How to build and run software development factory?

IBS IT COMPASS 2022

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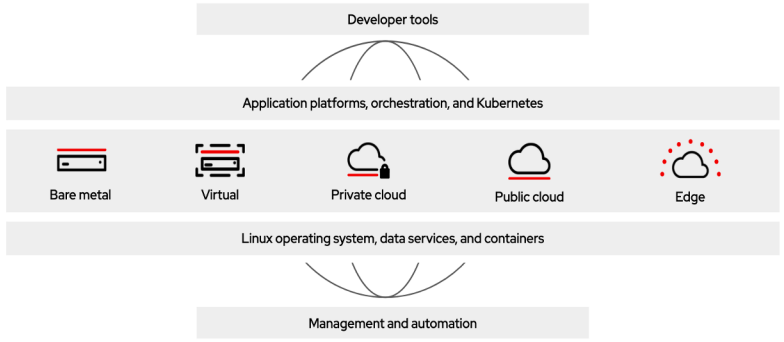
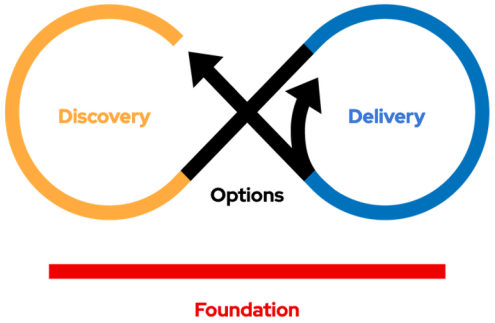
Red Hat

Challenges Encountered in the Digital Journey



ARCHITECTURE

CULTURE



PROCESS

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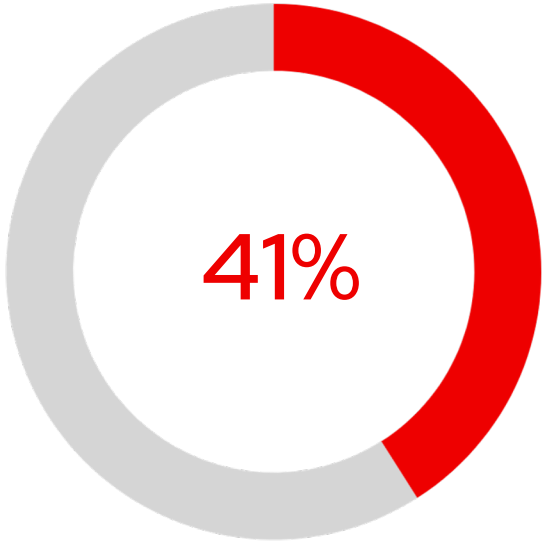
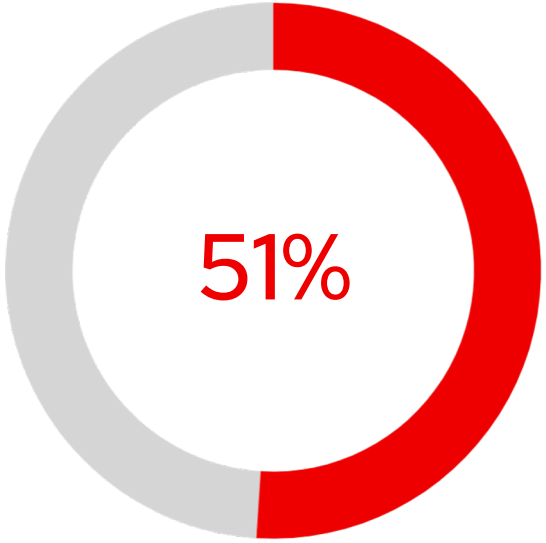
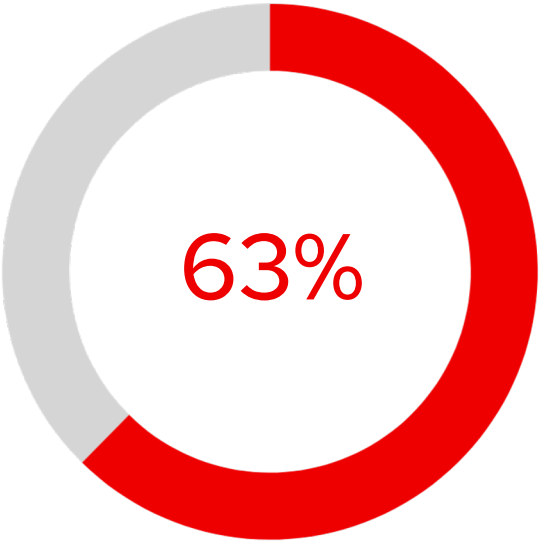
Challenges Encountered in the Digital Journey



Technology



Process



Culture

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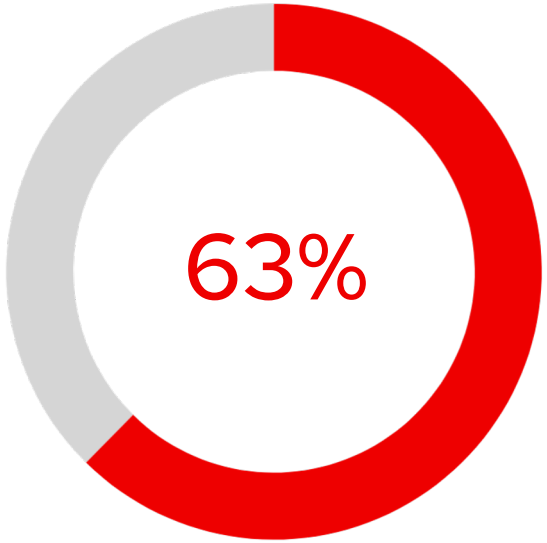
#3 Culture challenges remain the biggest impediment to transformation efforts



