Red Hat

Teaching an elephant to dance
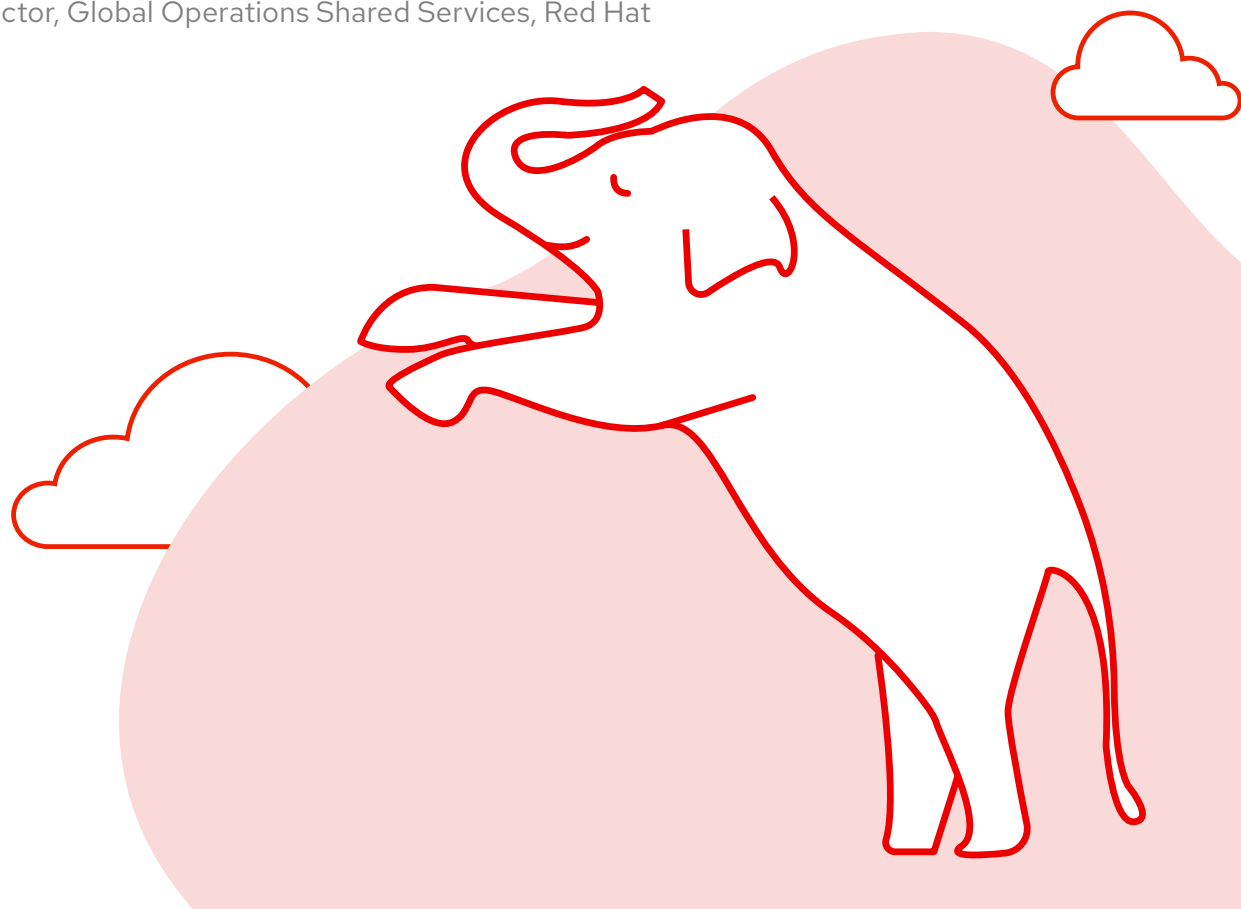
Executive summary

Intentional evolution across teams, processes, and applications

Burr Sutter, Director of Developer Experience, Red Hat

Deon Ballard, Portfolio Product Marketing Manager, Red Hat

Marty Wesley, Portfolio Product Marketing Director, Red Hat

Mike Randall, Director, Global Operations Shared Services, Red Hat

Introduction
The elephant in the room

Digital transformation represents a strategic change for businesses. It focuses on rapidly changing core services to meet new demands, but there is no commonly accepted set of changes an organization must undertake to digitally transform. The term is sometimes used to mean adopting new architectures, like containers and microservices, or new processes, like DevOps. However, digital transformation isn't a thing that you can get—it is something that every organization has to define uniquely for itself.

The elephant in the room is your organization's current technical landscape. While every organization would love to work in a modern technical environment powered by microservices and DevOps, most organizations have layers of infrastructure and hierarchy to rebuild. For these businesses, the challenge is teaching their current elephant to dance like a nimble ballerina.

