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Mastering platform-driven business

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When you click with a mouse on a news site, news flows. The click animates a process, a data pipeline and a set of platforms that deliver that flow of news. In today's technology-oriented economy, customers expect digital products and services to be as instantly available and reliable as a news flow resulting from a mouse click. Therefore, organizations need to flow with new ideas, enhancements and a deep understanding of the customer. This can only be achieved in an organization *designed to flow*. Software engineering provides this flow: Data pipelines seamlessly interconnect and support platforms that deliver the services the customer requires.

The Accelerated Now of the post-pandemic economy is already being led by software-driven organizations that are dictating the terms of their vertical markets, whether financial services, retail or media. Organizations that fail to adapt and develop their own internal flow will struggle to deliver the value customers expect at speed.
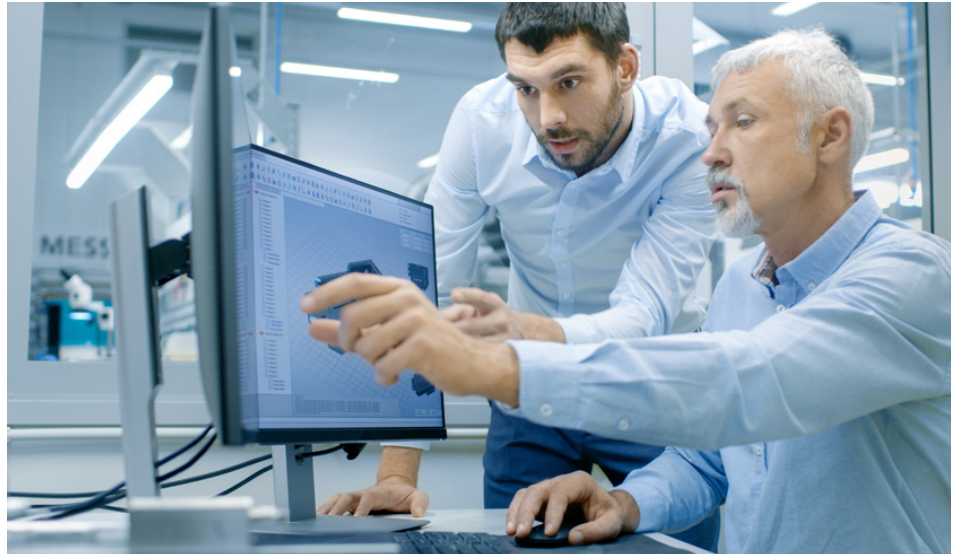
The pandemic opened the floodgates to flow, as organizations digitized many activities over 20 times faster than they previously had. Out of necessity, organizations learned to envision, design, develop, procure, integrate, test, release, support, modernize, commercialize, protect and even retire software and business services at a pace they had previously not imagined. A radical modernization of core areas of their operations took place. The challenge now is to continue that journey.

Software-led modernization: A sea change in operations and culture

But something deeper than a greater focus on software engineering occurred: Organizations underwent a significant cultural change. The people and areas of the organization that previously resisted change learned to adapt and, in many cases, became centers of demand for software-led modernization. This sea change in operations and culture was made possible by the unsung heroes and heroines of enterprise IT — software engineers. Software engineers refactored business processes into digital methods and replatformed legacy applications to the cloud. In doing so, they often rehosted and relocated technologies to new business platforms to guarantee that the new flow of work succeeded. In many organizations, this meant retiring on-premises applications.

In addition, adopting iterative product development practices in recent years has enabled software engineers to release enhancements in hours and minutes rather than in weeks and months. In the most successful cases, these digital transformations are also deployed in collaboration with the business lines and end users who will apply the software. Having witnessed the pace at which software engineering can deliver change, organizations have now learned to recruit team members in weeks, not months; marketing campaigns are iterative and adapt according to almost-instant responses; and product testing is continuous, not an add-on to the project delivery process.

Software engineering drives the business

Organizations are adopting software engineering as part of the general flow of business.

Organizations, therefore, require software engineering to be a core capability of the business. This capability ensures that the organization can compete and respond to change, whether in market conditions or regulatory environment. This has led to organizations realizing that software engineering is central to value generation in the business. In turn, this is leading to software engineering being adopted as part of the general flow of the business.

Organizations with a software engineering core are already at the forefront of their vertical markets. Online retail leader Ocado scaled up to become an international player in half the time it took its supermarket competitors to go national. Media firm Sky offers a broad and diverse range of services that interconnects its core business of broadcasting with adjacent sectors such as gaming and communications. Marcus, by financial services leader Goldman Sachs, is a classic example of a business developing a cousin brand and service with a software ethos. The London insurance market (see below) is another example. Organizations with a physical heritage — including furniture manufacturer and retailer Ikea, sports shoemaker Adidas and Capital One in financial services — have also demonstrated that the adoption of a software engineering culture enabled them to execute significant change in product range, business and customer services.

