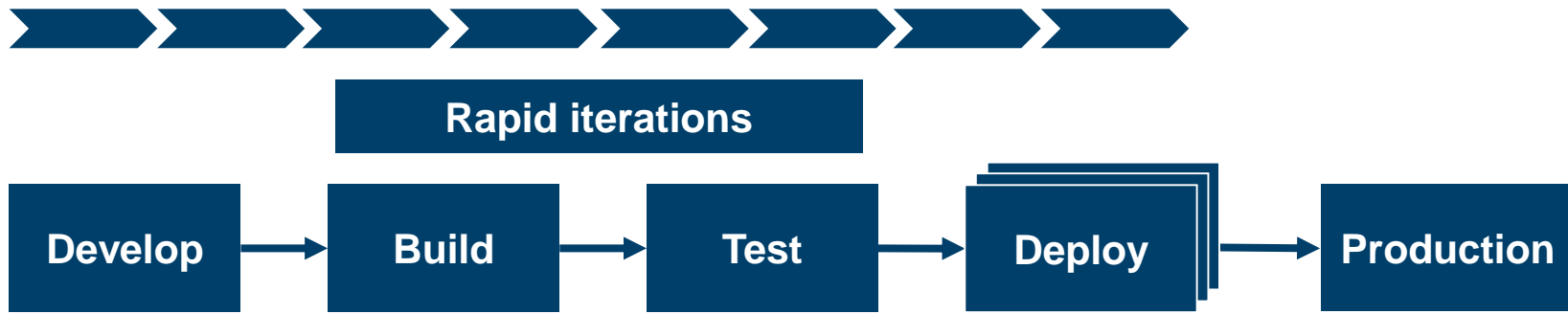
The result… Teams are delivering applications at variable speeds…with SoR speed inhibiting business agility.

Good News: z13 is the best platform to drive the transformation!

Mobile - Why IBM z Systems?

Performance

61% better throughput, 36% faster response time, 17 to 37% lower cost per transaction

Serving mobile data directly from z/OS is 40% less expensive than exporting to a system of engagement

Consistently delivers less than a second response time across millions of transactions a day

80%
Enterprise data is on mainframe

Analytics - Why IBM z Systems?

Performance

z13 can deliver insights up to 17x faster and with 13x better price performance than closest competitor.

- -

IBM DB2 Analytics Accelerator (IDAA)
Up to 2000x acceleration factor

$24B
Invested in Big Data & Analytics capabilities

Cloud - Why IBM z Systems?

Security, Uptime

We provide cloud solutions that preserve z Systems' unparalleled uptime capabilities and leverage our unique security capabilities.

Most Cloud's are built for 99.9% uptime. Customers should not have to choose between embracing cloud and 99.999% uptime.

Scalability

We have the best vertical scalability on the market.

