DXC Leading Edge

Rethinking digital platforms as change agents in a software-defined world

Platform environments redistribute power and capability across the organization to speed time to market.

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Introduction

A software-defined world is mobilizing rapidly as we exit the pandemic, and digital platforms have a new and powerful part to play — as change agents. An earlier paper from DXC Leading Edge titled *Mastering platform-driven business*, part of our *Accelerated Now* research agenda, discussed how organizations are redesigning for flow using pipelines that work seamlessly with platforms to rapidly deliver services. Reimagined and redefined as dynamic digital environments consisting of people, processes and technologies, modern platforms are conduits for high-velocity innovation and flow in the new world.

Competing in the emerging software-defined world calls for a radical rethink of platforms as more than technology investments. A necessary step toward making platforms adaptable in a world prone to external shocks is to make them composable, not just of technical components but of people, their roles and their practices. But applying evolved software engineering techniques like DevOps and Agile is the springboard for refashioning platforms as vehicles for redistributing power and capability around an organization.

Redefined in this way, platforms connect consumption and supply chains, leverage rich data feeds and generate co-creation both internally and across the software-defined world. Ultimately, platforms acting as change agents become part of the enterprise operating model. Says one platform pioneer, "Platform is a state of mind around delivering flow."

The software-defined enterprise

The maturation of software engineering techniques coincides with a new preeminence of the software-defined enterprise. Organizations are embedding software in their products, connecting them to consumption and supply chains and leveraging rich data feeds that in turn enable those enterprises to play in broader ecosystems.

Some aspects of the software-defined world have already hardened to become normal, business-as-usual activities:

- **Digitally direct to customer.** The on-demand economy means that everything from restaurant meals, new cars, mattresses and cheese to razor blades is consumed and wrapped in a custom, personal experience.
- **More personalization.** Digital challengers are harnessing celebrity videos as social media-tainment and co-creative platforms in order to achieve better distribution and client experiences. There's a rise of design-based thinking around customer journeys, microproducts service design and empathy design.
- **Rise of the super app.** WeChat and Alipay Mobile are examples of one-stop-shop lifestyle apps that combine commerce, social media and communications. Embedding digital consumer finance in nonfinancial lifestyle products is convenient and usable, and it explains the meteoric rise of these apps.

The enterprise is now becoming part of digitally driven ecosystems of partners who collaborate to design, build, manage and operate cyber-physical assets (**Figure 1**).

