

The Argument for Continuous Modernization

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Central Illinois RHUG

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Anonymous State

The doomed, 3 month
“Modernization Project”
slated to start in July 2020
and budgeted at \$5m.

Lack of Ongoing Attention

Inability to Withstand or Recover From Change



- ▶ Plans lack either robustness or resilience
- ▶ Rigid scheduling left no room for adaptability
- ▶ Big-bang approach put a lot of eggs in one basket
- ▶ The existing culture was neither accepting of or prepared for change

Damien Eversmann

Technologist and Educator



- ▶ 30+ years working in and with the public sector
 - ▶ Spent time as an instructor, researcher, developer, IT administrator
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What is at the Heart of the Problem?

Big-Bang Modernization Initiatives

Attributes of current “modernization initiatives”:

- ▶ Time-boxed with a discrete start and completion date (usually once every 5 or 10 years)
- ▶ Marked by large budget allocations often attached to taxation or tuition increases
- ▶ Often a “all hands on deck” type of initiative due to the sheer volume of work

Problems posed by this method:

- ▶ The first day after the completion date, systems begin to fall off of modern (and continue to for 5 to 10 years)
- ▶ Large capital expenditures draw a lot of negative attention and a lot of pushback from constituents (citizens or students)
- ▶ Most other initiatives suffer during the “modernization initiative”

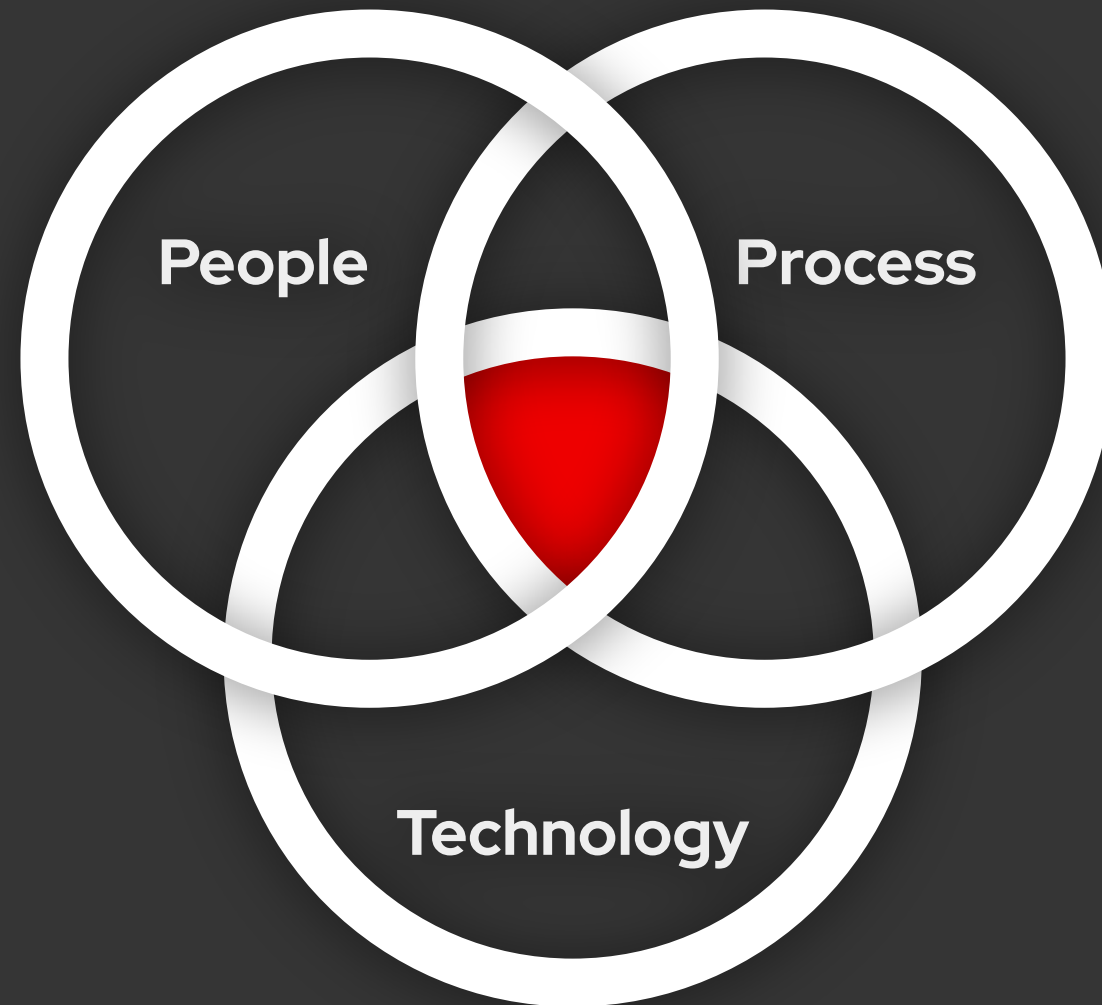
Continuous Modernization

Foster a Culture of Change

Culture is the
widening of the mind
and of the spirit.