Culture

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Challenges

- Customer experience - too many new requirements and many technical dependencies for releases, slow reactive approach, unable to drive changes, complex and interdependent solutions
- Inefficient, fragmented processes, KPIs not connected to customer value
- Compliance testing slows the releases down
- Huge cost of IT, solutions not scalable, lots of technical debt
- Duplicated effort
- Better quality - mostly manual testing and manual application of changes
- Developer onboarding - likely to take months
- Developer experience - difficult to find information about specific software systems
- More automation - complex and lengthy manual deployment with scripts created on app by app basis
- Complexity
- Fragmented testing
- Development disconnected from deployment - siloes
- Security seen as a blocker
- Long term capacity planning - more agile approach needed
- Independent vendor, black box

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Ambitions

- Customer experience - faster releases of more valuable functionality, reduced time to market
- Deliver Business Value
- Reduce cost of IT
- Reduce Time to Market
- Baselined metrics connected to business outcomes that drive the goals
- Refactor, slice off a vertical slice
- Better quality - increased testing coverage and improved quality achieved by automated testing
- Developer onboarding - reduce time and automate the process
- Developer experience - services more efficient and easy to consume and possible for developers to have input
- More automation - entire platform needs to be automated
- Less dependency between projects and products
- Improve - shift left on security
- Effective collaboration between product and development
- Include security and network departments into reshaped delivery processes

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Culture- Fostering innovation

Leadership support is Crucial!

Avoid long-term roadmaps.
Have a vision, but plan just enough to get started.

Break big things into small chunks.
Work incrementally.

Use rapid feedback cycles.
Try new and daring things, but fail fast.

Experiment to inform strategy.
Turn small failures into learning opportunities.

Automate as much as possible.
Use test-driven development and continuous integration and delivery.

Build new skills.
Use pairing and mentoring to share across teams, departments, and organizations..

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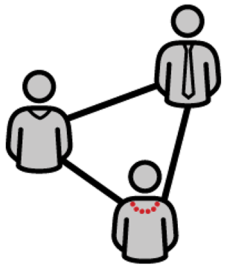
Rapid innovation & real business results

With **Red Hat Open Innovation Labs**

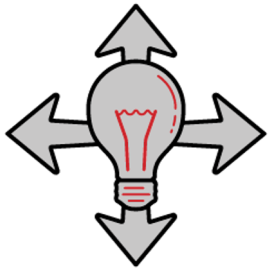
Experiment

Rapidly build prototypes,
do DevOps & be agile



Immerse your team

Work side by side with experts
in a residency-style engagement



Innovate

Bring modern application
development back to your team

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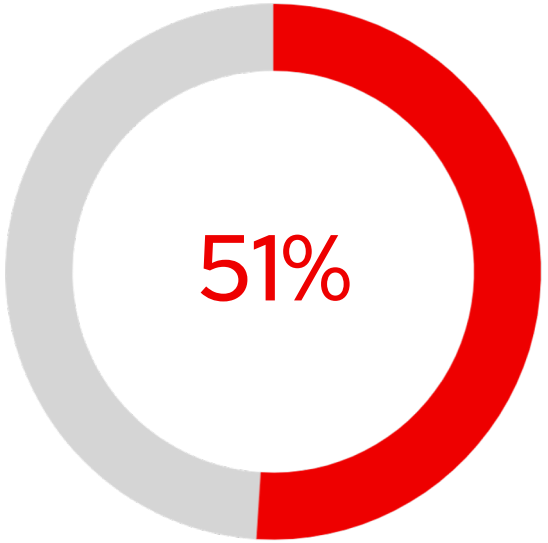
#2 Challenges Encountered in the Digital Journey

Source: Harvard Business Review Analytic Services, commissioned by Red Hat. Rethinking Digital Transformation: New Data Examines the Culture and Process Change Imperative in 2020. March 2020. (n=690)



Process

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Conway's law

"Organizations, who design systems, are **constrained** to produce designs which are copies of the communication structures of these organizations."