There is no single architectural pattern or technology platform that works to digitally transform organizations. Those that are best at digital transformation are the ones that have the clearest understanding of their own goals and who look to identify and then implement the changes needed to achieve those goals.

For example:

- Argentina's Ministry of Health integrates medical data for more than 2 million patients across 17 provinces, giving them not only scale, but the responsiveness to meet a 1,200% increase in transaction volume.

- Ford Motor Company shifted to DevOps processes with a continuous integration/continuous delivery (CI/CD) workflow, leading to improved productivity with standardized development environment and self-service provisioning.

- Via Varejo used open practices and established a skilled team to reduce the cost and effort of maintaining their Sale Simulator app, while adopting a more collaborative, innovative development approach to deliver useful, timely solutions.

- Alliance Bank fosters a culture of agile collaboration and rapid innovation, leading teams to reconfigure redundant processes and evaluate physical space in branches. The team's efforts reduced account opening time by 70%, increased the availability of staff to customers by 75%, and opened new community spaces in their branches, all while reducing operating costs.

Each of these enterprises worked with different team structures, processes, applications, and architectures. What made them successful was they started with assessments of their organizations, teams, current technical debt, and business strategies—and then intentionally moved their enterprises in the direction they wanted to go.

That is the process for teaching an elephant to dance.
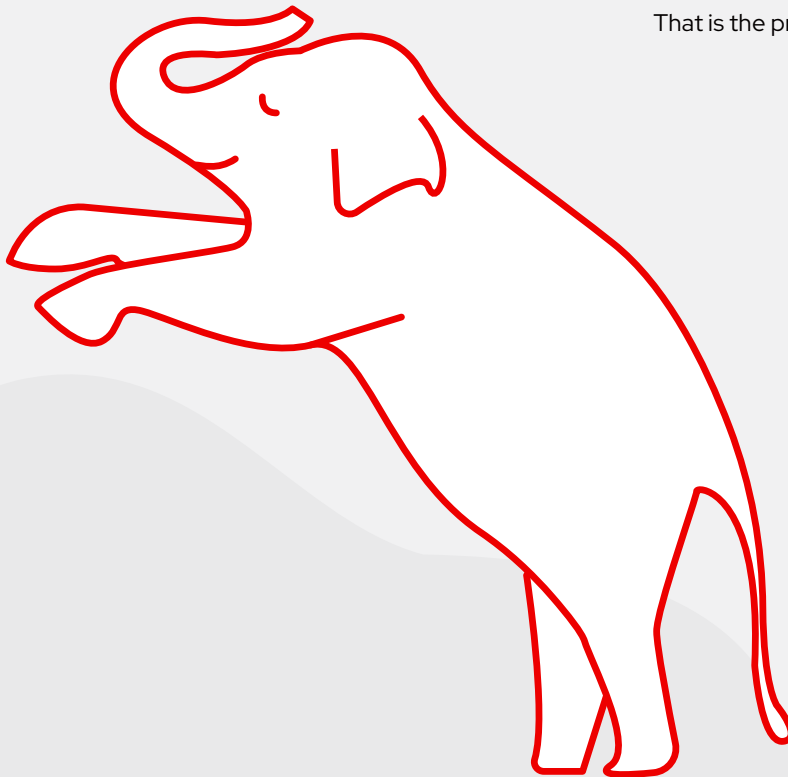
How to approach your own digital transformation

There is a tendency to look at digital transformation as a single initiative. However, this approach fails to acknowledge that the changes related to digital transformation must be continually applied to prevent the organization from slipping back into old habits. Also, digital transformation doesn't have an end state. It is more like a continuum, with different phases along the way that enable the next stage of evolution.