99.999%
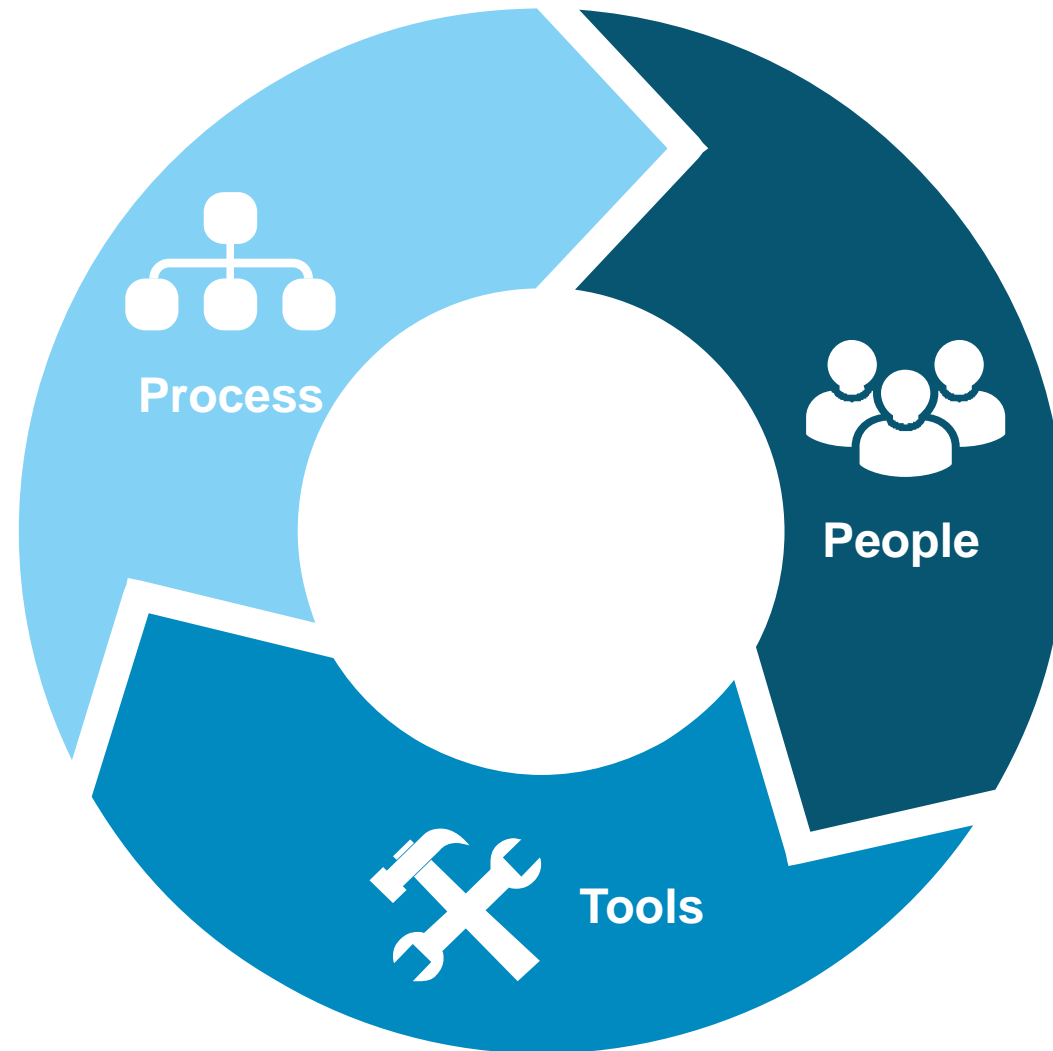Availability of z System

How should enterprises realize the full potential of the platform despite these unique challenges?
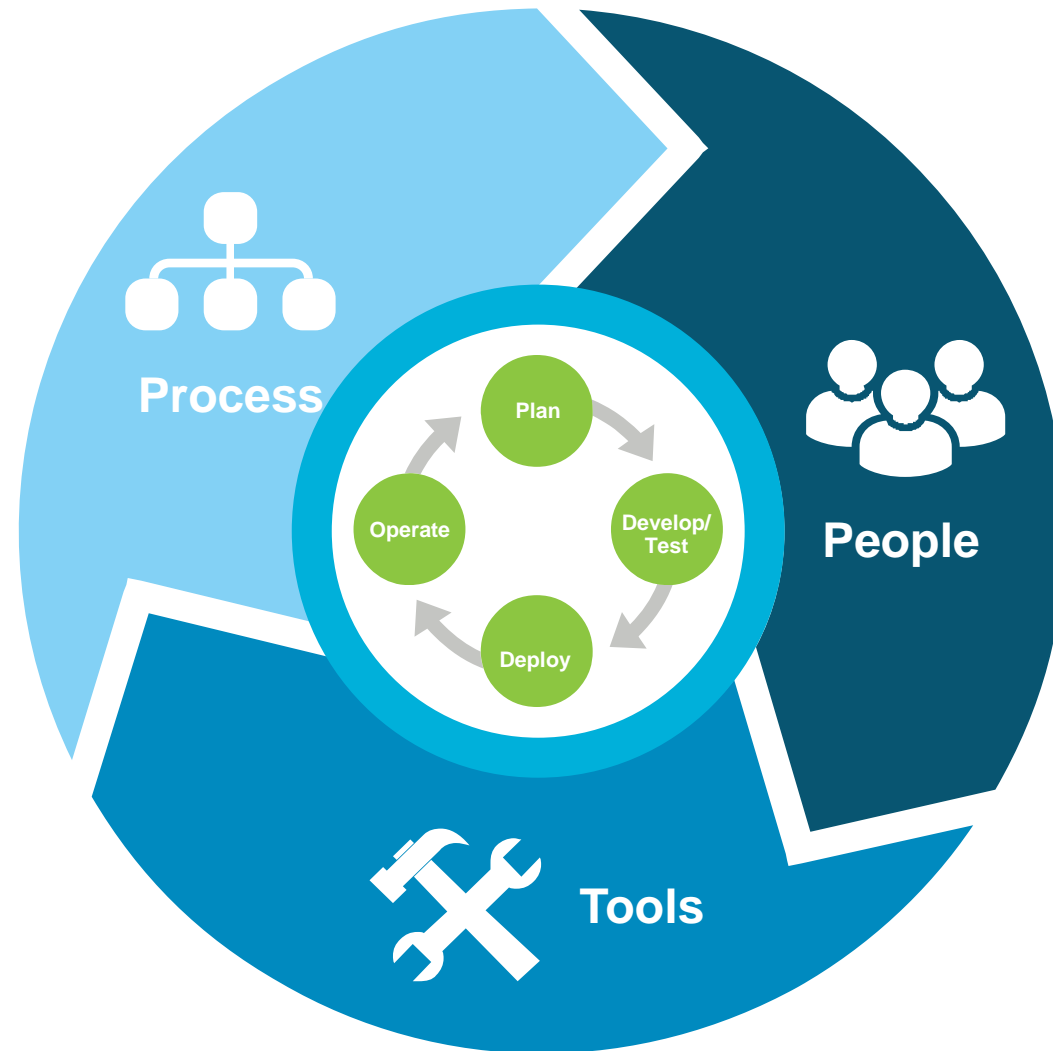