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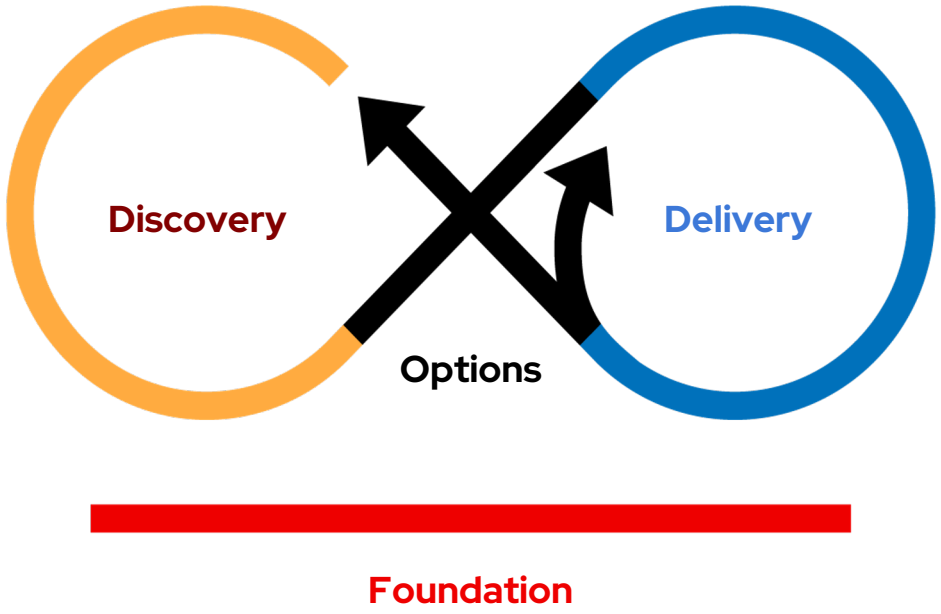
Open Practice Library

https://openpracticelibrary.com/

Deliver real business value with agility



The foundation creates a team culture of collaboration and technical engineering practices. Without this foundation, teams cannot reach sustainable continuous delivery.

Why are you doing this?
What problems will it solve?
How will you measure the results?

Compare what you've learned with the direction you are heading.
What are the possibilities?
What do you need to realize the outcomes you want?

Deliver the features you have determined and get feedback from users and stakeholders.
What was the impact?
What did you learn?

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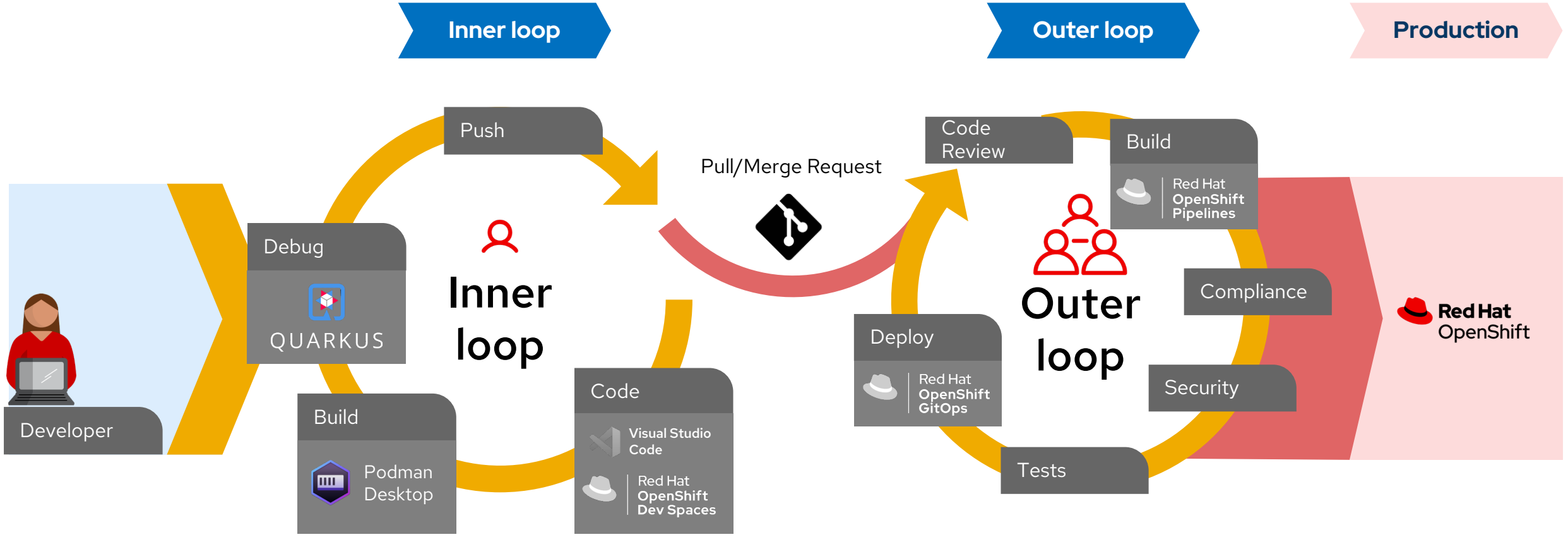
Developer Flow

How Developer Tools bring customers from code to production



https://enterprisersproject.com/article/2022/11/15-minute-primer-kubernetes?utm_medium=email&utm_campaign=tepweekly&sc_cid=7013a00000318CPAAY&blaid=3844043