Building and running the software-defined world

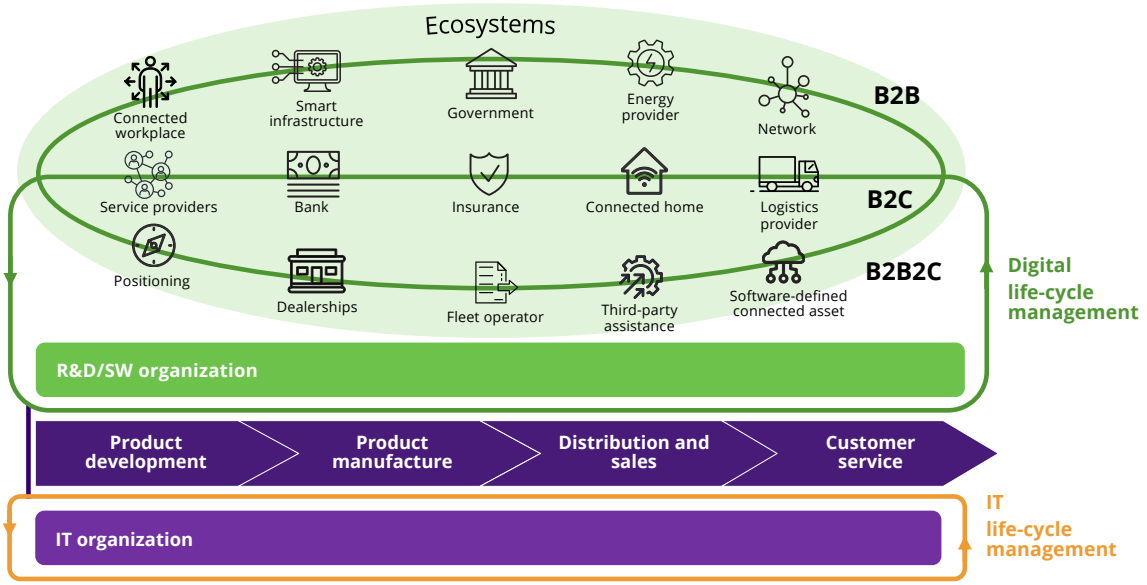


Figure 1. More enterprises in all sectors are embedding software and connectivity in their products to enhance functionality and customer experience.

In business-to-business (B2B) manufacturing arenas of factories and plants, jet engines work alongside digital twins to predict performance and schedule preventive maintenance.

Meanwhile, in the business-to-consumer (B2C) space of fast-moving consumer goods, groceries and products are delivered directly to the customer, ordered from multiple channels that must work in sync and share data.

And in the expanded ecosystems of business-to-business-to-consumer (B2B2C), the software-defined, connected, electric vehicle — complete with digital cockpit, driver connectivity and autonomous driving — shares car and customer performance data with ecosystem partners.

Platforms drive the digital life cycle

While organizations are proceeding apace with embedding software in their assets and connecting these to the enterprise, few are prepared for — or capable of — storing, processing, analyzing, acting on and innovating from the tsunami of data this intelligence generates. Whether the data is captured from patient medical devices, cockpits or motor dashboards and controls, it provides potential insights that organizations aren't capable of extracting and absorbing. These cyber-physical assets need continuous development, deployment, upgrading and retirement, a process known as digital life-cycle management (DLCM).

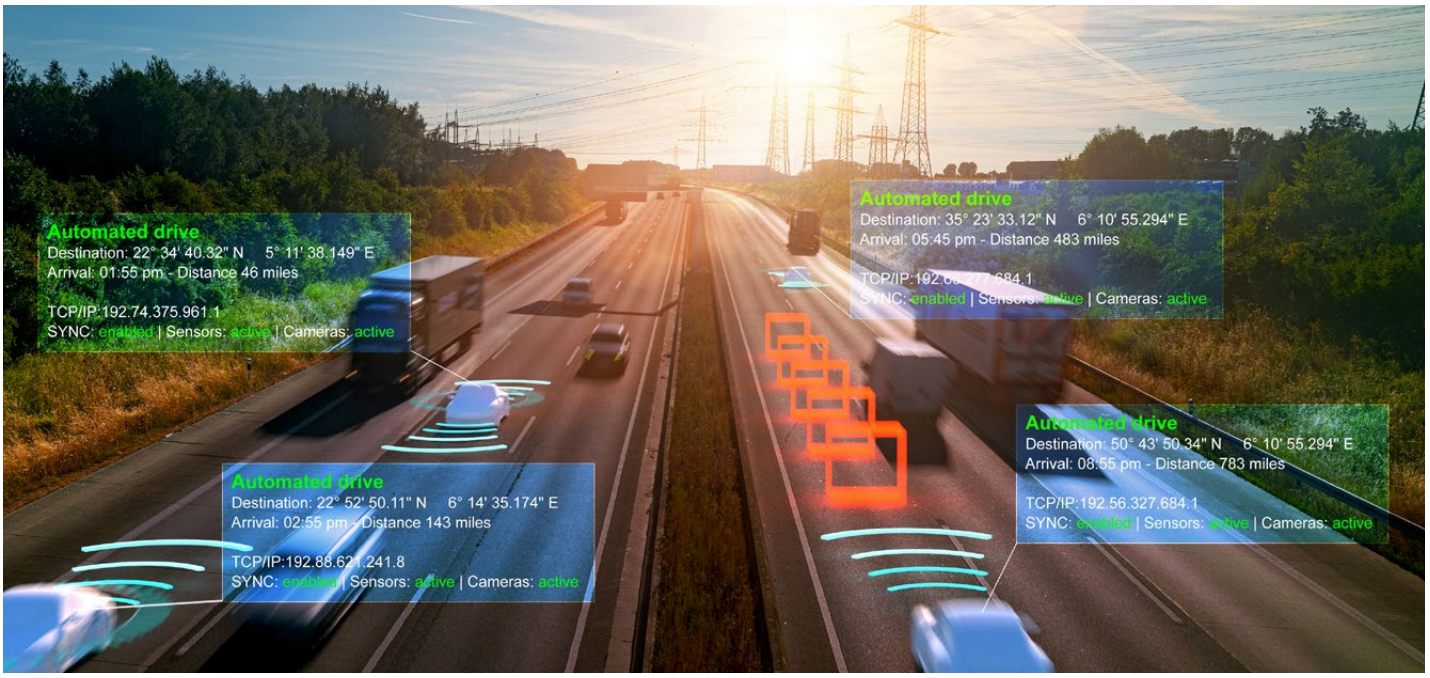
The reimagined platform environment has a central role to play by creating, running and evolving DLCM. As modern platforms drive DLCM, methods and concepts like DevSecOps, Scaled Agile, Lean Startup, Scrum, Tribes and Team Topologies have migrated from the domain of software development to new enterprise operating models that manage software-defined, connected assets.