DevOps, that's "how"!!

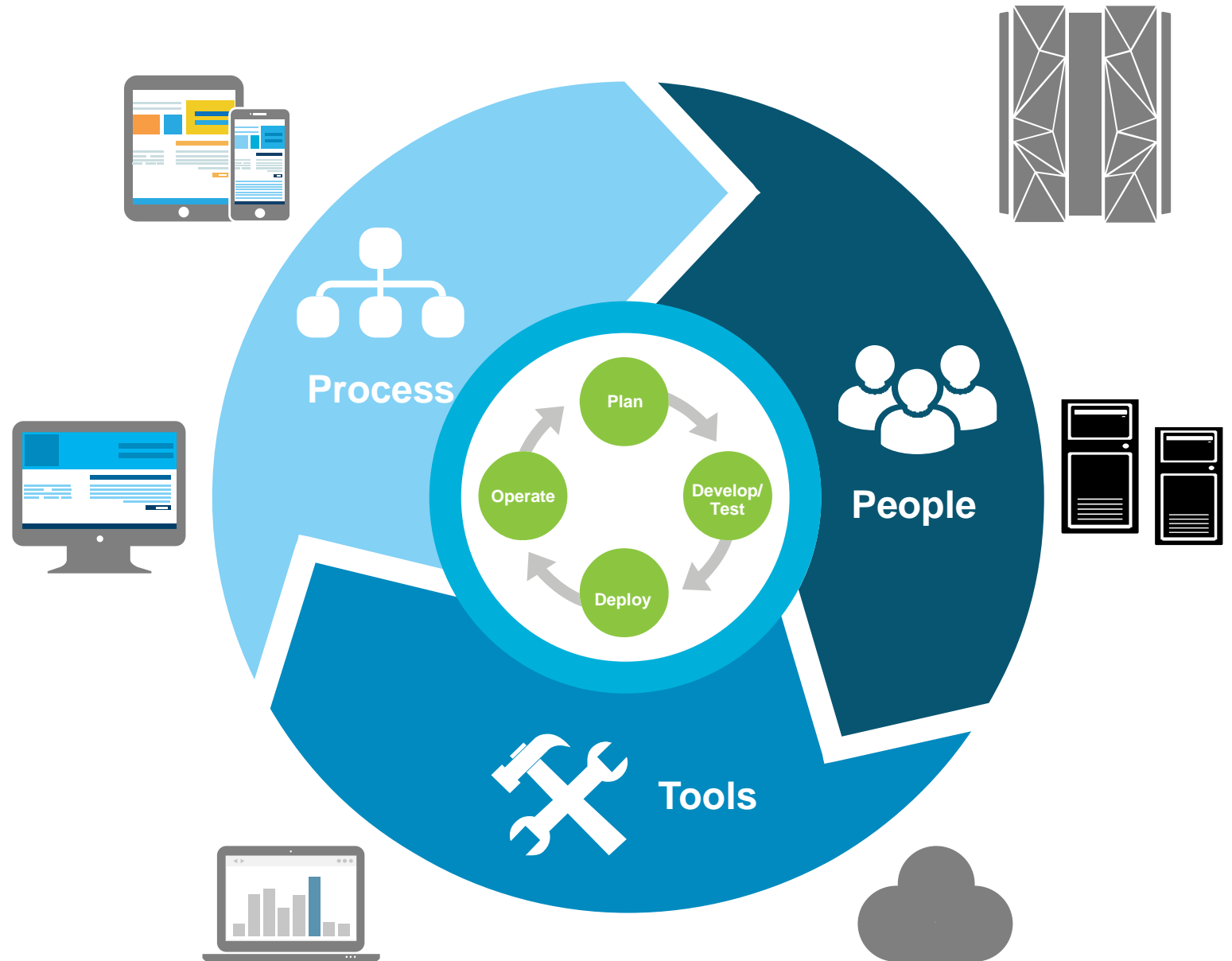**DevOps allows you to exploit these digital disruptors and the z platform, yet overcome the challenges by transforming people, process, and tools…**

