Red Hat

Transformation takes practice

Deliver with increased speed and innovation using open ways of working

Introduction

It is a question asked time and again by business leaders: Why are so many digital transformation efforts failing?

In this e-book, we'll explore how open transformation—the process of probing, sensing, and responding in a collaborative, continuous cycle of discovery and delivery—leads to more meaningful outcomes in software development, product innovation, and more.

CHAPTER 1

The Ferrari and the rainforest

How organizations are complex sociotechnical systems and why it matters

Leaders in organizations across the private and public sector now widely accept that digital transformation is imperative to maintain relevancy and stay competitive in the new economy. Yet recent research by Harvard Business Review shows that 80% of business leaders say their digital transformation efforts are ineffective.[1] What is behind this failure?

The reasons for failure are as expansive as the topic of digital transformation itself, including:

- Institutional complacency.
- A lack of executive buy-in and proactive sponsorship.
- Competing ideas of success.
- Poor communication surrounding the initiative.
- Declaring victory too soon.
- Inability to scale digital innovation beyond pilot projects.

While any combination of these factors can lead to an unsuccessful initiative, there is a deeper and more subtle dynamic at play that often gets overlooked: **the failure to recognize large organizations for what they are—a complex sociotechnical system.**

For organizations pursuing digital transformation, one key step is recognizing the difference between complicated and complex systems. Think of a Ferrari. It is made of thousands of components, but their sum and how each interacts with the other to create the whole are fundamentally knowable. To diagnose and repair a malfunctioning Ferrari requires you to sense, analyze, and respond. A Ferrari is a complicated system.

Now think of a rainforest. It is a dynamic ecosystem with billions of interacting organisms and elements. We understand those dynamics at some level, but they are essentially unpredictable, with cause and effect only evident in hindsight. The problems threatening rainforests would be best addressed through *probing, sensing, and responding*. In other words, it requires continuous cycles of hypothesis, experimentation, and measurement to arrive at desired outcomes. A rainforest is a complex system.

Today's large organization is a rainforest, not a Ferrari. It is a complex sociotechnical system with many dynamics—both human and technical—at play that resist quantification. This distinction is important because many enterprise leaders *assume* organizations are complicated systems in which analysis is key to arriving at the best solution. But in complex systems, probing and sensing, or *hypothesis and experimentation*, in rapid and iterative cycles, are more effective for identifying the best solutions and ideas.

> In complex sociotechnical systems, it is groups of people, not individuals or managers, who can create innovative change. These groups must tune the system through a perpetual cycle of probing, sensing, and responding to outcomes."
>
> —Mike Walker, Global Director, Red Hat Open Innovation Labs

To reach digital transformation goals, you must fully appreciate and counteract the complex tensions that exist between development, operations, architecture, product management, and leadership while still keeping them in balance. And you need to take a hypothesis-driven, experimental approach to deliver positive outcomes and real change. **The Mobius loop and open practices can help.**

[1] Harvard Business Review Analytic Services, "Rethinking Digital Transformation," March 2020.

CHAPTER 2

Fruitful loops

How open practices and the Mobius loop yield better business outcomes

For Red Hat and many of its customers, the pursuit of open transformation is made tangible with the Open Practice Library. A community-driven collection of exercises for making incremental progress along the product delivery cycle, open practices help cross-functional teams come together in any situation to extract the problem statement, define desired business outcomes, and work toward metrics-based goals.

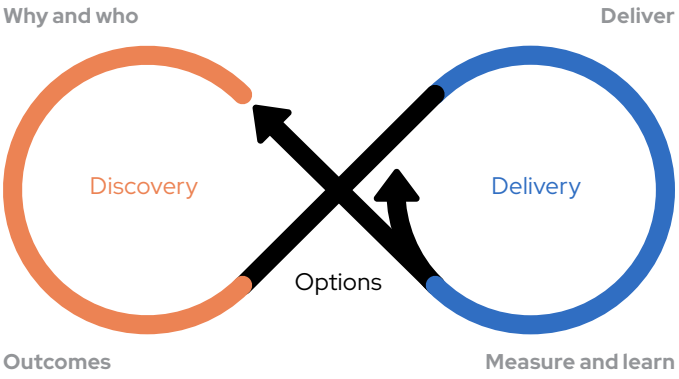
In essence, it is a community-driven collection of practices grounded in a philosophy that prioritizes hypothesis and experimentation—or simply trying things and measuring results. The Open Practice Library is a natural way to achieve real outcomes in a complex sociotechnical system.