- ▶ Jewaharlal Nehru,
Indian Nationalist

Continuous Modernization is at the Middle of Everything



Make Change the Norm

... Not the Rule



Studies show dynamic norms are stranger than static ones

Speaking to the benefits of change as opposed to dictating change are more successful.

Changing expectations leads to changing norms

When management delivers a message of acceptance of change, employees feel more empowered to embrace it.

🕒 This is an excellent opportunity to enable and embrace non-traditional talent.

Resilience is NOT the Ultimate Goal

Robustness for the win

Resilience

The capability of a strained body to recover its size and shape after deformation caused especially by compressive stress

ie - Branches growing back after a storm

Robustness

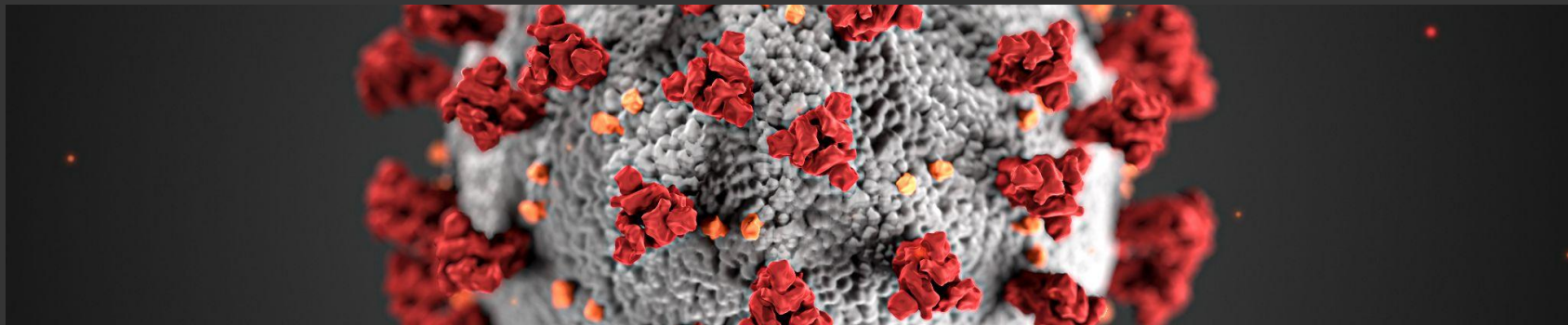
Capable of performing without failure under a wide range of conditions

ie - Branches flexing during a storm

Constant Change Leads to Preparedness

Acceptance of planned change leads to acceptance of unplanned change

If a community has embraced a culture of constant change, then new and unexpected changes are also taken in stride. Be ready for the next pseudo-catastrophic curve ball.



Objectivity Over Subjectivity

Approach it all like you are looking through the lens of a camera

Objectivity enables changes and decisions to be made without passion or prejudice, free from interpretation or bias.



Embrace Disruption

It not so bad if you like change



In 1995, academic and business consultant Clayton Christensen, coined the term market disruptor to mean: “any person, product, or idea that radically and permanently changes the way an industry operates”.

Why is that so bad?

✓ Embracing disruption is a good way to attract and retain good talent

AppDev Got Here First

If it hurts, do it more
frequently, and bring
the pain forward.

- ▶ Jez Humble,
DevOps Visionary

Continuous Integration/Continuous Deployment

The OG Continuous in IT



"Continuous Delivery is a software development discipline where you build software in such a way that the software can be released to production at any time."

- Martin Fowler, Software Development Pundit

CI/CD is central to Agile Software Development

There's a Manifesto for That – The Agile Manifesto

Streamlining Software Development Since 2001



Iterative and Incremental
Brief iterations or sprints completed by a cross-functional team with a demonstrable working product at each completion.



Efficient Communication
Face-to-face communication is preferred and representatives from all facets **including the stakeholder** are involved.