Culture first

Digital transformation is not only a technology change—it also includes changes to people and processes. Among all of the changes required, the people and cultural changes are most important.
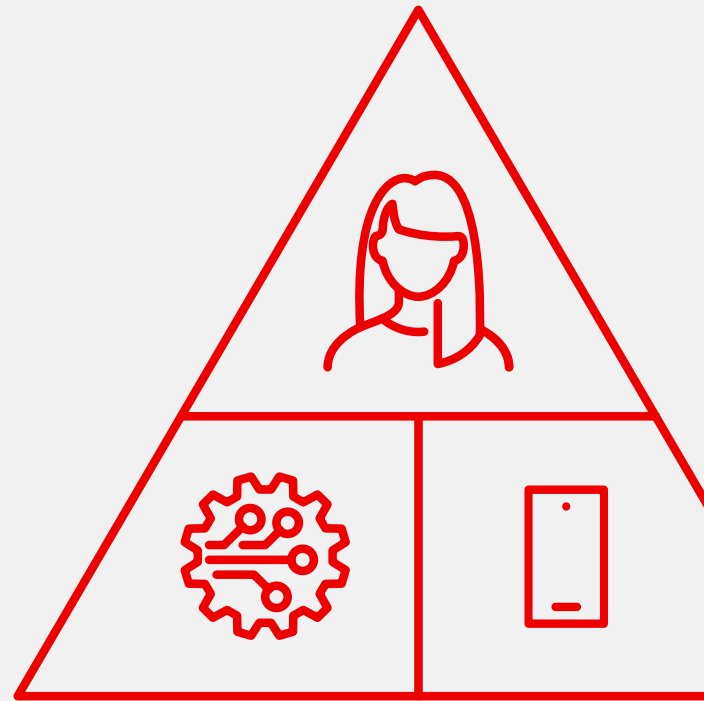
> "...The painful reality is that most transformations fail. Research shows that 70 percent of complex, large-scale change programs don't reach their stated goals. Common pitfalls include a lack of employee engagement, inadequate management support, poor or nonexistent cross-functional collaboration, and a lack of accountability. Furthermore, sustaining a transformation's impact typically requires a major reset in mind-sets and behaviors—something that few leaders know how to achieve... We've observed that the most difficult part of transforming performance isn't determining what to do but rather how to do it. "[1]

[1] Michael Bucy, Adrian Finlayson, Greg Kelly, Chris Moye, "The 'how' of transformation." McKinsey & Company, May 9, 2016.

"70% of large-scale change programs don't reach their stated goals."

While there is no single culture that will lead to successful digital transformation, there are certain organizational characteristics that lead to more successful transformations. A Harvard Business Review survey found that companies with higher levels of collaboration, adaptability, transparency, and inclusivity reported greater success in their digital transformation efforts.[2] Increasing these characteristics within your organization doesn't guarantee digital transformation success, but it does increase your chances.

[2] Harvard Business Review, "Rethinking digital transformation." Sponsored by Red Hat, 2020.
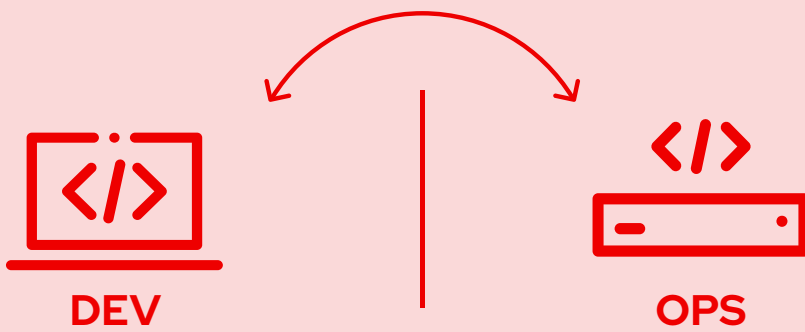
DEV | **OPS**

Key process changes

After cultural changes, the next critical change for digital transformation is moving to agile and automated processes, with small dynamic teams supported by a culture of cross-communication and collaboration.

DevOps

DevOps is the foundation of digital transformation process change. DevOps, and similar agile processes, includes more stakeholders in development discussions and offers broader insights into how customers are using your services. It creates a tighter feedback loop between teams, requiring open lines of communication. These rapid process cycles and open communication practices are the foundation for digital transformation evolution.

One of the first process changes you can tackle is introducing self-service capabilities that allow technical groups to quickly build consistent environments.

CI/CD pipeline

Another important process change is the first part of CI/CD—continuous integration. With continuous integration, every code check-in is combined with an automated test suite to verify stability and functionality. This process identifies problems sooner, not just with code quality, but also for the application's suitability for the business needs.

Once the continuous integration process is running, your organization can implement continuous deployment: pushing changes into production in an automated fashion. Customers experience new services sooner while development and operations can roll out features and bug and security fixes in a shorter time, providing a more secure and robust system.

Alliance Bank innovates faster with an open container platform

Working with Red Hat® Consulting, Alliance Bank moved to a microservices-based architecture on a dedicated hardware. To support its agile strategy, Alliance Bank chose an open container platform to allow collaboration across teams. The platform helped the bank put all branch products and services on a tablet for its staff to use with customers. Alliance Bank is now able to innovate and scale its digital innovations quickly to meet the needs of its customers. Project delivery takes 2–6 months with agile practices instead of 6–18 months with the previous waterfall method.

