

WHITEPAPER

THE I.T. OPERATING MODEL EVOLUTION

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EXECUTIVE SUMMARY

As digital transformation and disruption permeates through all parts of the business, many CIOs face the challenge that while pockets of their organization have embraced agility and flexibility, most of their core systems are still slow, expensive, hard to manage, and perceived as inflexible—or core delivery platforms are simply non-existent.

Chief technology officers (CTOs) and chief disruption officers (CDOs) often find themselves testing new technologies, but finding they don't scale beyond the initial proof-of-concept phase or they can't be integrated back into their core business and legacy environment.

This paper discusses the evolution of current IT operating models to support business innovation and digital transformation. The goal is to help leaders transform their organizations into proactive, responsive digital disruptors within their core or adjacent industries. The focus is on helping senior technology stakeholders—predominantly in chief information officer and digital and technology officer roles—with changes required to an organization's delivery capability to accelerate its delivery pipeline while using a flexible, compliant, secure, and governed environment.

This discussion is about changes involving people, processes, and technology—outlining approaches that organizations can take to change from isolated and hierarchical team structures to adaptive and Agile delivery models.

SPEED IS POWER

For leaders striving to build responsive organizations, a balanced approach to transforming their core capabilities is required to account for legacy applications, service maintenance, regulatory obligations, and the need for broader organizational and process changes.

As organizations embark on this IT transformation, they need to take a step back and examine their organization's delivery capability, considering its dimensions of people (skills, enablement, empowerment), processes (methodologies, compliance, governance), and tools and technologies.

Enterprises that explore options to innovate from the core need to solve significant unique challenges not faced by smaller organizations, such as startups. Some of these include:

- How to make proof-of-concept innovation enterprise-ready and scalable.
- How to facilitate a seamless transition or coexistence between legacy and new systems.
- What methodologies to use to deliver projects or products at scale.



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- How to ensure standardization and compliance without stifling innovation.
- Who should ultimately be responsible for running products and services end to end.

The key for large enterprises is understanding that changes are required to their traditional operating models to support business innovation and digital transformation. These changes need to support a flexible introduction of innovative technologies while still meeting security and compliance requirements.

THE CASE FOR CHANGE

As new disruptive technologies are introduced, it is critical for IT to help the business evaluate their potential and facilitate experimentation together, through an adaptable and scalable operating model. We have observed the following factors requiring enterprises to transform and adapt their traditional IT operations:

- **Market segmentation.** Enterprises are asked more and more to adapt faster than their processes allow. By failing to respond to an ever-increasing and segmented market, companies are losing market share.
- **Digitization.** Rather than IT being perceived as a support function to the business, it is becoming the business. This shift is causing enterprises to change their approach from products and services that depend on IT to products and services that have IT at their core.
- **Disruptive technologies.** New technologies are presenting novel opportunities to create entirely new business models. The new IT operating model needs to be flexible to fuel innovation and increase or maintain competitiveness.