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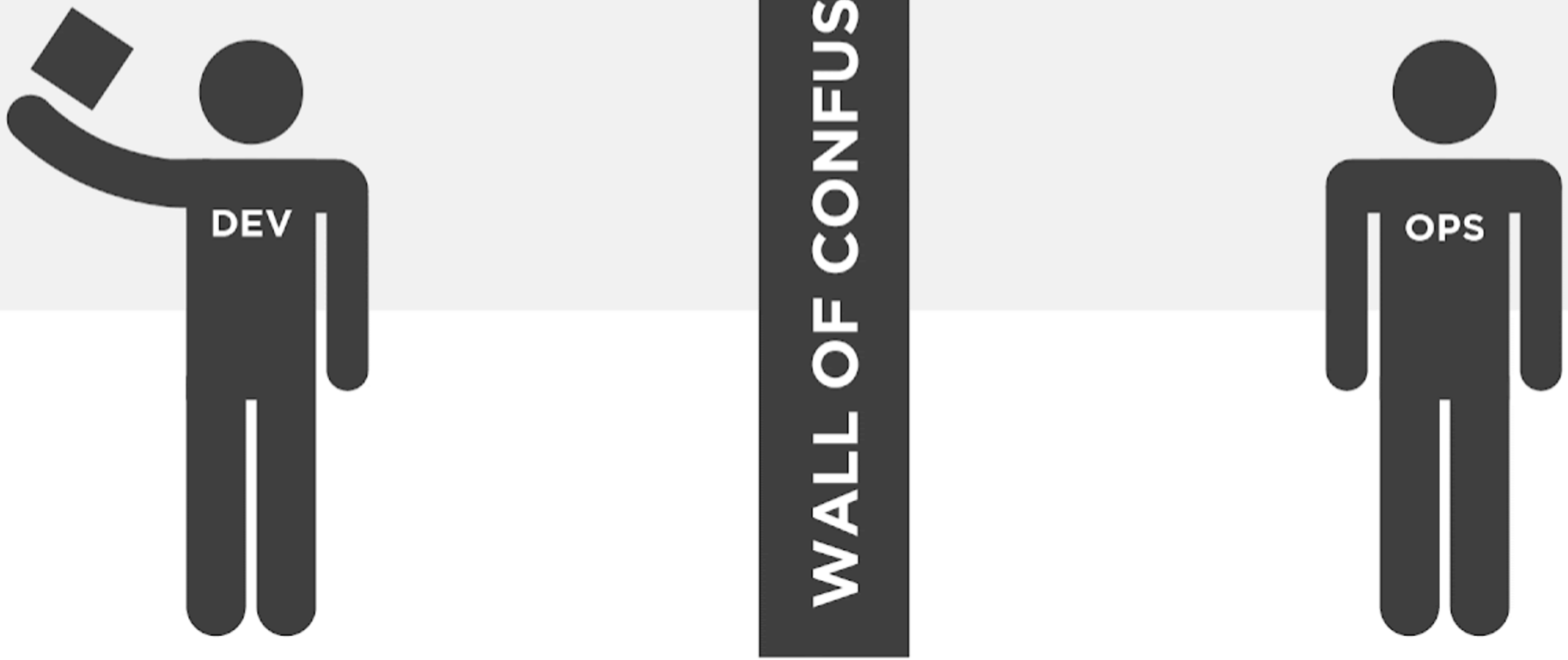

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EXECUTIVE SUMMARY - THE VALUE OF DEVOPS

(An example from a previous Red Hat Open Innovation Labs Residency customer)

Total lead time from idea to first delivery to users	Prioritized bug	Functionality done confirmation	Critical bug fix
Current Way of Working	Current Way of Working	Current Way of Working	Current Way of Working
38 Weeks	23 Weeks	4 Weeks	10 Hours
New Way of Working	New Way of Working	New Way of Working	New Way of Working
7 weeks	3 weeks	1,5 Hours	30 min
Improvement	Improvement	Improvement	Improvement
31 weeks reduction	20 weeks reduction	158 hours reduction	9,5 hours reduction
5,4x faster	7,6x faster	105x faster	20x faster

Source: https://www.slideshare.net/secret/MMXGc9Irg1xMVm

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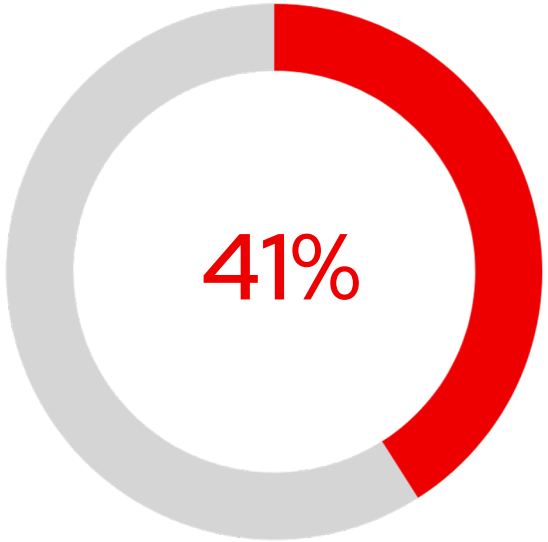
#1 Challenges Encountered in the Digital Journey



Technology

Source: Harvard Business Review Analytic Services, commissioned by Red Hat. Rethinking Digital Transformation: New Data Examines the Culture and Process Change Imperative in 2020. March 2020. (n=690)