All organizations will look for economies of scale between the operating models of the digital life cycle and the IT life cycle. This is tricky given the differing cadences; flows of work, data and change; technologies; and skillsets. We call these shared operating models the zones of harmonization, which reveal themselves through a Wardley Map of both sets of operations brought together.

Platforms as change agents

Competing in the software-defined world means speeding up the rate at which value is delivered to customers. In turn it calls for a redistribution of power and capability away from traditional silos to areas of the organization that manage the life cycle of digital products — at speed. Treating platforms as change agents that modify behavior and make employees digitally fluent is a shortcut to achieving flow of work, data and change that's fast and distributed. Extending platforms to become collections of people, processes and technologies is vital, but the key is to invite consumption rather than impose use — a pull versus a push engagement approach used in product management.

For example, an approach for delivering modern insurance products to the market is to attract and grow a community of developers and suppliers through socialization of a holistic set of capabilities (technology, processes, patterns and people) that enable the delivery of innovative new products and services. Developers and suppliers plumb into the services offered as long as they follow the rules and share API definitions in a central repository; in a regulated industry, open cannot mean Wild West.



A pivotal factor is to treat platforms as products. This means switching from project thinking, which attracts investment as a lump sum, to product thinking, which justifies ongoing investment by managing a value-oriented pipeline. This is how platforms evolve into change agents.

DXC's work in the insurance market has led to a proof of concept demonstrating that platforms:

- Have the potential to be environments for distributed teams to leverage and build
- Prompt internal and external consumers to think and act differently, and guide them to become digitally fluent
- Balance guardrails (security) and guidelines with achieving velocity of change for individuals, departments and groups
- Create demand for new products and services

When modern platform environments are managed as a product, intentionally and strategically with executive support, they change the operating model of the enterprise.

This happens by migrating the concepts, methods, tooling, organization, behaviors, skills, knowledge and beliefs of the platform environment into the operational processes and organizational structure of the enterprise (**Figure 2**). Teams develop new ways to operate using the platform(s), creating a self-perpetuating engine of invention and reinvention. This is bottom-up change that gets its energy from success in designing, building and evolving digital products.

A pivotal factor is to treat platforms as products.