Combined with some key technologies, open practices can be applied to break down organizational barriers, augment or migrate away from legacy systems, teach DevOps practices, or reduce technical debt, among other goals.

All open practices map onto different sections of the Mobius loop—an overarching navigator for continuously delivering outcomes that are community driven and informed by a variety of frameworks for product delivery, software development, and organizational change.

The Mobius loop is divided into three primary phases: discovery, options, and delivery.

Continuously delivering outcomes with the Mobius loop



Key questions are asked and actions taken within each phase to define purpose.

Why and who
What is the problem to solve or idea to pursue? Who are the target customers and what do they need?

Outcomes
How will we measure the impact?

Options
How will we achieve the outcomes?

Deliver
Run experiments and deliver to customers.

Measure and learn
Measure the impact and learn what we should do next.

The idea is that this process is continuous, and teams can do multiple runs around the delivery side of the loop and criss-cross around both as needed. Has one cycle of delivery not led to a satisfying solution for stakeholders or the customer? Repeat the cycle. Has a step in the delivery phase led you to reexamine initial assumptions? Perhaps you need to cross back over to the discovery loop to revise your goals and hypothesis.

Open practices are overlaid on the loop. Each one can be plotted on a point in the loop as a discrete exercise to make incremental progress toward goals. Think empathy mapping in the discovery phase to get a more complete understanding of your customer's motives, emotions, and needs, or event storming to model a better business process in the delivery phase.

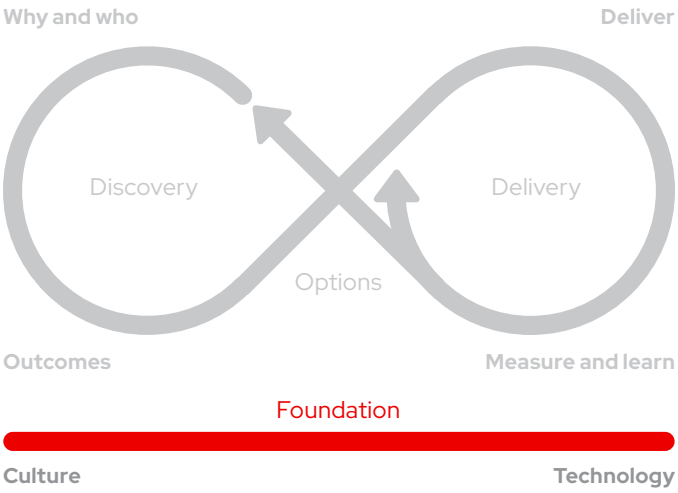
Open practices:

- Are adaptive, not prescriptive. Any organization is empowered to find the right mix that works for them.
- Offer ways to address the natural tensions between competing parts of the organization—development, operations, product, leadership, and others.
- Are grounded in a repetition that leads to mastery.
- Show organizations new ways of working that quickly become preferred.
- Ultimately make digital transformation a journey people want to take.

Adding the foundation

Another important element of Red Hat's contribution to the Mobius loop is what we call the foundation—the culture and the technology components we believe are critical for underwriting the Mobius loop approach.

Red Hat was built on the principles of open organization. It is the idea that open technologies and open culture logically bond as two complementary elements that are essentially indistinguishable from each other, as demonstrated from real-world examples of organizations practicing rapid innovation. Open practices are a natural extension of this philosophy. Simply put, they provide the tools for putting open innovation into practice.



The five culture components of an open organization

Transparency – Data and other materials are easily accessible to internal and external participants. Work is transparent in that anyone can monitor, assess, and potentially revise projects.

Inclusivity – Diverse points of view are welcome and mechanisms are in place to ensure they are heard.