Process

People

Tools

...across the entire lifecycle

Process

People

Tools

Plan

Develop/Test

Operate

Deploy

...for all technologies and platforms

Process

People

Tools

Plan

Develop/Test

Deploy

Operate

DevOps
The Process

Eight Key DevOps Practices

Pulled from Agile & Lean Experiences

34% of companies have "crossed the chasm" to 3-week delivery increments

Positive correlation between speed and business satisfaction

1. Minimum Viable Product	2. Dedicated Teams	3. Loosely Coupled Architecture	4. Minimizing Hand-offs, Maximizing Flow
5. Deliver in Small Batches	6. Transparency	7. Eliminate Overhead	8. Automate Testing using APIs

FORRESTER®

Base: 600 IT professionals with application development responsibilities from US, Canada, UK, France, and Germany Source: A commissioned study conducted by Forrester Consulting on behalf of IBM, May 2014
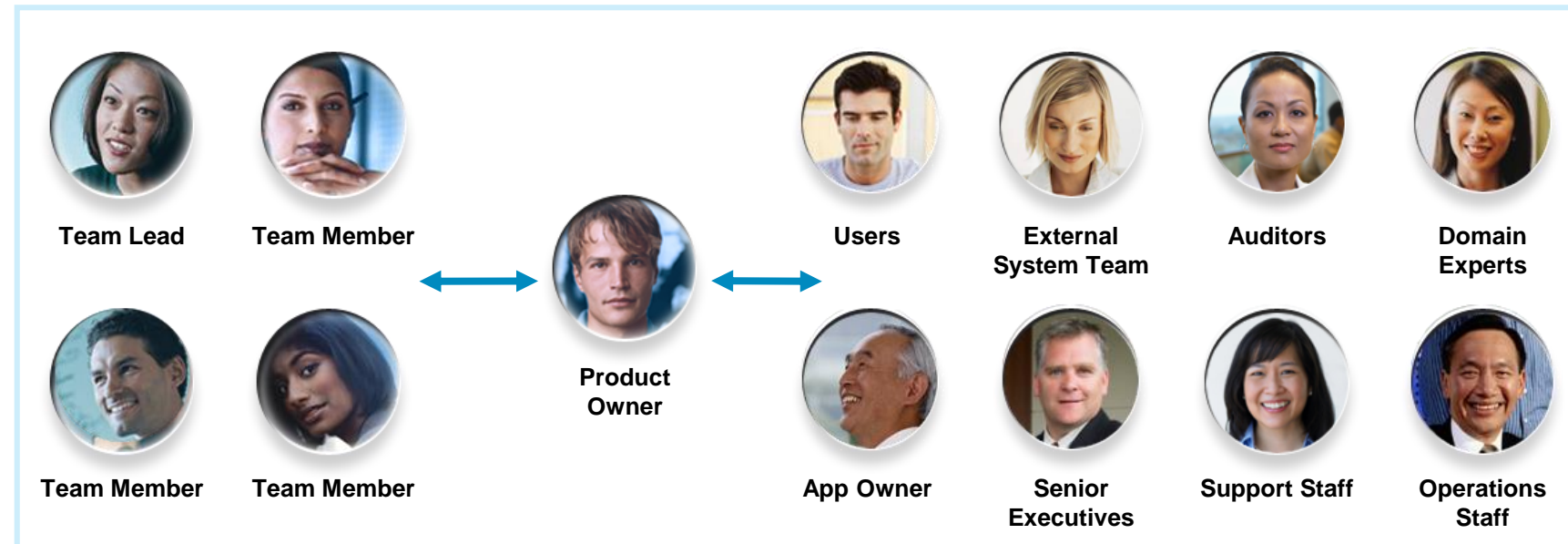
DevOps
The Culture

It's all about the people

In a True DevOps Culture:

- **Team is primary, role is secondary**
- Teams are:
    - Measured on common criteria of success
    - Dedicated
    - Empowered

And don't under-estimate the value of training and skills enablement!