Modern platforms change the firm's operating model

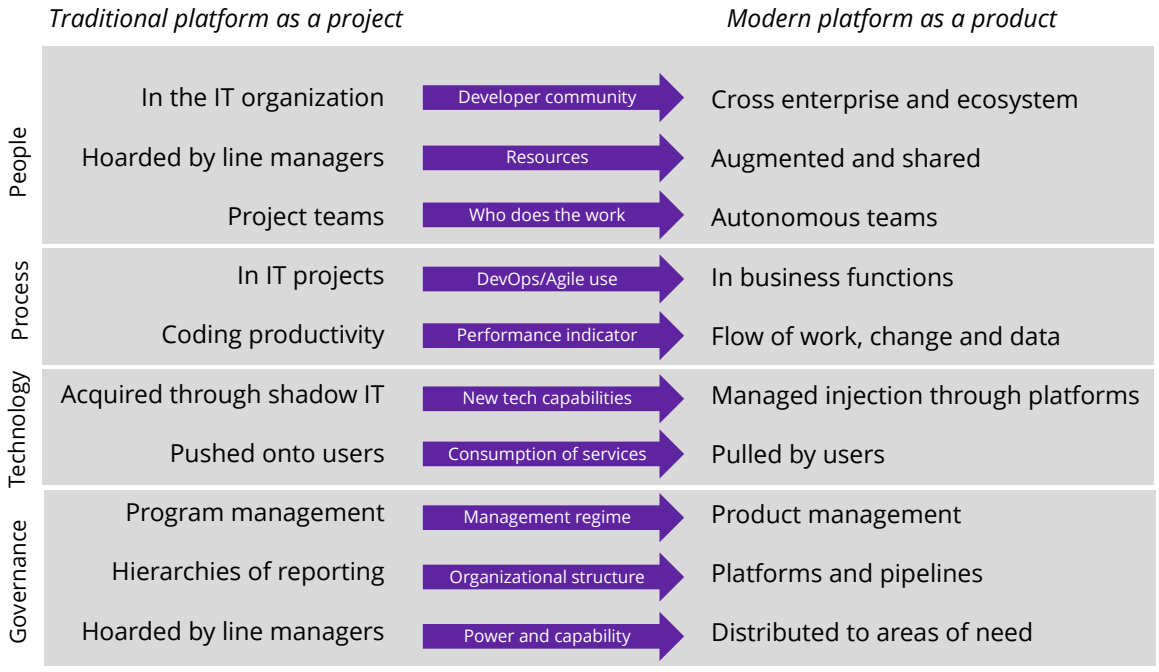


Figure 2. When modern platform environments are managed as a product, not a project, and have executive support, they change the operating model of the enterprise.

Platform barriers

Paradoxically, the word "platform" is inhibiting change because it's overused and vague. Peppered throughout IT roadmaps, business plans and the IT press, it usually refers to technology that aims to fix a problem. Whether an enterprise resource planning platform or a customer relationship management platform, these ensembles of technology started off with good intentions but too often disappointed: Constrained by rigid coding and methods, platforms couldn't adapt to change.

Confusion is compounded by:

- **Shredding.** Value streams are fragmented by organizational silos, and pipelines are fractured by breaks from poor technology and inappropriate governance.
- **Concept hijacking.** Words and phrases of the day are used interchangeably, in different contexts, losing their original meaning (e.g., platform, product).
- **Nontransformational value.** Efforts are pedestrian, focused only on cost control and standardization.
- **The technology endgame.** There is overreliance on technical solutions to deliver the answer, despite cultural and structural inertia.
- **Push vs. pull.** Traditional methods, associated with nontransformational value, limit potential value.

In fact, platform-led transformation isn't about technical components; it's a question of how to organize flow in order to create engagement and value. Platform-led transformation extends modernization of the technology estate beyond an upgrade to cloud to an entire rethink of how work, data and change flow through the organization and ecosystems beyond.