Adaptability – Flexibility, resiliency, and embracing both positive and negative feedback loops are key.

Collaboration – Joint work is highly valued because it produces more effective and sustainable outcomes.

Community – Shared values and purpose guide participation and help determine boundaries and conditions of that participation.

The Open Practice Library is a community-driven repository of best practices and tools based on an outcome delivery navigator called the Mobius loop.

CHAPTER 3

Stories of open transformation

How Red Hat helps organizations transform with open practices

The benefit of open practices and the Mobius loop framework is collaborative, persistent progress toward the realization of digital transformation goals. We see this progress on a regular basis in Red Hat® Open Innovation Labs and Red Hat Services engagements.

In these engagements, Red Hat experts lead an organization's stakeholders through a sequence of open practices customized to the context of their business and objectives. We draw from deep experience with open practices to help teams formulate hypotheses, experiment, probe, sense, respond, and arrive at fruitful outcomes, whether it is new products and features delivered, new processes followed, or new technologies adopted.

We know the practices that work for various challenges, and we help organizations quickly navigate to the practices that are relevant to them. We also put open practices in the larger context of all current ecosystem tools—agile, lean, design thinking, etc.—to help organizations find the mix that works for them through experimentation. The Open Practice Library is highly malleable, allowing organizations to use it in their own way, reshape it to build their own version, and generally make it their own while contributing back insights to the community.

A typical Red Hat Services engagement implements open practices and the Mobius loop approach in parallel with the deployment of open technologies—mutually reinforcing and catalyzing each other in a holistic new model for achieving outcomes.

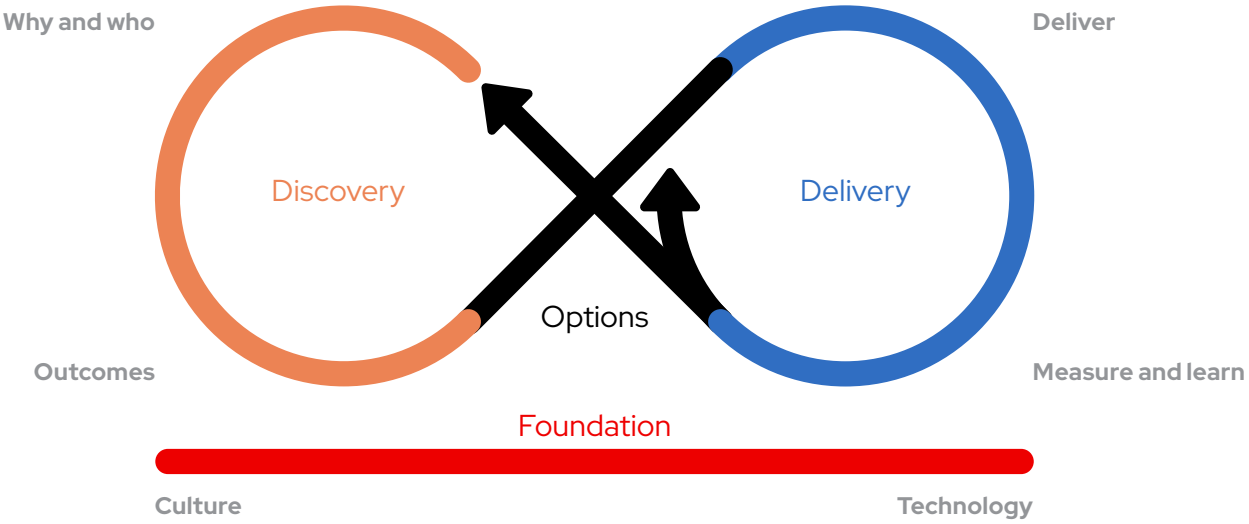
The following case studies detail transformation stories realized through open practices and Red Hat Services.

Case study: Airbus builds DevOps skills

Customer challenge – A leader in the global aerospace sector, Airbus[2] wanted to transform its UK solutions to offer services on any type of platform and provide on-demand access to software-defined infrastructure.