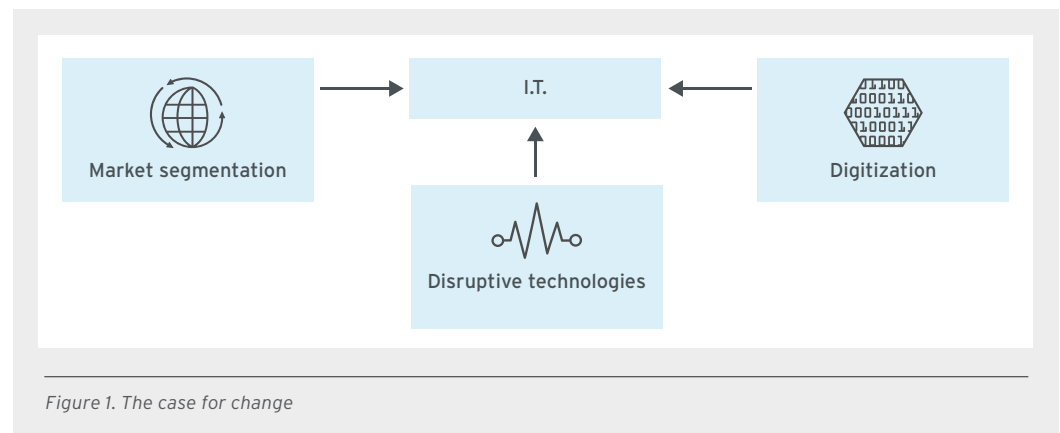


Figure 1. The case for change

The evolving operating model needs to help assess the potential of new technologies—how they might be threatening, or create new opportunities, or even new market segments. To meet these needs, in addition to the adoption of cloud and lightweight architectures, IT must also support new ways of working—such as Agile methodologies and DevOps, and evaluate where more traditional ITIL-based delivery models are still helpful and required.

Challenges and inhibitors with the existing operating model can be categorized as per below across the capability dimensions:

- **People** - Shifting from operating models that enforce controls and standardization to allowing autonomy at the team level, including moving from centers of excellence (CoEs) to communities of practice (CoPs)
- **Process** - Adopting processes from funding through to 'run' that support Agile methodologies and DevOps practices
- **Technology** - Moving away from standardization of all tooling to a platform based approach, which still allows a culture where new technologies can be adopted rapidly at the team level to foster innovation

PEOPLE

Over the last few years, with a broader push and desire for operational efficiencies, organizations have heavily focused on building out centralized and standardized capabilities with centers of excellence or specialized delivery teams.

While centralization has produced certain benefits for governance and cost reduction, it has also become a bottleneck for speed to market or stifling innovation and adaptability at the individual and team level, especially as new technologies have been introduced.

The constant need to maintain and fund CoEs and their highly specialized teams, through a continuous pipeline of projects regardless of demand, has resulted in the CoEs being perceived as cost and overhead to the business. There is a growing need for an operating model that strikes a balance between standardization with centralization and flexibility with autonomy for individual teams to innovate to meet rapidly changing business needs and market trends.

PROCESSES

As organizations adopt new ways of working and transition from traditional, rigid, and hierarchical organizational structures, changes are required to address challenges in:

- Maintaining a balance between Agile and DevOps delivery models and more traditional ITIL-based requirements. This lets Agile delivery teams engage directly with the end users, whether it is business end users (if designing internal systems) or customers (if for external use).
- Adopting Agile processes and maintaining consistency at program or organizational levels, while balancing team autonomy with organizational goals.
- Addressing the divide between the current project-based, stop/start funding approach and the shifting need instead to have long-term, sustainable funding to support long-lived product feature teams.

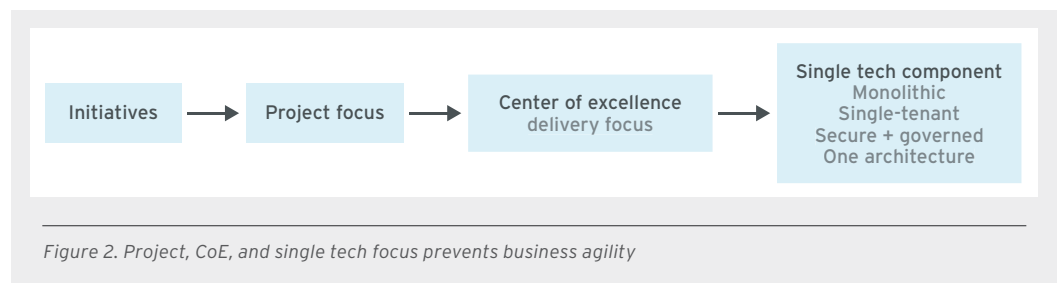
While organizations are adopting Agile methodologies at a fast pace, significant gaps in adoption across the full delivery life cycle have resulted in incomplete adoption of practices, with a mix of waterfall and Agile processes. This inconsistency in approach has further resulted in slowing down the adoption of new technologies, with teams battling through organizational hurdles and processes. Coming from more traditional ITIL-based processes, the move towards a DevOps approach has also created tension within the operating model.

Furthermore, piecemeal and project-based funding for Agile teams is leading to inconsistent outcomes, with the prioritization of initiatives still being based on envisioned tangible and intangible business benefits stated and defined upfront, removing the ability to react to a rapidly changing environment.