Team Lead · Team Member · Product Owner · Users · External System Team · Auditors · Domain Experts

Team Member · Team Member · App Owner · Senior Executives · Support Staff · Operations Staff

DevOps
The Tools

Skills and productivity - developers

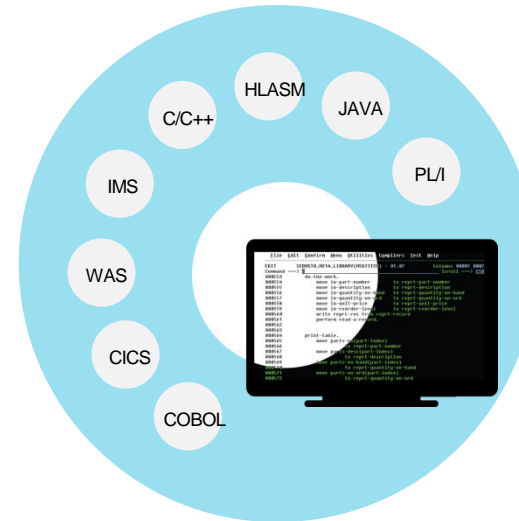| Status quo	Solution	Future state

Status quo
- Outdated tools
- Aging developers
-
- Slow – SoE teams faster, LOB unhappy
- High cost – competitiveness drops, opportunities missed
- High risk – critical skills leave, new developers uninterested, business-critical systems jeopardized

Solution (HLASM, JAVA, C/C++, PL/I, IMS, WAS, CICS, COBOL)
- Problem determination & end to end debug
- Application understanding, impact analysis
- Code coverage, code quality and zUnit
- Code coloring, syntax highlighting, quick fixes…and MUCH, MUCH MORE!

Future state
- Modern multi-platform tools
- Revitalized and new developers
-
- Fast – in synch with SoE teams, no "variable speed" or "2-speed", LOB happy
- Low cost – competitive, opportunities seized
- Low risk – new developers attracted, skills transferred, business-critical systems built / enhanced
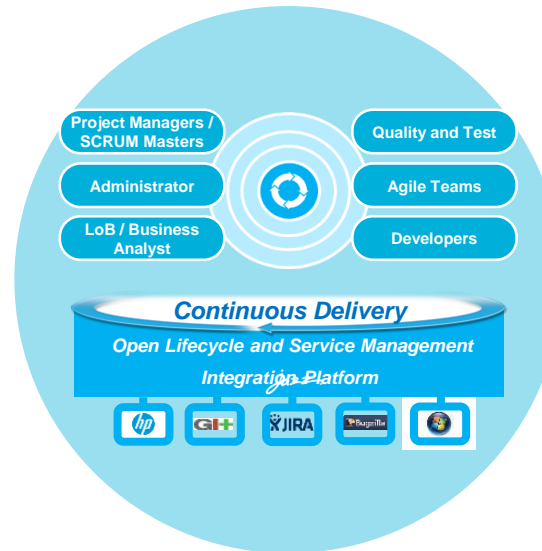
Skills and productivity - teams

Status quo

- Outdated team tools
- Disconnected teams, silos

- Slow – manual x-platform coordination, low productivity
- High cost – many team tools, z expensive
- High risk – out of sync errors, critical skills leave, new teams uninterested, business-critical systems jeopardized

Solution

Project Managers / SCRUM Masters

Quality and Test

Administrator

Agile Teams

LoB / Business Analyst

Developers

Continuous Delivery

Open Lifecycle and Service Management Integration Platform

hp GH+ JIRA Bugzilla

- End-to-end platform support, including deep integration with z/OS and LoZ
- All relevant technologies supported
- Real-time planning, built-in support for agile / DevOps
- Work items to coordinate multi-platform work

Future state

- Modern multi-platform team environment
- Revitalized, integrated teams

- Fast – highly productive teams
- Low cost – less expensive
- Low risk – automated integrations, new teams attracted, business critical systems built / enhanced

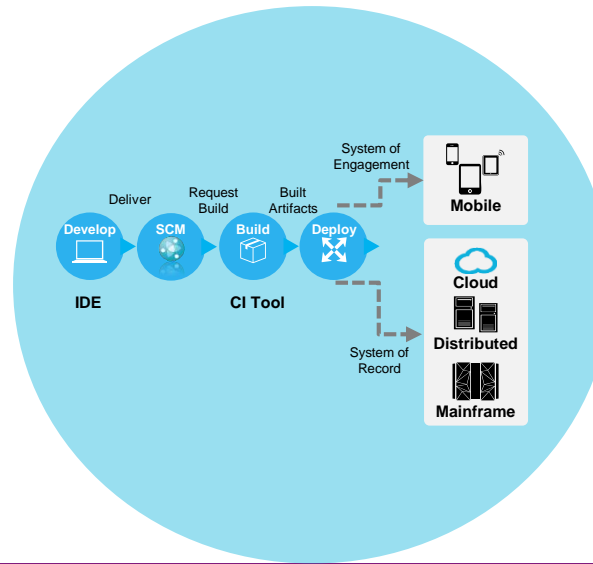# Multi-platform deployment automation

Status quo

- Mostly manual processes
- Cross-platform coordination req'd

- Slow – labor intensive
- High cost – labor intensive, opportunities missed
- High risk - cross-platform synchronization breakage