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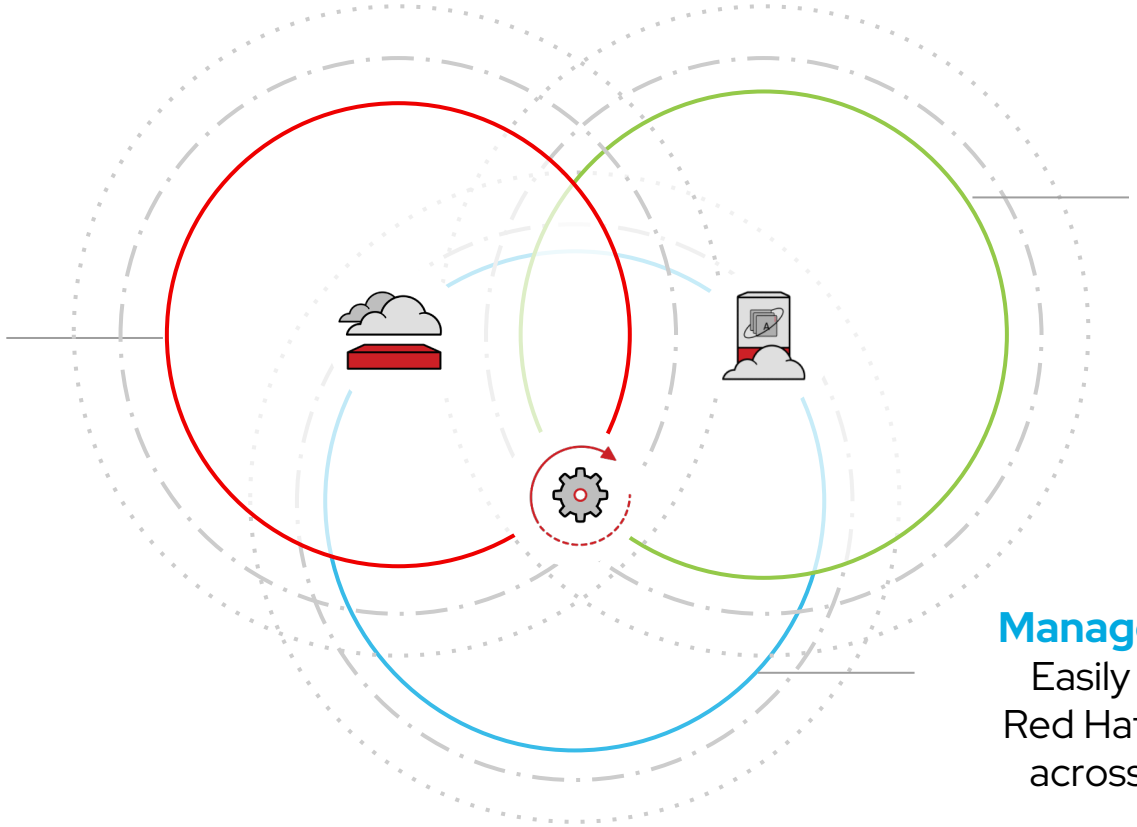
Future architectures are open & agile, hybrid & multicloud

Hybrid cloud infrastructure
Secure, scale, & manage foundations for traditional & cloud workloads across all environments



Cloud-native development
Develop, deploy, & manage any application, on any environment & give developers what they need to innovate

Management & automation
Easily & seamlessly manage Red Hat platforms & automate across hybrid environments

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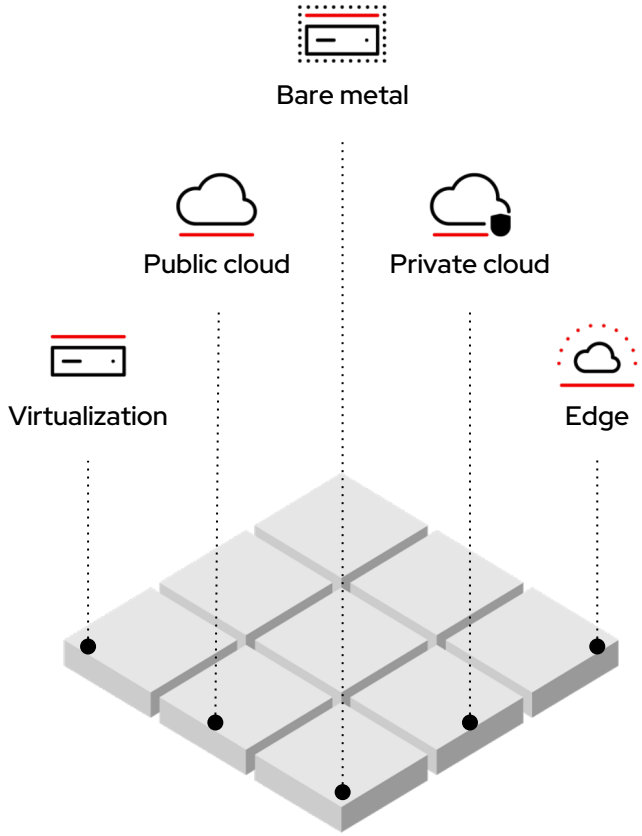
Deploy faster across all footprints with a standard operating environment