Short Feedback Loops
Daily “stand-ups” to make sure all issues are handled as soon as possible.



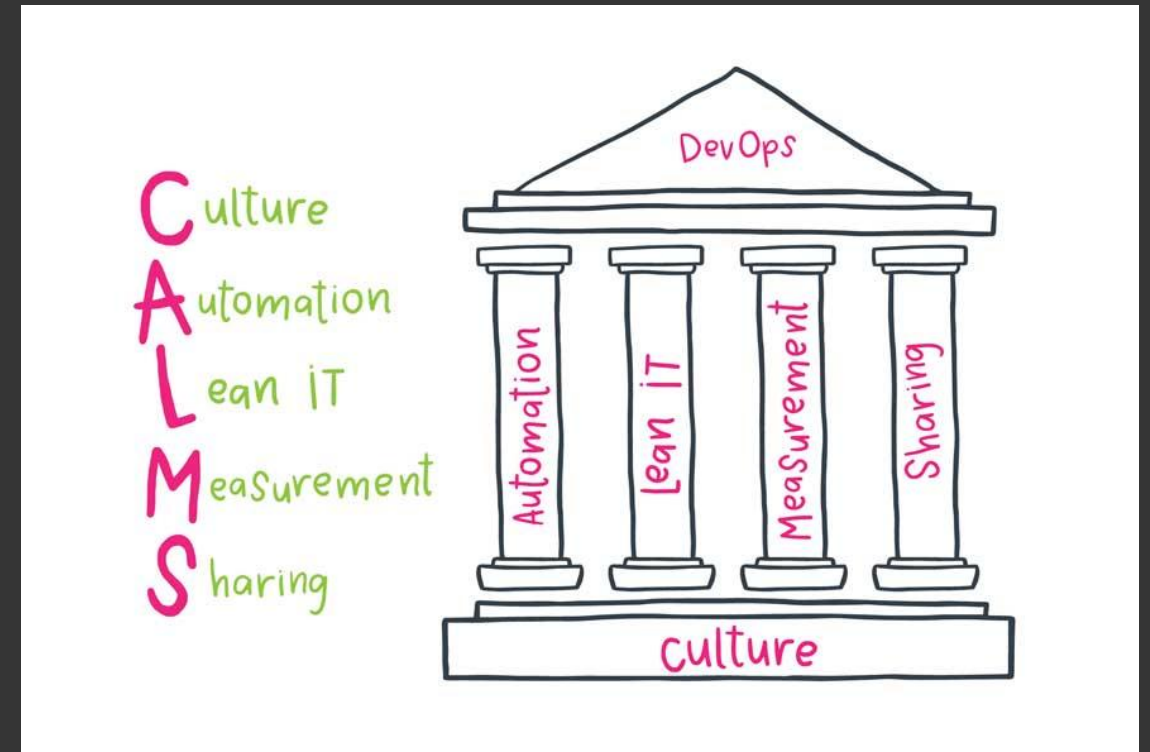
Quality over Quantity
Many specific tools and techniques are used to ensure code quality.

Up a Level

Sharing Leads to Collaboration, Collaboration Leads to DevOps, and DevOps Leads to Enlightenment

DevOps is the all encompassing culture that contains Agile and CI/CD:

- ▶ **Culture** - the foundation upon which everything is built
- ▶ **Automation** - remove the "toil"
- ▶ **Lean** - smoothly transition work between "work centres"
- ▶ **Measurement** - measure all the things
- ▶ **Sharing** - focus on breaking down silos, sharing knowledge and best practices



Open Source

Red Hat's Home Field Advantage



We believe that our open culture nurtures collaboration and empowers people to bring their best ideas—and their best selves—to work.

- ▶ Rewarding the best ideas, no matter where they come from.
- ▶ "Open" truly is our compass.
- ▶ Open to change—yesterday, today, and tomorrow

✓ Open is key in attracting and retaining good talent

🔗 Open fosters and enables non-traditional talent

Comfort with Ambiguity

Inherent in DevOps



Because Agile necessarily means that the path is only known a few weeks into the future, practitioners of DevOps develop a freeing comfort with ambiguity.

“I know what I’m doing now and that’s all that’s important.”

Universal Benefits of Continuous Modernization

Is everybody happy?