To address these challenges, organizations need to look at more holistic changes to their funding and operating models, rather than just adopting Agile and DevOps practices at the team level.

TECHNOLOGY

Many organizations have spent the last few years establishing centers of excellence (CoEs), which are often domain and/or technology specific such as integration, application development, or infrastructure. These teams then often operate within a narrow standard operating environment or single technology stack.



This means that organizations are not necessarily using the best-fit solutions or are unable to pivot to a new technology or solution quickly. Instead, organizations are becoming locked into a single approved technology stack, compromising their ability to compete.

Success in the new world requires that organizations can unlock the potential of new technologies and encourage individual teams to experiment and innovate autonomously. For large enterprises, this requires breaking old habits of centralizing and standardizing all new technologies with both processes and organizational structure.

These challenges have contributed to the growth of non-governed “shadow IT,” where staff stealthily build systems and solutions that aren’t authorized by the organization.

A fresh approach is required, allowing organizations to create a more adaptable model of evaluating and embracing new technology while making the necessary adaptations when it needs to scale.

EVOLUTION

With a new IT operating model, a merge of new and old ways of operating is required, particularly in an enterprise context. With enterprises carrying a rich history of existing applications, processes and large multifaceted services and products across a wide variety of customers, a balance between flexibility and resilience must be maintained within this new operating model.

For success, these key changes across people, processes, and technology are recommended:

People

The people dimension contains changes to the organizational structures to allow for parallel delivery against the highest priorities.

- Move from centers of excellence (CoEs) to communities of practice (CoPs). This requires a transition away from centralized delivery functions to decentralized autonomous delivery teams. Agile delivery teams using DevOps participate in loosely coupled CoPs to share best practices and lessons, without staffing the CoPs as delivery units. This maintains autonomy for delivery teams to be aligned to a product or service line or business outcome and build best-fit solutions, while harnessing leading practices across the organization.