Solution – Airbus participated in a Red Hat Open Innovation Labs engagement to build a path to faster application delivery with DevOps practices. During the six-week residency, Airbus's teams worked closely with Red Hat consultants to learn about building cloud-native applications following DevOps practices. The team also learned new, open ways of working that will help them continue to build efficiencies to deliver successful solutions across their business.

Results – The organization used Red Hat OpenShift® and other open technologies in combination with practices from the Open Practice Library to build a Platform-as-a-Service (PaaS) to support key business capabilities. They gained hands-on experience for creating cloud-native applications in-house following DevOps and cloud-native design practices, leading to significantly faster service delivery and ongoing expansion of the platform.



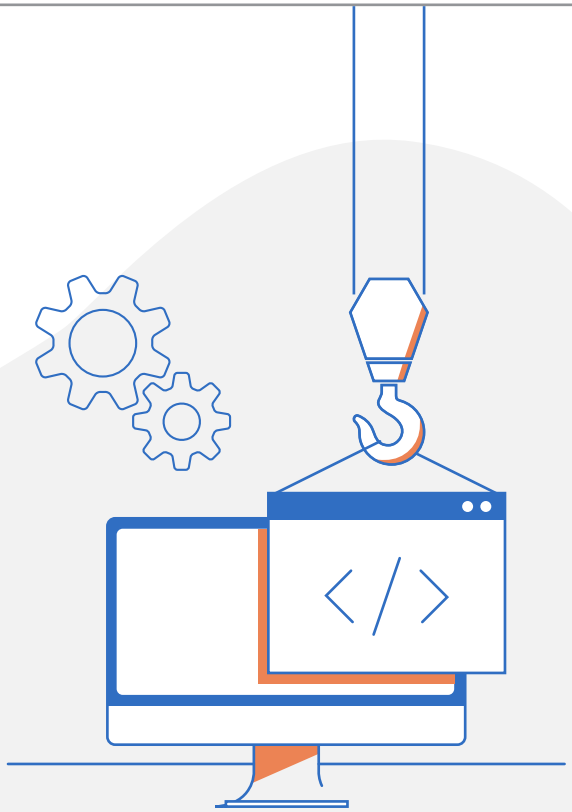
Airbus: open practices used[3]

1. Impact mapping – Make sure that the deliverables achieve the right outcomes for application users.
2. **Social contract** – Start the project with clearly defined team dynamics and expectations.
3. Priority sliders – Enable alignment and consensus on areas of focus and help prioritize upcoming activities.
4. Target outcomes – Articulate the desired outcomes (learn continuous integration/continuous delivery [CI/CD], adopt DevOps, build an app, and provide a catalyst for wider adoption of open culture).
5. Event storming – Create a physical diagram of the business process the team is building to visualize the application in the context of this project using an emergent microservices architecture.
6. Value slicing – Ensure they are delivering the highest value first and that their work tracks back to the goals set by the business.
7. **Product backlog** – Evolve continually and update as the team works through delivery.
8. **Definition of ready and definition of done** – Establish consensus as to when a feature is ready to be developed and when it is done.
9. Weekly sprint planning – Set priorities for the short term, tackling the product backlog and pivoting when needed.
10. **Mob programming** – Introduce working in Red Hat OpenShift so that the entire team can learn the software together.
11. Retrospectives – Identify action items for the next sprint, assess what is working and what isn't, and most importantly, determine what needs to change.
12. Weekly showcase - Share the achievements of the team (working software) with all interested stakeholders and gather their feedback.
13. Metrics-based process mapping – Understand the pain points and bottlenecks in the old process.

[2] Red Hat case study, "Airbus uses DevOps to build platform with Open Innovation Labs."
[3] These represent a limited selection of the total open practices executed in the engagement.