Platform benefits

Given the challenge of transforming to a platform-centric organization, it's important to lay out the benefits and articulate the incentive. Platform-led transformation creates an environment for constant learning, change and subsequent evolution, which cumulatively deliver significant benefits:

- **Liberate your organization.** Free up teams to be more innovative and dynamic where it matters.
- **Better sensing.** Increase your ability to sense change in your environment (e.g., business practices, IT estate, customer sentiment).
- **Power organizational change.** Empower teams to invent new ways of operating and new value propositions, facilitating change from the inside out.
- **Debt containment.** Use platform-led transformation as a vehicle to flatten and reduce technical debt. Platforms won't magically eliminate technical debt, but when used as a learning and adaptation engine, they mitigate the bloat of debt that can become a liability.
- **Ecosystem participation.** A rearchitected and open technology estate is essential for participation in horizontal markets or modern business ecosystems.
- **Productivity increase.** Consumption and reuse increase while build, rework and reinvention decrease; scarce resources (e.g., platform engineers) are used to evolve centralized, automated, optimized, easy-to-use platform services and infrastructure that are shared. Connection and flow between services spread demand across the ecosystem.

How the insurance and auto sectors accrue value from platform thinking

Here's what practitioners say about the benefits of platform thinking:

"Development teams produce more business value because they have to **do less technical work**. Rather than every development team spending time on the 'plumbing,' we centralize, automate and optimize that so the development teams focus on business value."

"The key principle to promote with developers is '**consume, don't build**.' Why waste time on duplicating something? The platform team should focus on the 'glue' to create a compelling experience. Consumption and reuse increases while build, rework and reinvention decreases."

"**Scarce resources** (platform engineers) are used to evolve centralized, automated, optimized, easy-to-use platform services and infrastructure that **are shared**."

"Business benefits include connection and flow between services; this spreads demand and co-creation across the ecosystem. **The ecosystem carries the load**, not just an individual player."

Platform types

We witness platform thinking both at hyperscalers and in advanced data- and change-intensive organizations, where platform thinking represents an environment of technology, processes and people. Platform thinking can be applied to a variety of contexts, and through our research we have identified three platform types or environments (**Figure 3**):

- **Technical platform.** The technical platform environment enables provision and management of the resources necessary to run production, test and development workloads, with tailoring of resources as required.
- **Business capability platform.** These are a set of modular services that can be consumed directly or exposed via APIs that allow teams to build and deliver new or upgraded business services.
- **Business model platform.** These environments are most visible in the business press. Movements such as open banking and innovation crowdsourcing exemplify the platform economy. They are often marketplaces, connecting external producers and consumers to generate learning and revenue for the platform owner.

Drawing on technical leader Evan Bottcher's definition from the book *Team Topologies*, a platform is an environment of tools, services, knowledge and support that empowers teams to develop and enhance products more quickly. To be successful, platform thinking must encompass:

- **Supply and demand.** Platforms bring together producers and consumers to trade value. Exactly who those producers and consumers are, and the value they trade, depends on the platform type and purpose (**Figure 3**). For example, a business model platform like Philips HealthSuite may connect external producers (software market) and consumers (physicians) to trade, and the platform orchestrator extracts value from that exchange. This may extend into a business capability platform as the medical device — for example, an MRI machine — connects digital product teams inside Philips with those using their equipment.
- **Environments.** Platforms are not things we just build and implement, but environments of people, teams, technology and methods that aim to reduce friction associated with the creation and development of digitally intensive products and services. These environments encourage openness, sharing, autonomy and a focus on speed to value.
- **Learning and adaptation at scale.** Platforms enable an organization to learn about itself, what works and what doesn't; market conditions; what's popular versus what's fading — just as search analytics can identify trends across a population. This facilitates experimentation and learning at a scale that can be orders of magnitude cheaper and faster than traditional methods.
- **Industrialization engines.** When a product becomes ubiquitous as a cheap and predictable commodity, like a Lego block, teams can use those standard ingredients to build other, often more valuable, things. As teams develop and prototype new products, the platform (remember, it's an environment) must provide a route to industrialization and provision.