Solution

System of Engagement — Mobile

Deliver | Request Build | Built Artifacts

Develop — SCM — Build — Deploy

IDE — CI Tool

System of Record

Cloud

Distributed

Mainframe

- Cross-platform, unified deployment orchestration and configuration, including deep integration with z/OS and LoZ
- Tight SCM integration
- Cross-platform release orchestration

Future state

- Automated
- Coordinated - across all platforms and technologies

- Fast – no deploy bottleneck (early & often), time to market, early and frequent client feedback
- Low cost – less labor, opportunities captured
- Low risk – cross-platform synchronization
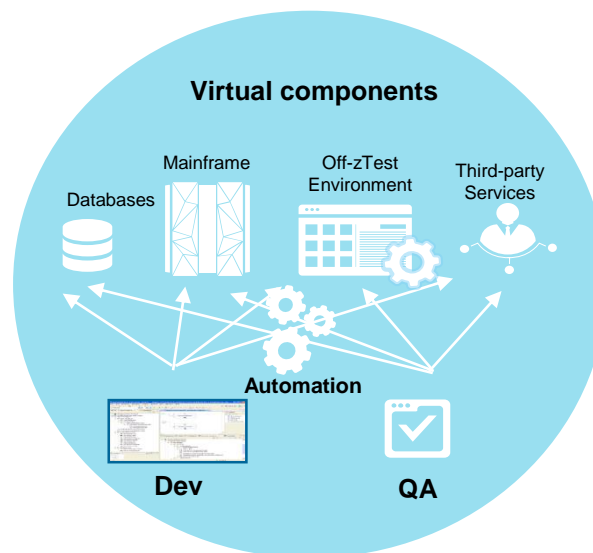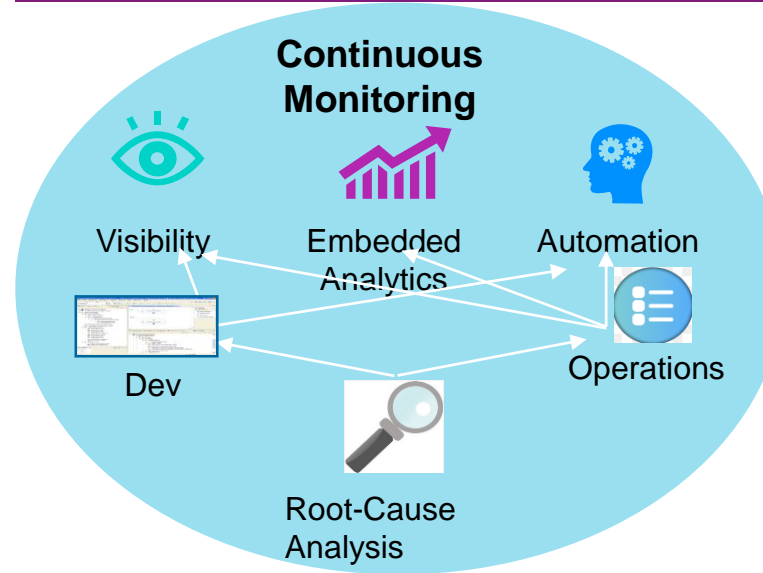
Affordable test automation and virtualization

Status quo

- Manual testing
- Availability of entire system required, including z

- Slow – labor intensive
- High cost – time, employee expense, MSU-based software expense
- High risk – mistakes undetected or found late, poor coverage, feedback too late to adapt

Solution

- Multi-platform and multi-technology service virtualization
- Virtualization of DBs, applications and services, including DB2 and CICS
- Automation tools for all types of interfaces
- Ability to test z applications off z using no MIPs

Future state

- Automated
- Coordinated - across all platforms and technologies

- Fast – no deploy bottleneck (early & often), time to market, early and frequent client feedback
- Low cost – less labor, opportunities captured
- Low risk – cross-platform synchronization

Deep operational insights to improve quality and accelerate feedback

Status quo

- Manual log checking
- Fragmented analysis
- Long time until user feedback

- Slow – labor intensive
- High cost – time, employee expense, MSU-based software expense
- High risk – critical dependencies hard to isolate, feedback too late to adapt