I highly recommend the Red Hat Open Innovation Labs experience. It has really helped our teams make the change we sought: adopting OpenShift, DevOps, and new ways of working based on lean and open practices."[2]

—Saul Davies, Head of Product Portfolio Intelligence, UK, Airbus



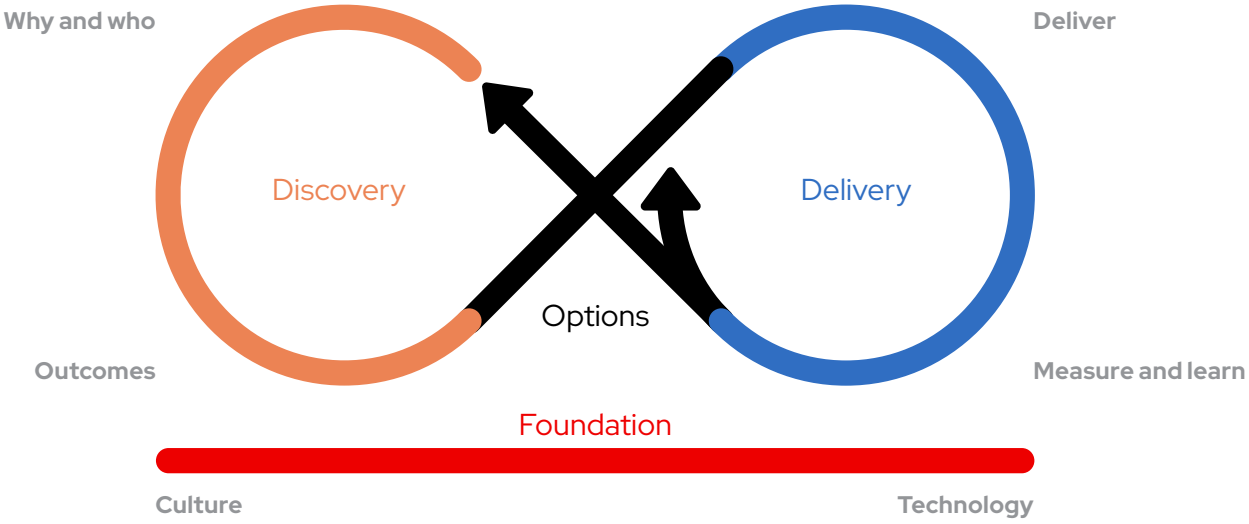
Case study: ANZ Bank New Zealand prepares for automation

Customer challenge – ANZ Bank New Zealand[4] is the country's largest financial services group, providing banking, asset finance, investment, and other services. Its network team wanted to transition from routine, repeatable network operations tasks to an approach focused on automation and site reliability engineering. The bank's teams needed guidance on adopting agile development approaches and Ansible® community-developed automation technology.

Solution – ANZ Bank engaged Red Hat Open Innovation Labs for an engagement focused on building network automation and collaboration skills. During their time together, ANZ Bank teams learned about automation with Ansible and agile development practices, including CI/CD. Additionally, the bank's participants explored new ways to connect with other teams for greater efficiency.

Results – The ANZ Bank team established a foundation for a new team culture centered on collaborative planning and execution. The team built automation skills from Red Hat training on network automation and agile development approaches, and they enhanced their automation strategy by developing Ansible Playbooks within a datacenter network infrastructure. These accomplishments led to a reduction in the time for a key provisioning process—from 6 days to 5 minutes with automation, a 99.24% time savings.

[4] Red Hat case study, "Financial group prepares for network automation with immersive IT training."



ANZ Bank: open practices used[5]