Agile   2–6

Waterfall   6–18

Months   3   6   9   12   15   18
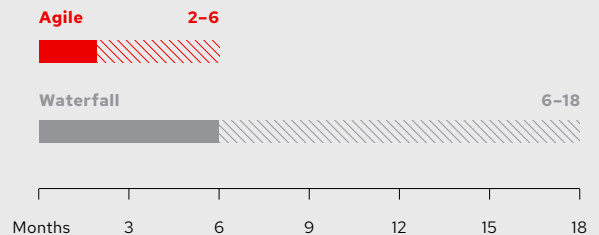
While many of these process changes have been adopted by organizations undertaking digital transformation, remember that the process changes best suited for your organization depend on your unique circumstances. Increasing agility across your entire organization allows you to respond quickly to new ideas and changing market conditions.

Rethinking the architecture

The ultimate goal of digital transformation is to create applications that are useful to your customers and relevant to the organization.

Meaningful applications possess certain characteristics. They are:

- Responsive to users.

- Reflective of the core business function or purpose.

- Adaptive or reactive to dynamic changes in the environment.

- Connected across environments.

- Lightweight and flexible so that functionality can be quickly added or modified.

Whether you have a monolithic application or a modern microservices application, the goal of the technology architecture should be to easily enable the delivery of meaningful application services to customers.
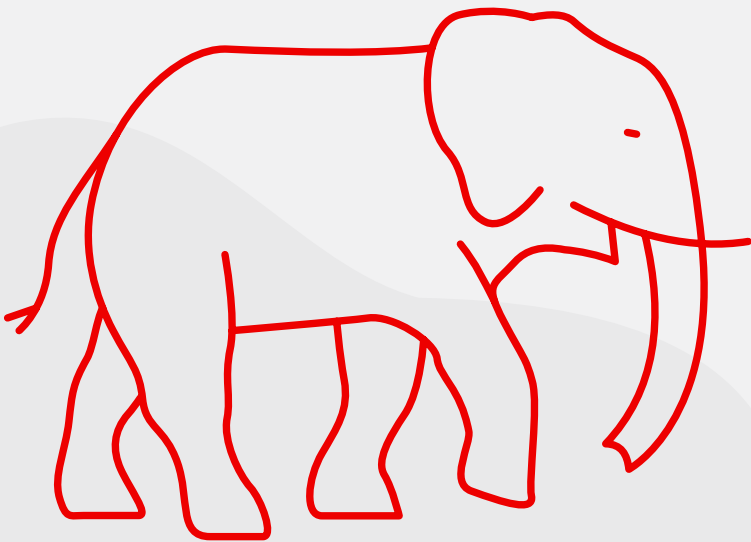
How to teach an elephant to dance

Choose your stage

As you start planning a digital transformation strategy, ask yourself:

- What are your current team or group divisions?

- What are the communication patterns between those groups?

- Who is currently involved in planning cycles?

- Looking at functionality, how close is your current application architecture to your desired application architecture?

- How fast you can react to a major security flaw — weeks, days, or minutes?

- What is the level of risk or failure tolerance within your organization?

- How well understood are your material and information flows?

- How frequently do you need to be able to release an update to meet customer or operational needs?

- What new functionality is required by either business objectives or development needs?

Define your operating principles

Creating a set of core principles that are backed by management and supported across teams can help reinforce digital transformation initiatives and unify teams. Examples of core principles are:

- Organization and people come first.

- Experimentation is necessary and good.

- Failure happens. We learn from it and focus on improving.

- Always be accountable.

- Be transparent.

Design architectures for future agility

Whether your focus is on streamlining processes or creating meaningful applications, your architectural foundation must be built for change. Creating development and deployment processes that emphasize clarity and simplicity will keep that pathway agile and flexible. Then, as demands shift, your applications can evolve.

Conclusion

Over time, enterprise applications tend to devolve into the stereotypical elephant—opaque, cumbersome, and slow to adapt to changes. Yet, these enterprise applications also embody the core business and revenue-generating operations that are critical to your organization. This is the elephant in the room.

These elephants can be trained to be nimble and transformative, as long as there is a clear vision of the final state and the people, process, and technology changes to support it. This strategy is digital transformation as an evolutionary process—where there is no one ideal outcome and each evolutionary path reflects the unique purpose and personality of the organization.

Build your digital transformation strategy based on the level of evolution that best matches your business needs.

Focus on building your culture, and balance technology changes with corresponding process changes so that your technology is fully supported by your teams.

Evaluate your applications and architecture, isolating or developing independent services to create an agile architecture that can be adapted as business priorities change or emerge.

Lastly, foster an ability to innovate—have tolerance for risk and failure and the discipline to set aside resources in time, money, and infrastructure. Experimentation is at the root of innovation, and it sets up a better chance for digital transformation success. It also recaptures some of the initial joy that drew so many people into your organization in the first place—the ability to create and see that creation grow.

Get started with digital transformation.