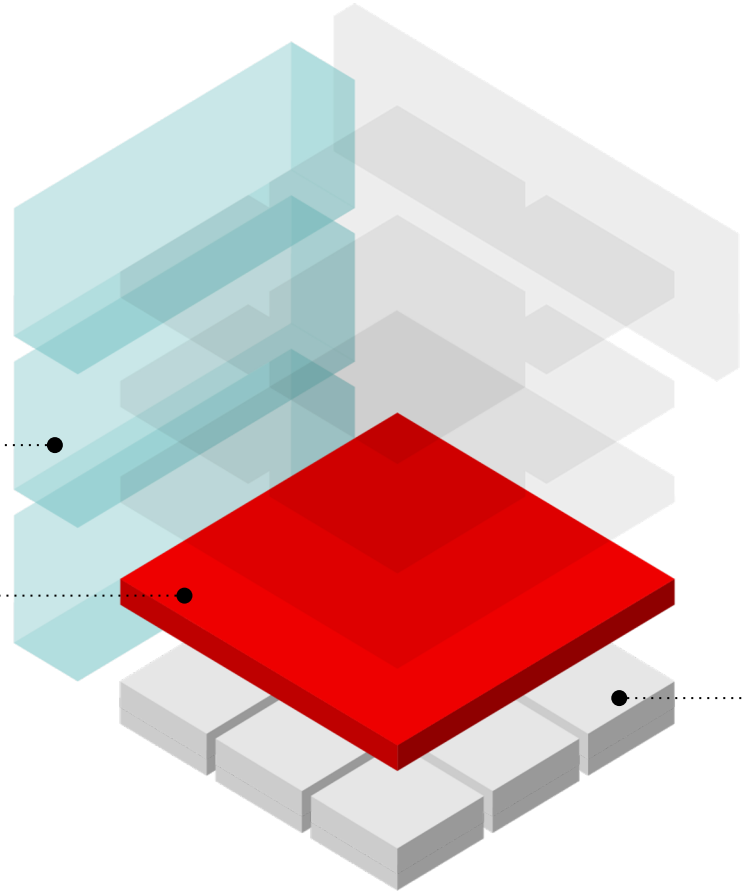


Your cloud or hardware footprint

Red Hat

Deploy faster across all footprints with a standard operating environment

Increase stability & security



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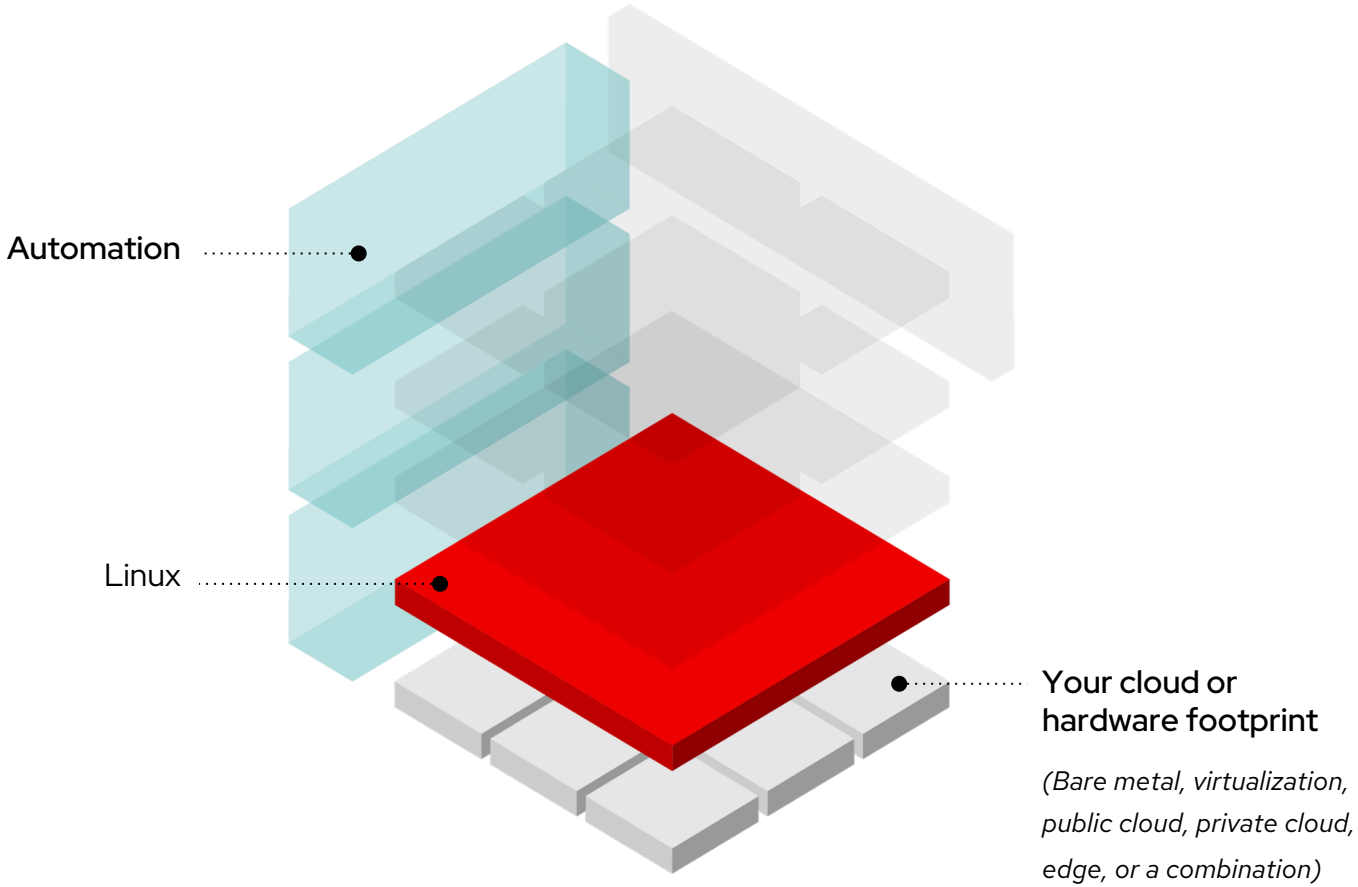
Speed up IT delivery by automating manual processes
Reduce errors and increase stability



Source: "COVID-19 Has Made Automation A Boardroom Imperative". *Forrester*, May 2020.