Solution

Continuous Monitoring

Visibility

Embedded Analytics

Automation

Dev

Operations

Root-Cause Analysis

- Multi-platform and multi-technology service management
- Integrated automated approach to application performance support
- Proactive performance analysis

Future state

- Automated communication up and down the lifecycle
- Coordinated - across all platforms and technologies
- Feedback to improve quality

- Fast – continuous monitoring and feedback provides application insight
- Low cost – automated to decrease monitoring resource
- Low risk – ops teams need line of sight to application changes to avoid performance impacts
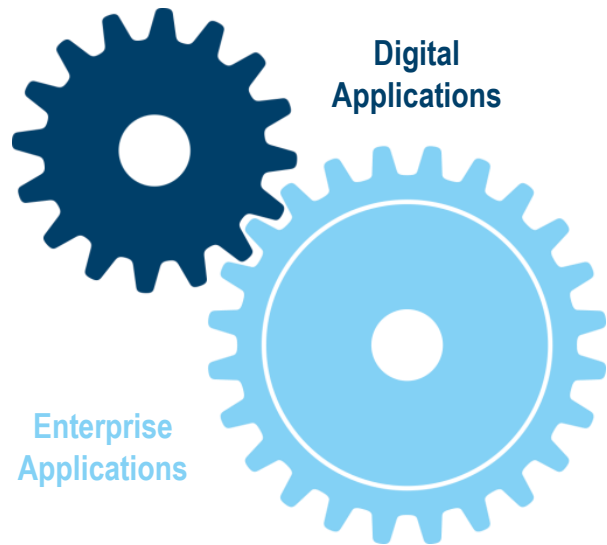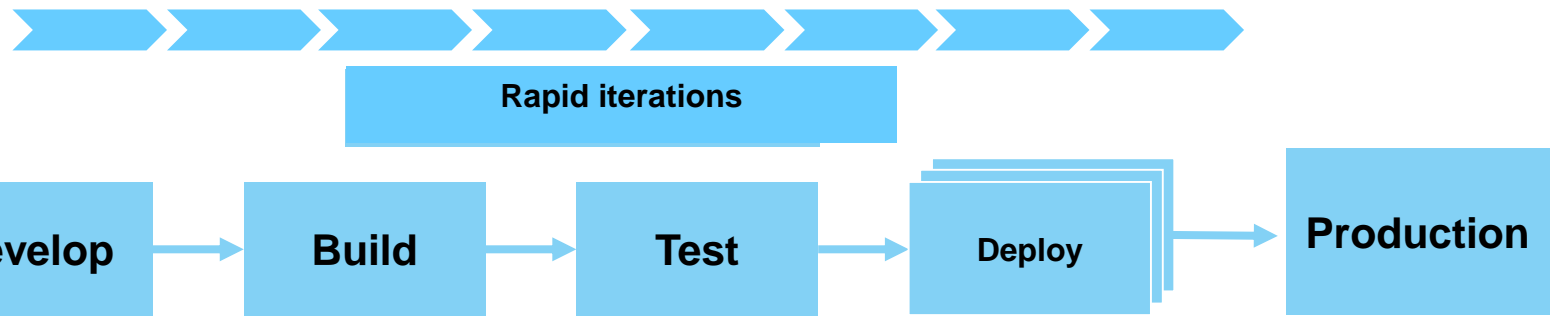
DevOps
The Outcomes

The result… SoE and SoR teams are in synch and delivering applications at the speed the business requires