Types of platforms

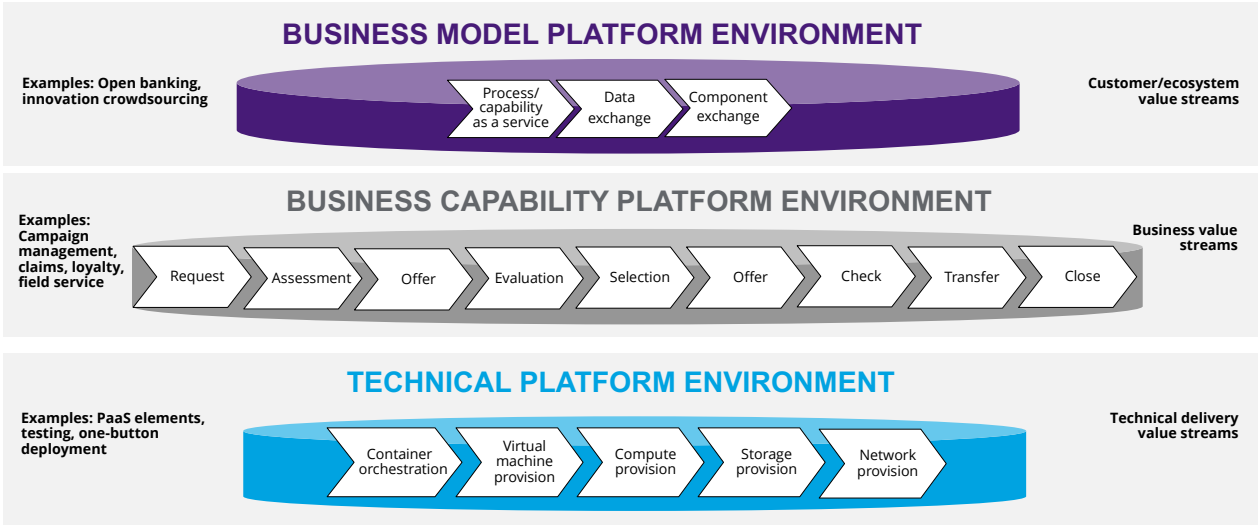


Figure 3. There are three types of platforms: technical, business capability and business model.

Platform taxonomy

The technical, business capability and business model platforms that form value streams are composed of a constellation of teams (**Figure 4**). Stream-aligned teams produce a steady flow of features for the apps or platforms that enable the value streams.

Stream-aligned teams use the enablement teams and platform teams to improve their experience and productivity. Platform teams create self-service capabilities, have a strong focus on user experience and resolve issues in platform performance. There are enablement teams for Agile/DevOps, test automation, cloud, security and user experience. These teams help all other teams increase autonomy and the fast flow of value, reducing the learning curve in adopting new principles, patterns, practices, technologies and culture.

Stream-aligned teams produce a steady flow of features for the apps or platforms that enable the value streams.