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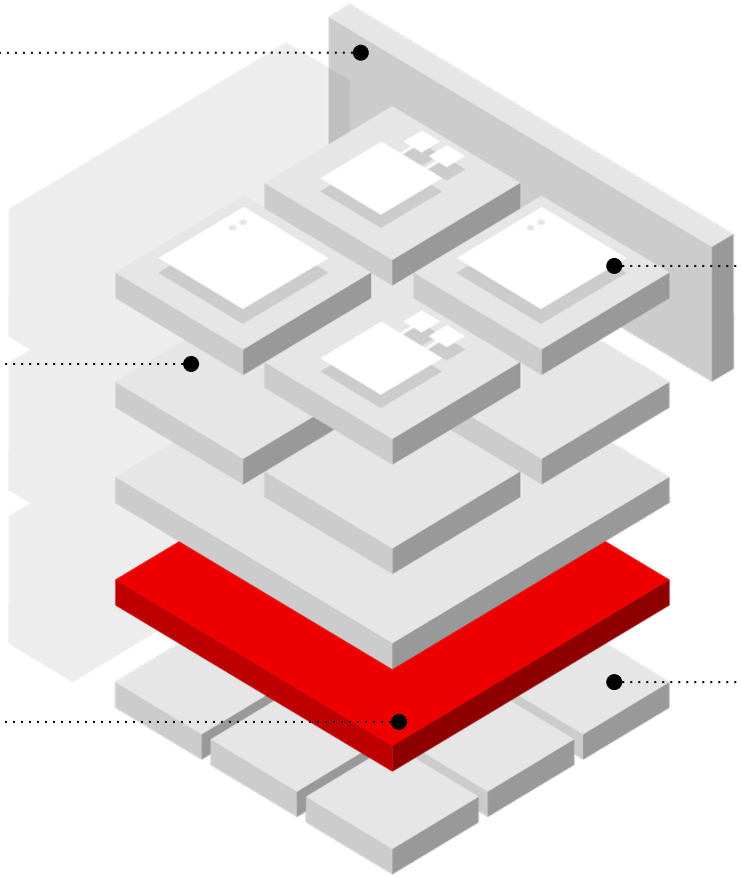
Accelerate traditional application delivery

Developer tools

Application runtimes and services

Data services

Enterprise integration



Linux

Your applications

(Java, ISV and SaaS, apps on bare metal, apps in VMs)

Your cloud or hardware footprint

(Bare metal, virtualization, public cloud, private cloud, edge, or a combination)

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Develop and deploy applications with policy-driven security and stability

Accelerate cloud-native application delivery

Developer tools

Policy-driven management and security for Kubernetes

Application runtimes and services

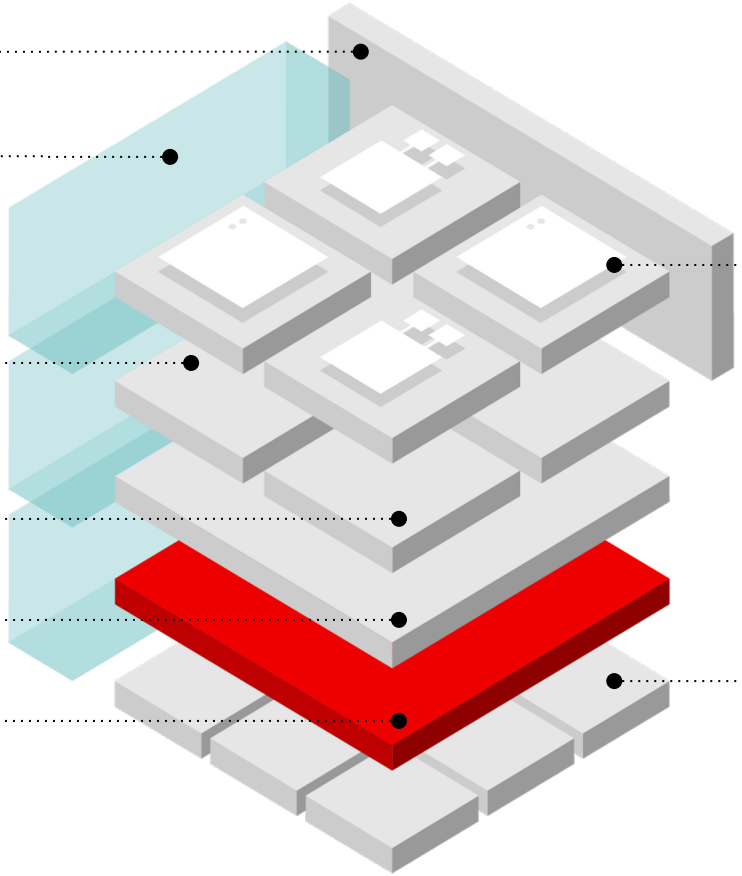
Data services

Enterprise integration

ISV software marketplace
Public cloud services

Kubernetes platform
CI/CD services

Linux



Your applications

(AI/ML, analytics, serverless, Java, ISV and SaaS, cloud-native and microservices, apps on bare metal, apps in VMs, apps in containers)