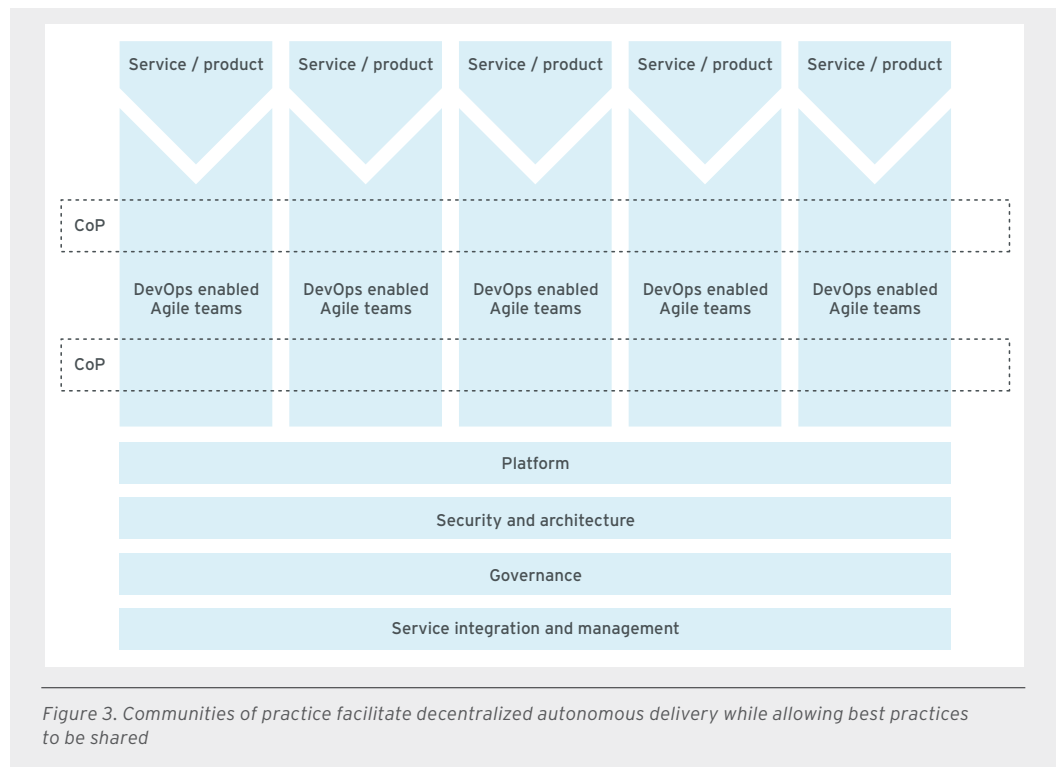


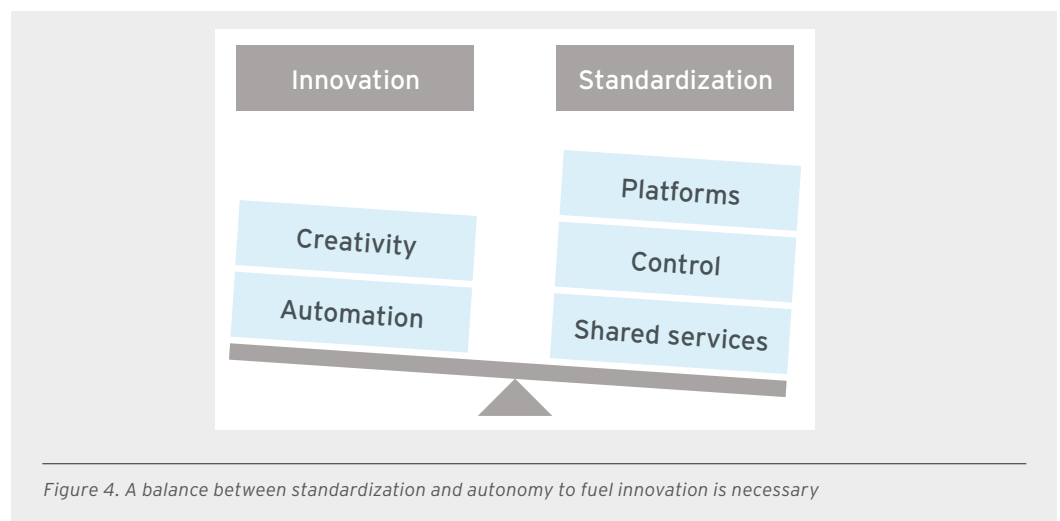
Figure 3. Communities of practice facilitate decentralized autonomous delivery while allowing best practices to be shared

“Enabled teams” are Agile DevOps teams consisting of business and IT experts working together to deliver business outcomes, supported by the community of practice.

This solves multiple challenges of the previous approach:

- Joint business and IT delivery means that there will no longer be a long list of projects being thrown over the fence for IT to deliver, because the relevant business unit has complete transparency of the finite resources, which are now focused on delivering the highest priorities, including service or product life cycle.
- An enterprise-ready, multi-tenanted platform is used for maximum advantage across multiple teams to deliver initiatives in parallel. The single delivery pipeline bottleneck that was imposed by a CoE is removed.

A key decision point for any organization is to determine the balance between autonomy and standardization, harnessing the individual team’s creativity and building shared services and platforms outside of the delivery teams to support common commodity functions.



As a typical example, organizations may choose to leave each delivery team to determine their own continuous integration and deployment tooling but centralize the management of their cloud tenancy and network connectivity within a platform group.

Processes

The suggested changes in the process dimension fuel empowerment and focus through changes in the funding model and support coverage.

• Funding

- Service- or product-based. In addition to implementing new ways of working, fundamental changes are required to the funding approach and cycle. Funding needs to be focused on a service or product and cover the full life cycle, rather than a shorter, project-based funding model.

- **Autonomy and empowerment.** The funding model should give service or product owners full autonomy and empower delivery teams to service the full product/service life cycle. Instead of yearly budget planning cycles, services/products should be evaluated with regards to business value on a daily basis, based on generated revenue.
- **Establish common functions**
 - **Platform.** Even in a DevOps model, ITIL processes should be operating at the underlying platform level to help functionality and services operate at the required service-level agreements. Moving common platform functions outside of delivery teams and having the delivery teams focus on only product feature-level break/fix, patching, and warranty, allows the team to maintain a dedicated focus on delivering new features and serving critical business and customer needs.
 - **Service assurance and support.** The more onerous requirements of a help desk—including 24x7, end-to-end service assurance are completed as a low-cost, common function rather than using capacity from the delivery teams. As the delivery teams deliver more automation at both the platform and application levels, these common functions should decrease in cost and effort per workload over time.
 - **Continuous governance.** Embracing DevOps practices, organizations need to pay specific attention to implementing automation for policy-based compliance and security in a move towards DevSecOps. This shift recognizes governance as a cross-cutting, ongoing concern and a task that needs to be continually executed at the same pace as new product or feature delivery.