Organizations that adopt software engineering as a core component of the flow of business will introduce a tide that raises all boats. Business processes and practices will increasingly digitize and be data-driven with data mastery. Software and digital platforms will become the infrastructure of the organization, accelerating decision making and the pace of change since business infrastructure built on software can be quickly adapted to new market demands. Software engineering becomes the organizational direction of the business as it creates data pipelines that can be adapted on demand. This will result in all business processes and areas of the organization being able to continuously integrate, deliver change and deploy new products and services.

When organizations emerge from the enterprise IT era (see **Figure 1**), they will find themselves centered on apps and data pipelines that feed the intelligent, hyper-automated business operation platforms we term *bionic business platforms*. These platforms will create greater business agility, as data pipelines can be plugged into them according to business needs. Cross-functional teams will then create shared services to experiment with innovations and create instant responses to market conditions, promotions or business impacts. Just as team members want to swarm around a business problem or opportunity, so the organizational platforms can be swiftly configured to deal with an emerging issue.

			Enterprise era Engineered software	Cloud era Engineered operations	Intelligence era Engineered organizations
Culture	Behaviors	Perspective	Inside-out	Outside-in	Ecosystem-wide
		Leadership	Command and control	Empowered people	Leadership as a system
		Bias	Control and risk management	Action and change	Collaboration, cognitive load
Operating model	Organization	Teams	Large, projects, programs	Small, X-functional, temporary	Long-lived, autonomous, differentiated
		Evolution groups	Shadow IT, the IT organization	Multiple bimodal	Three-layer operating model
		IT/business relationship	IT is provider, promoter	IT moves from partner to peer	IT and business merged
		Structure	Hierarchy, one-size-fits-all	Multiple operating models	Micro-enterprises
	Digital assets	Systems and infrastructure	Monolithic, COTS	Bionic business platforms, sustainable sustainability	Adaptive, ecosystem
		Data	Dark, islands	Mastery, metabolic	Fluid, fabric
		Processes	ERP, rightsourced	aaS, automated	Ecosystem
Practices	Life cycle	Engineering	Design, build	Orchestrate, assemble	Choreograph, print
		Deployment	Project end	Continuous integration/delivery	Progressive deployment
		Methods	OSFA: Waterfall, ITIL, N+1	DevOps, Agile, DfF, scaling	Iterative, use appropriate
		Innovation and industrialization drivers	Suppliers and consumers	Digital transformation	Systematic and ecosystem

Figure 1. Three eras of organizational IT

Technology spotlight: Platform-driven business

Carl Kinson, Director, Technology Strategy and Innovation, DXC Technology

As organizations consider the platform-driven model, it is important to have a good understanding of some of the key underpinning technologies. These are highlighted below according to three stages of technology evolution: emerging, experimental and established.

Emerging technologies

Moving platforms to the cloud must incorporate a strong security posture. Secure Access Service Edge (SASE), sometimes called Sassy, will soon become an established design principle of platform operations.

Chaos engineering — the process of testing a distributed computing system to ensure that it can withstand unexpected disruptions — is the differentiator between services built for resiliency or not.

Environmental operations will be the intersection between sustainability and environmental, social and governance (ESG) factors associated with the platforms — for example, which organizational platforms are green and which are not. The combination of financial and environmental business factors will be decision-making points in the platform ecosystems of the future.

Experimental technologies

Hyperautomation in platforms using robotic process automation, artificial intelligence, machine learning and natural language processing will be able to increase the speed of the process flow within platforms by interacting, translating and understanding data and information as it passes into and through the platform. These technologies will reduce risk, increase speed and improve customer satisfaction.

To succeed with these technologies, organizations will need to have reached a state of continuous integration and deployment, supported by automated data pipelines. Organizations will need to be able to continuously test and ensure that the code of these new technologies meets the functional and security requirements of the business. A composable architecture will allow the organization to break platforms down into services that can be contained and integrated through application programming interfaces (APIs), and that are able to support the continuous integration and deployment of tools without impacting other services. There are likely to be significant challenges in achieving this with existing platforms and services.

The customer experience of any platform is critical to its success; empathizing with users of the systems increases adoption. Therefore, employing design thinking as a practice in the design and development of platforms is crucial.

Established technologies

Edge computing and internet of things (IoT) are now at the stage of being ready and dependable for platform business strategies.

Infrastructure as code, also dubbed serverless, provides platform business models with the ability to increase speed and infrastructure scaling while reducing risk.

APIs have already become critical for supporting the composable architectures and microservices of loosely coupled systems, providing the ability to integrate and connect a variety of services through APIs. This also creates the mechanism for organizations to isolate and control services.