Your cloud or hardware footprint

(Bare metal, virtualization, public cloud, private cloud, edge, or a combination)

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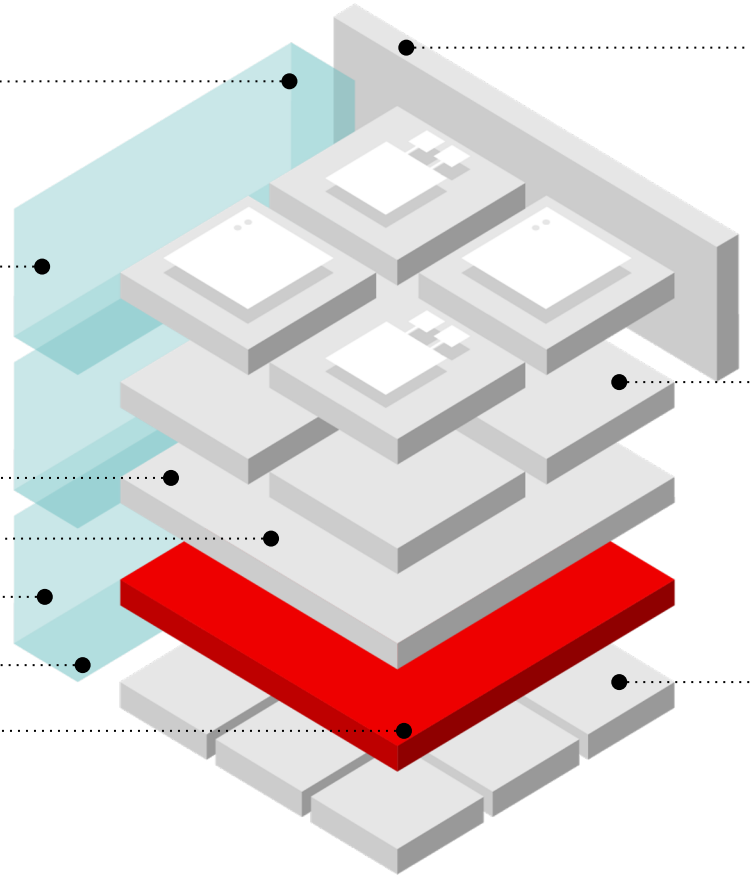
Open hybrid cloud with Red Hat

- Red Hat Ansible Automation Platform
- Red Hat Advanced Cluster Management for Kubernetes
- Red Hat Advanced Cluster Security for Kubernetes
- Red Hat OpenShift Data Foundation
- Red Hat OpenShift
- Red Hat Insights
- Red Hat Smart Management
- Red Hat Enterprise Linux



- Red Hat CodeReady
- Red Hat Integration
- Red Hat Runtimes
- Red Hat Process Automation
- Red Hat Data Services

Your cloud or hardware footprint

(Bare metal, virtualization, public cloud, private cloud, edge, or a combination)

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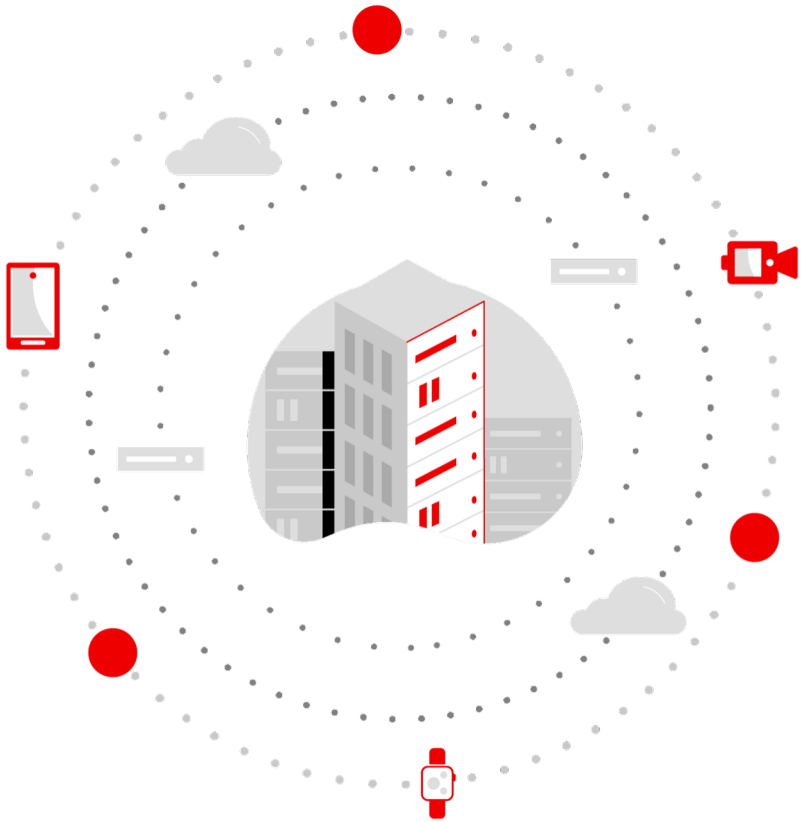

How you build today determines what is possible tomorrow.

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