Technology

At the core of the technology dimension and delivery team enablement, sits open source technology in the form of a common platform and an automation engine.

- **Open source technology innovation model.** Organizations need to take advantage of the community-powered innovation model based on open source for rapid evolution with emerging trends. While new technologies are readily available, establishing an open source innovation model, including testing the enterprise-readiness of these technologies, is required, since not every technology is enterprise-ready. As technologies mature, they are rolled into standard operating platforms for wider enterprise use. Partnerships with mature, open source players will help establish a continuous technology adoption cadence.
- **Enterprise-grade platform.** Choosing an enterprise-grade platform, operated by a separate function outside of the delivery teams, allows these teams to use it as a common base to build new products and features while not constraining their creativity. This approach also permits an organization to embrace shadow IT and eases the move towards DevOps practices by making automation available for all teams. As an example, Red Hat® OpenShift® could be used as an open source Platform-as-a-Service (PaaS) to support polyglot developer needs, providing enterprise-grade capability for continuous integration and continuous delivery, multitenancy, cloud portability, and a certified middleware stack—all based on open standards.
- **Automated enterprise.** IT automation needs to cover infrastructure (infrastructure-as-code), the platform (PaaS, API platform, etc.), security, and the products and services developed and running on top of the platform. Automation beyond IT delivery teams lets organizations use technology to perform continuous governance, continuous compliance, continuous security, and deliver new capability into production at the same rapid pace as features developed by delivery teams.

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An example of this could be using Red Hat Ansible® Automation as an automation platform to ensure consistency across the IT infrastructure, including auto-remediation when configuration drift occurs, and immediate response to security vulnerabilities through automated patch deployment. Another use case is intrusion defense or for business continuity planning to meet recovery point and recovery time objectives as a common standard across the enterprise.

CONCLUSION

Organizations that create the right balance between harnessing innovation with autonomy and standardizing common functions will continue to succeed both as disruptors and leaders in their core markets. Their operating model needs to include considerations for scale, ability to work in a multispeed, multi-technology model, and the ongoing need to meet compliance and regulatory requirements. Both business and IT should be incentivized to experiment and deliver minimal viable products at speed, in addition to meeting traditional key performance indicators (KPIs) for stability and cost.

While the products and services that organizations need to offer are often specific to an industry, there is a growing need to build solutions on common platforms to support scale, agility, and rapid innovation. This allows them to either out-innovate the competition, move into adjacent industries, or stay relevant within their native industry, while focusing efforts on creating customized solutions, products, and features to differentiate themselves.

The platform-based operating model significantly increases an organization's output through automation on infrastructure, application, and business process levels, including governance and the parallel execution of multiple initiatives. Furthermore, it creates a higher abstraction of foundational capabilities, which helps IT leaders become revenue-generating business partners.

Using industry-independent technology platforms as part of the operating model accelerates product or service delivery. Platforms, and in particular open source solutions, allow organizations to use innovation developed across multiple industries as a common base to accelerate the build of their own unique industry solution on top of the platform.

Embracing open source technologies at the platform level and setting up structures to adapt these technologies at the enterprise level is important. It capitalizes on the innovation power of the community and removes lock-in to proprietary software, intellectual property (IP), and licensing models. This also brings with it an opportunity to contribute customizations and new features back to the open source projects, reducing technical debt.

ABOUT RED HAT

Red Hat is the world's leading provider of open source software solutions, using a community-powered approach to provide reliable and high-performing cloud, Linux, middleware, storage, and virtualization technologies. Red Hat also offers award-winning support, training, and consulting services. As a connective hub in a global network of enterprises, partners, and open source communities, Red Hat helps create relevant, innovative technologies that liberate resources for growth and prepare customers for the future of IT.



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