1. **Social contract** – Start the project with clearly defined team dynamics and expectations.
2. **Target outcomes** – Articulate the desired outcomes (learn CI/CD, adopt DevOps, build an app, and provide a catalyst for wider adoption of open culture).
3. **Priority sliders** – Enable alignment and consensus on areas of focus and help prioritize upcoming activities.
4. **Risk and issue management** – Identify potential problems that might occur during the course of your project and identify ways of avoiding them.
5. **Metrics-based process mapping** – Understand the pain points and bottlenecks in the old process.
6. **Value slicing** – Ensure they are delivering the highest value first and that their work tracks back to the goals set by the business.
7. **Product backlog** – Evolve continually and update as the team works through delivery.
8. **Definition of ready and definition of done** – Establish consensus as to when a feature is ready to be developed and when it is done.
9. **Manage flow and limit work in progress** - Optimize work items instead of people by visualizing work, tracking through a pipeline, identifying blockages, and thinking about how to modify and improve.
10. **Daily stand up** – Meet for a short, time-boxed synchronization of team activities in a cadence determined by the team.
11. **Relative sizing** – Facilitate conversation and gain shared alignment on sizing of complexity and value of upcoming stories.
12. **Ping-pong pair programming** – Work in pairs to navigate the solutions together using the test-driven development method.
13. **Mob programming** – Introduce working as one team so that the entire team can learn and find solutions together.
14. **Test automation** – Shorten the feedback loop and increase the quality of code.
15. **Burndown** – Visualize work left to do within a specified time period.
16. **Showcase** – Demonstrate the outputs and outcomes of a team's work over a recent time period.
17. **Retrospectives** – Identify action items for the next sprint, assess what is working and what isn't, and most importantly, determine what needs to change.
18. **Everything-as-code** – Save everything as code—configuration, infrastructure, and pipelines.
19. **Offboarding** – Practice destroying and recreating the applications.

[5] These represent a limited selection of the total open practices executed in the engagement.

> We established strong technical and agile foundations to better tackle challenges. We moved from ticket handling to thinking about automation first, demonstrating inventive thinking in network automation development and infrastructure. Red Hat Open Innovation Labs gave us the tools to successfully transform with inspiration and confidence." [4]
>
> —Dave Wasley, Technology Area Lead Infrastructure, ANZ Bank New Zealand

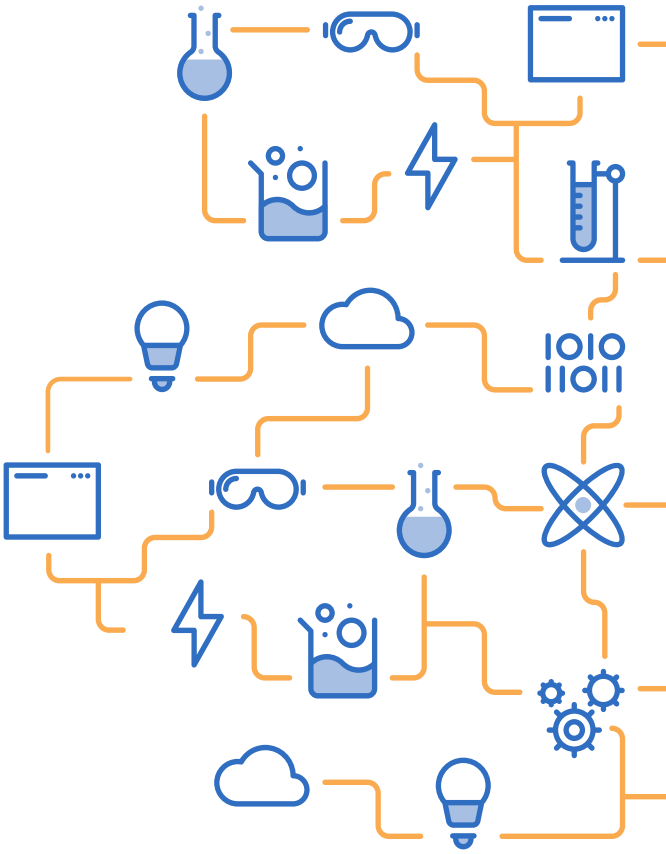
Put transformation into practice with Red Hat

Aside from acting as a catalyst for and contributor to open practices, Red Hat works with IT, development, and product teams every day to combine them with open technologies and an open mindset to realize business goals and make transformation real.

We can help you identify the practices that are most applicable to your organization, customize them to your needs, and implement them through close collaboration with our experts.

Visit the Open Practice Library to explore the growing repository of community-sourced practices and start experimenting with your teams.

Learn more about Red Hat Open Innovation Labs and connect with a Red Hatter to explore how you can get the most value from open practices and realize your digital transformation the open way.



Copyright © 2020 Red Hat, Inc. Red Hat, Red Hat Enterprise, the Red Hat logo, OpenShift, and Ansible are trademarks or registered trademarks of Red Hat, Inc. or its subsidiaries in the United States and other countries.