Platform environment taxonomy model and teams

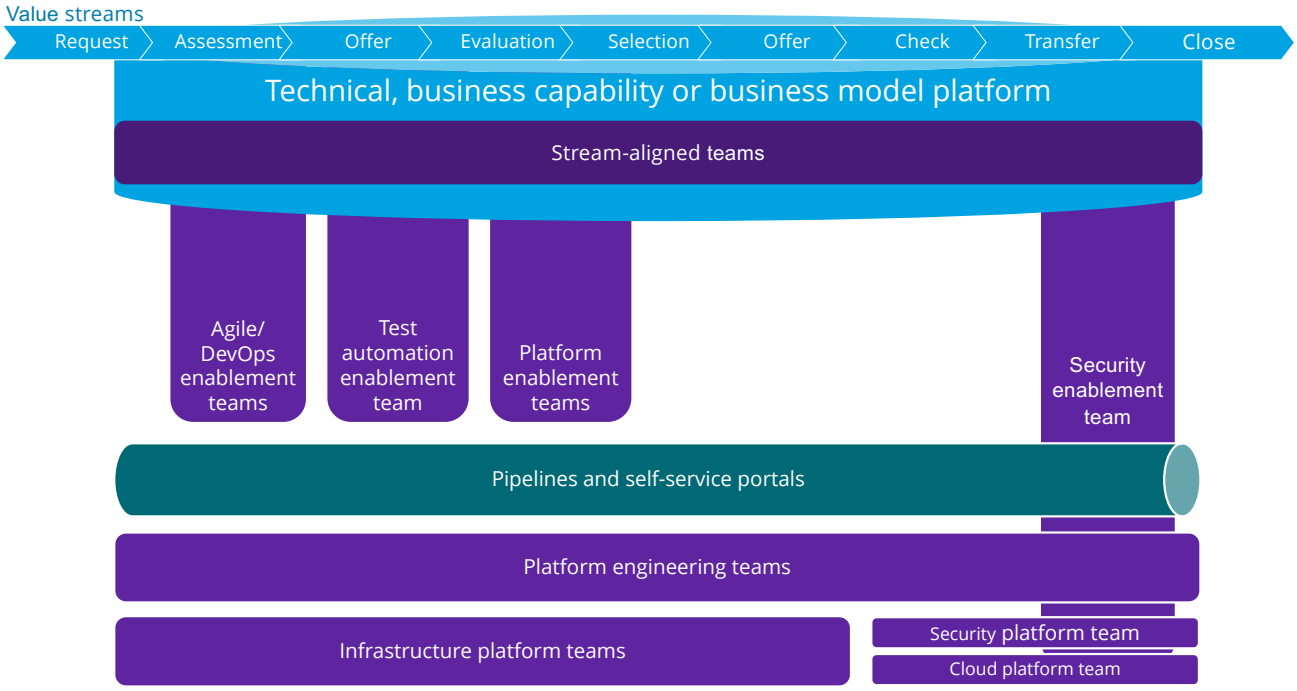


Figure 4. This platform taxonomy identifies various teams that collaborate to deliver business value.

Platform thinking and platforms as products

Platform thinking is an evolution (**Figure 5**). Accessing the right vocabulary and tools, and acquiring a product management mindset, underpin the journey.

Successful platforms are treated as digital products and managed as value pipelines, but for internal customers. Done this way, they're an Aladdin's cave of ever-enhanced tools, methods and data scientists. The idea is that once internal consumers try them and like them, they'll become advocates. As discussed earlier, cultivating a platform-as-a-product mindset is intrinsic to the platform becoming a change agent.

> Cultivating a platform-as-a-product mindset is intrinsic to the platform becoming a change agent.

Designing platforms as operating models replaces legacy processes with modern, intelligent, automated and digitized versions that learn and evolve as fast as the pace of new technology. This enables the following:

- **Exchange and integrate.** The platform exposes capability sets (services) that allow others to leverage what has been prebuilt, then reassemble and deploy to satisfy a specific need, and then reshare.
- **Industrialize.** The platform team senses emergent capabilities and hardens them, ready for scaling.
- **Accelerate development.** The intent to decentralize, creating a "pull" on the platform, empowers teams to essentially procure and provision new capabilities where they are needed most.
- **Act as change agents.** Teams develop new ways to operate using the platform(s), creating a self-perpetuating engine of invention and reinvention.

DXC sees these capabilities as a modern digital platform environment. We use this environment to create high-performance teams, faster software engineering pipelines and leaner, faster, more efficient systems and processes. These modern digital platform environments are both engineering the new enterprise operating model and powering the new IT operating model.

A journey of platform-enabled transformation

Figure 5. Platform thinking is a journey that enables business transformation.

Platforms for performance

In a software-defined world that's becoming more intelligent and moving faster, it is critical for data, work and value to flow faster around organizations. Platforms designed as change agents reengineer the operating models of organizations, enabling teams to work more productively and creatively as the platforms draw in more consumers and suppliers. Enterprises that embrace platform thinking will have the freedom to play in broader ecosystems and capitalize on a software-defined world, accruing significant benefits for the business.

About the authors

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