Rapid iterations

Develop → Build → Test → Deploy → Production

API Catalog
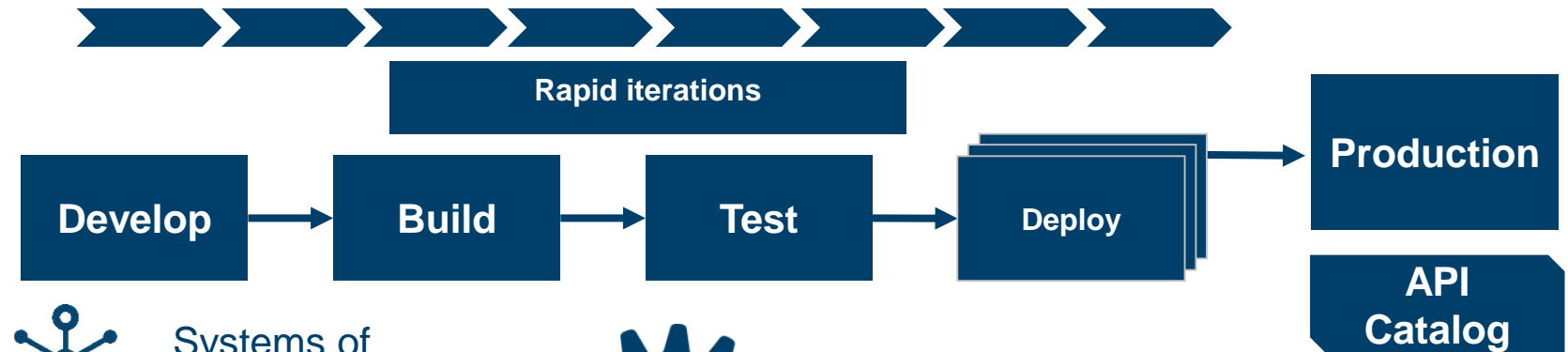
Systems of Interaction

Digital Applications

Enterprise Applications

Systems of Record

Bottleneck Removed!

Rapid iterations

Develop → Build → Test → Deploy → Production

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The Critical Measure of DevOps Success
The Hidden Factory Opportunity
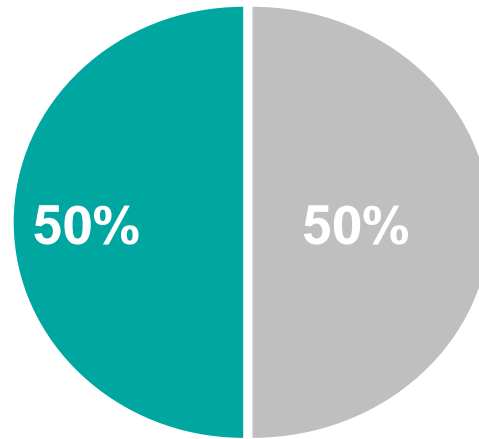
DevOps Transformation

50% 50%

20%

80%
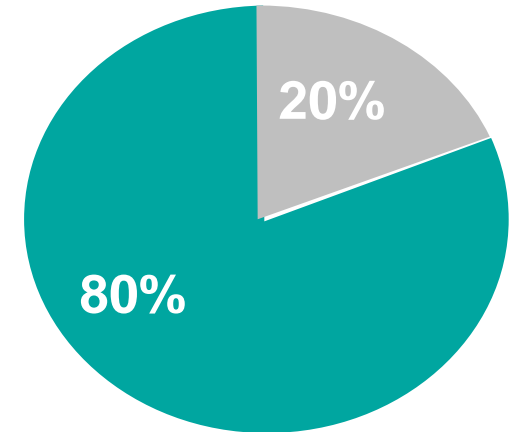
■ Productive
□ Waste

Hidden Factory= additional value you could create if you eliminated waste and redirected those resources to innovation

Many Enterprise Companies are Leading the Way…

TARGET — 80 deploys/week, <10 incidents/month[1]

Nationwide — 80% reduction in critical defects, 70% increase in system availability, 90% on-time delivery vs. 60% previously[2]

macy's — reduced dev cost from 100M to 55M/year, 140% increase in number of products under development[3]

ticketmaster — resale up 30% first half of 2014, 24% YoY increase in customer service rating[4]

[1] http://www.slideshare.net/DevOpsEnterpriseSummit/does14-ross-clanton-and-heather-mickman-devops-at-target-41869677
[2] http://www.slideshare.net/DevOpsEnterpriseSummit/tuesday-400-hayden-lindsey-and-carmen-de-ardo-final?
[3] http://www.slideshare.net/DevOpsEnterpriseSummit/does14-gary-gruver-macys-transforming-traditional-enterprise-software-development-processes
[4] http://www.slideshare.net/DevOpsEnterpriseSummit/tuesday-330-shakeel-sorathia-final?qid=d758c122-8df0-4e03-b2da-4ba4c7271897&v=qf1&b=&from_search=11

DevOps for Enterprise Systems – Key Takeaways

1. **DevOps is about transforming application development and delivery in order to accelerate digital innovation.**
So DevOps is a topic for both business and IT roles in the organization.

2. **You don't <u>buy</u> DevOps, you <u>do</u> DevOps.** *DevOps is an approach, a mindset – a combination of culture, process and technology (including infrastructure, tools and services).*

3. **DevOps is not only about the hand-off between Development and Operations.** *DevOps is about applying <u>lean and agile</u> principles across the application delivery lifecycle (biz-dev-test-deploy-operate) to achieve <u>continuous delivery</u> of digital innovation. Key concepts: automation, feedback loops.*

Thank You