Automated test-driven development, as the name suggests, automates the test cycle to validate and test code at every stage, ensuring organizations have the right code levels at the right standards.

Citizen development through low-code and no-code application development platforms reduces waste, increases speed and introduces new innovations quickly, often removing workloads from overstretched development teams.

Every business, no matter its vertical market, will have an operating model akin to the new media companies that deliver news and entertainment to our homes. New media companies do not manufacture the technology for distributing their products and services. Instead, they are experts in engineering the right data pipelines, applications and platforms to deliver content that meets dynamic customer needs. Similarly, software engineers in an enterprise that has empowered its engineering teams will engineer their data pipelines, applications and platforms in the same way to meet dynamic customer needs.

When an organization operates from an interconnected set of digital platforms that provide a good user experience and data pipelines, decision making can be moved out across the organization, as there is a single source of truth directing decisions, no matter where they are made. As a result, everyone in the organization contributes to the value stream of the business.

Adopting cloud and digital platforms for flow

The global emergency also revealed the true picture of enterprise cloud computing adoption. Organizations that had stalled on retiring legacy systems or retained inflexible business processes faced a greater challenge. In the post-pandemic economy, organizations will increasingly move to cloud computing.

At present, most organizations are between the enterprise and cloud eras, with some monolithic systems and corresponding business processes still holding the business back in a world of engineered software (Figure 1), while other areas of the enterprise are operating like a software-engineered asset, nimble and able to respond.

Organizations that were born digital and used the cloud from the outset are now no longer seen as "other" by senior leadership teams. The more software applications are used as the platform for business processes, the more the enterprise will get the cloud right and become adept at continuing to digitize operations, which will continue to increase the flow of data and innovation. Highly productive teams will — in close collaboration with IT and its partners — engineer new data pipelines and digital platforms to achieve outcomes that delight the customer.

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Integrating the business to create value

Today's modern organizations have not only digitized retail, financial services, media and automotive, but they have completely modified the customer's expectation. To compete, organizations must develop new value streams that meet and surpass digital challengers' offers that the pandemic has shaped.

In 2021 almost all products and services featured a software or data-driven aspect, which required the organization to develop, procure, integrate and support that software service. But to take full advantage of this, organizations must, in parallel, reinvent their organizational operating model, from one of dislocated, siloed teams and practices to an integrated model that continuously learns and adapts.

Under an integrated model, updates and enhancements can be delivered daily, weekly or monthly to connected energy systems, health technologies, civic infrastructure, security systems, online platforms and consumer wearable devices. This new operating model will naturally segue into automated predictive and preventive operations, which will free organizations from manually responding to outages and fixing breaks. As a result, operational processes and innovation will reduce in cost; resolution time will shrink as the need for people to travel is reduced.

Digital-intensive organizations have natural flows centered on the value streams of the organization and its customers. These organizations use software engineering pipelines and digital platforms to prioritize the flows of the most valuable business changes, critical data and work. (See **Figure 2**.) Just as the pressing of a button produces a flow of media content with no thought about the software pipelines and platforms behind it, so the business with a software engineering approach will be able to turn on data or change with clarity and ease.
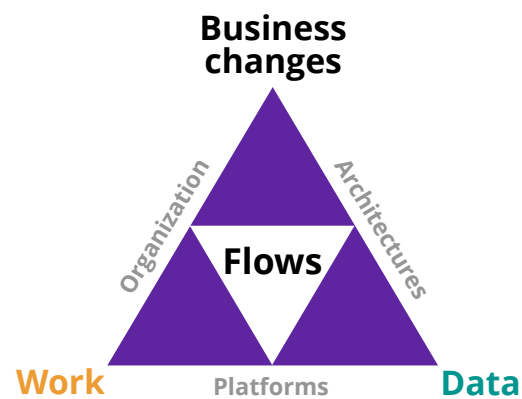
Figure 2. Platform model

Digital platform powers London insurance market transformation

The London insurance market is the largest global hub for commercial and specialty risk. The London market's digital transformation strategy, being executed with DXC Technology, will modernize its operations to ensure that it remains competitive in a global commercial insurance market. At the core of the London market's transformation strategy is a digital platform that can deliver the services capable of managing all global specialty claims, digitally integrate the client (broker and carrier) software to the central services and provide a seamless end-to-end experience for the customer across the insurance life cycle.

Going forward, the platform itself will represent an unparalleled launchpad for innovative new products and services for the global specialty market, providing access to over 200 blue-chip brokers and carriers, with the ability to reuse integration components to reduce speed to market and client effort to consume services and products.

Designed for flow

Successful platform-driven businesses will continuously improve and deploy data pipelines and digital platforms that align to business transformation outcomes. Organizations designed for flow will be the winners in the increasingly technology-oriented economy of the Accelerated Now.

About the authors

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