- ▶ Ted Lewis,
“Mr. Entertainment”,
1920s Big Band
Leader

Shift Right on the Reactive → Proactive Spectrum

Fix Problems Before They Happen

Reactive

occurring as a result of stress or emotional upset

Proactive

acting in anticipation of future problems, needs, or changes

Secure By Default

Hello DevSecOps World



“High-performing teams were more likely to incorporate information security into the delivery process. Their infosec personnel provided feedback at every step of the software delivery lifecycle, from design through demos to helping out with test automation. However, they did so in a way that did not slow down the development process...”

- ▶ “Accelerate: The Science of Lean Software and DevOps: Building and Scaling High Performing Technology Organizations”
by Nicole Forsgren PhD, Jez Humble, Gene Kim

Foster Agility and Innovation

Start a Revolution of Good Ideas



One of the benefits of making change the norm is that people stop being afraid to suggest change. This opens the road to continuous improvement.

✓ Being known as an innovator is a great way to attract and retain talent.

Unlink from the Status Quo

Go ahead, be a renegade

The calling card of the status quo is technical debt. Break away from the pack and pay down the debt early.

- ✓ The Status Quo doesn't retain good employees
- 🕒 Non-traditional talent is often eschewed by the status quo



How Do I Start?

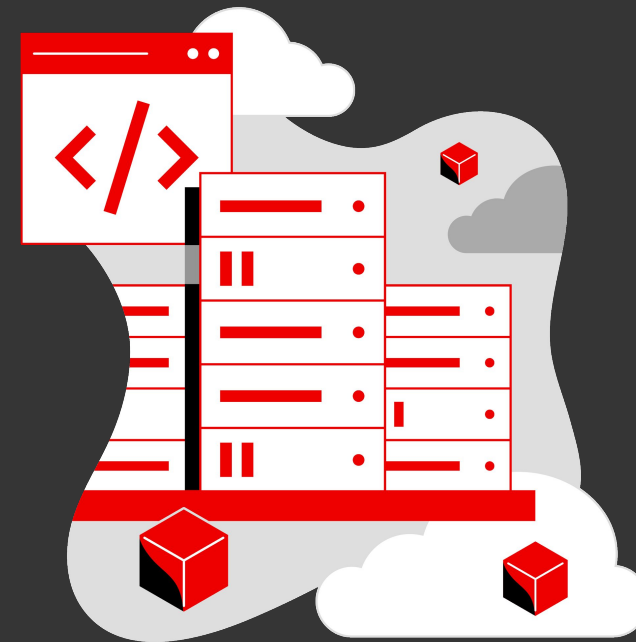
Where do we go
from here? Which is
the way that's clear?

- ▶ David Essex,
"Rock On"

Standard Operating Environment (SOE)

Platform and Tooling

1. Simplify to improve efficiency and productivity
2. Document continuously
3. Balance standardization with flexibility
4. Automate your infrastructure
5. Embrace new technology as appropriate
6. Contain configuration drift
7. Concentrate on services, not servers
8. Scale dynamically to meet changing demands
9. Be ready for failures
10. Boost security with a layered approach





Red Hat Enterprise Linux



Accelerate innovation

Further innovation and modernization on a platform built for hybrid cloud development and operations team.

More easily build, deploy, scale and manage cloud-native apps across the open hybrid cloud with reduced friction.



Streamline IT infrastructure

Increase efficiency and streamline management at scale with a consistent and repeatable platform for all deployments, whether on-premise, virtualized, in the cloud, or at the edge.



Establish a consistent security foundation

Build a stable, consistent, and trustworthy platform that sets the foundation for a strong security posture on which to scale apps and roll out emerging technologies across the hybrid cloud.

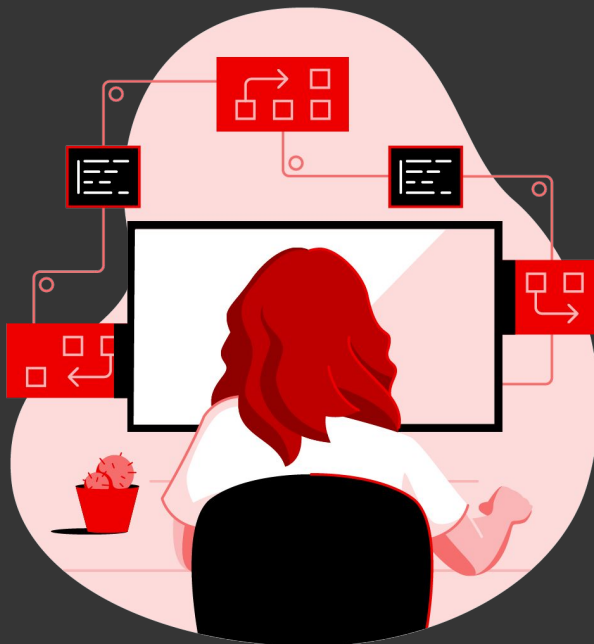


Operate with complete confidence

Use a reliable, cloud-ready platform with a long life cycle, an extensive software and hardware partner ecosystem, and integrated tools for dev, management and security.

Automation

Within and Between Groups and Silos



Problems solved with automation:

- ▶ Manual processes pose security risks, increase costs, and create inefficiencies.
- ▶ The lack of automation standards, governance, and management strategy across disparate teams and tools makes it difficult to scale best practices.
- ▶ Reduction in IT budgets presents challenges as companies still must move towards maximizing efficiency with minimal resources, making it difficult to drive innovation.



Red Hat Ansible Automation Platform



Automate for Velocity

To move beyond incremental efficiencies, enterprises must be able to create and share automation easily across teams, then manage everything efficiently. That means:

- ▶ Rapid development and deployment.
- ▶ Simplified operations and analytics.
- ▶ Consistent end-to-end user experiences.



Automate for Collaboration

Give creators, developers, and operators the tools they need to orchestrate a collaborative and productive automation practice. An automation platform should offer:

- ▶ Automation that is easily created, shared, and managed across the organization.
- ▶ Facilitation of a customer-centric focus.
- ▶ The security to run trusted automation when and where IT teams need it.



Automate for Growth

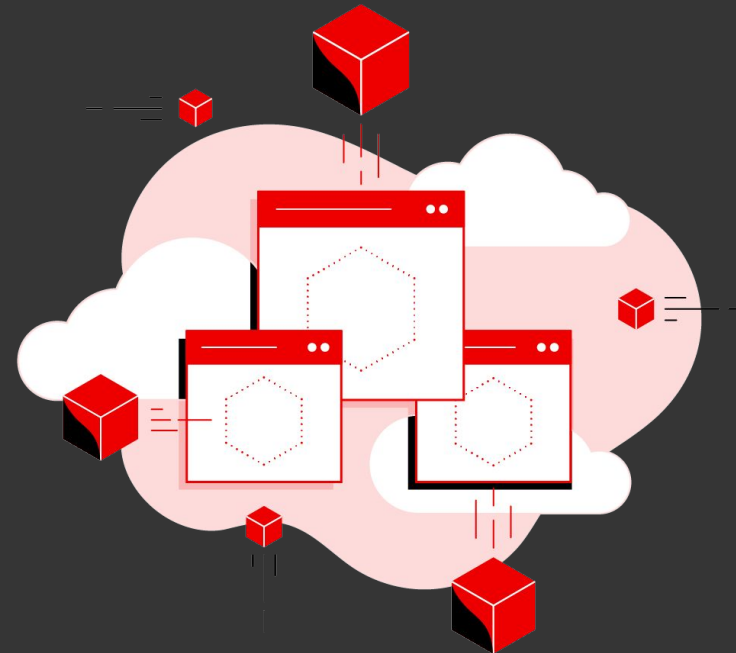
Deliver an automation experience that supports scalable innovation from the datacenter, across clouds, and to the edge. An automation platform should:

- ▶ Dynamically scale automation volume reliably and consistently as demand requires.
- ▶ Provide a consistent automation experience everywhere across the organization.
- ▶ Integrate with existing organizational processes and governance as they scale.

Modularity

Containerize All the Things

- ▶ Improve digital customer experience
- ▶ Increase reliability
- ▶ Reduce costs
- ▶ Lower security risks (ex. cyber attacks)
- ▶ Bring new products and services to market, faster





Red Hat OpenShift Container Platform



▶ Integrated platform includes container host, Kubernetes, and application lifecycle management using your choice of infrastructure.



▶ Operators provide an agile DevOps workflow.



▶ Security-focused, validated container content and services from a wide partner ecosystem.



▶ Faster application development cycles and more frequent software deployments.



▶ Simple installation and upgrades, even in air-gapped environments.



▶ Application portability with lower operational cost across hybrid cloud, multicloud, and edge footprints.



▶ Consistent development experience across the application lifecycle.



Continuous Modernization is not a single, big-bang achievement. Rather, it is a journey taken one step at a time. Start today building your backlog of things needing your attention, and then check the first one off your list!

Thank you

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