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IDC

A Holistic Approach to Digital Transformation: ACCELERATING CUSTOMER OUTCOMES

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Digital Transformation and Innovation Are Top Priorities

The anticipated impact of digital transformation starts with **accelerated development of innovative solutions and better customer experience.**

By 2024,

the **top 5 companies** in each sector will be those that **used technology to innovate their way out of a global crisis,** such as recession or supply chain disruption.

By 2026,

75% of market leaders will have **systemic, structured digital innovation programs and investments** that support ongoing iterative innovation to enable growth, scale, agility, and resilience.

The anticipated benefits will stem from digitally enhanced offerings, operations, and relationships. This changes the game. To stay competitive, organizations must holistically embrace:

A foundation of open technology

Open processes to ensure integration

Open architecture to enable innovation

Open culture to foster collaboration

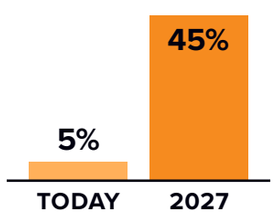
Source: *IDC FutureScape: Worldwide Future of Digital Innovation 2023 Predictions*, October 2022

The World Is at a Digital Tipping Point

By 2027,

artificial intelligence will dramatically increase developer velocity by **automatically generating code to meet functional business requirements for 80%** of new digital solutions in development and early deployment.

By 2027,



the share of non-technology-focused people in companies who will **spend 10 hours or more a week contributing to digital innovation will grow from 5% today to 45%.**

Sources: *IDC FutureScape: Worldwide Developer and DevOps 2023 Prediction*, October 2022; *IDC FutureScape: Worldwide Future of Digital Innovation 2023 Predictions*, October 2022; IDC's *PaaSView and the Developer 2022: Worldwide Survey Findings*, July 2022

85% of organizations developing their own production applications **deploy them to more than one cloud.**

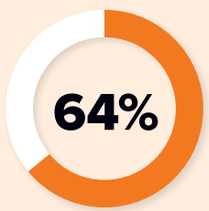
By 2028,

recurring revenue from smart products will make up 65% of revenue for companies that sell "dumb" and "smart" versions of the same products.

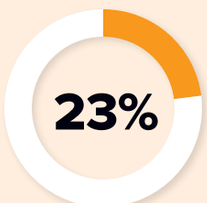
85% of CEOs of the Global 2000 will demand senior leaders **deliver data-driven insight measuring innovation activity,** including developer efficiency and business outcomes by 2025.

Profiles in Transformation

In the current era of digitally driven change, most organizations will need to **reorient how they work and what technology they use.**

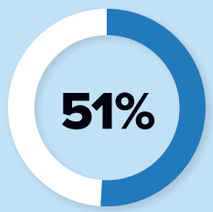


of open source software users **would pay for a secure supply chain if it were available,**

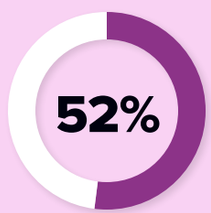


more would pay for it if the price were right.

In an era of highly visible security compromises,



of open source users now **feel more positive about the security of open source software.**



of open source users believe that open source software remains **more trustworthy and reliable than proprietary code.**

Source: IDC's *2022 Open Source Software Use and Engagement Survey*, March 2022

Effective Transformation Requires an Open Technology

By 2026, 90% of developers will use **code curation technologies** that accelerate the identification of relevant, high-quality, and secure code from open source and public code repositories.

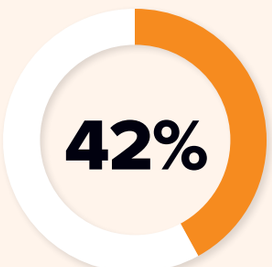
750 million new logical applications will be created by 2025. This is a new paradigm in app development and delivery; it represents a change in what apps are and how they are built, deployed, and updated.

Recognizing the importance of **identifying software components to mitigate vulnerabilities, 55%** of organizations will require a signed software bill of materials for externally consumed apps and software components by 2024.

Sources: *IDC FutureScape: Worldwide Developer and DevOps 2023 Prediction*, October 2022; IDC's *750 Million New Logical Applications: More Background*, December 2021

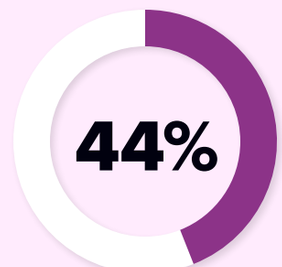
Open Source Clearly Unleashes Innovation

We are now in the era of multiplied innovation, where organizations are moving beyond incremental, to a more wide-scale transformation. This requires them to **leverage an ecosystem of talent, technology, and processes, making open technologies a natural choice.**



of open source users say the top reasons for using open source software include **improving developer productivity, leveraging open source community code to accelerate innovation, and attracting and retaining developers.**

One in four DevOps professionals say their organization is **establishing a curated repository of open source software components.**



of open source users say that **open source content makes up between 15% and 34% of applications** they developed during the past year.

Source: IDC's *2022 Open Source Software Use and Engagement Survey*, March 2022

Organizations Must Accelerate Readiness for Modern App Delivery

Over one-third of U.S. organizations are using DevOps practices, such as automated testing, automated code quality, and continuous integration/continuous delivery.

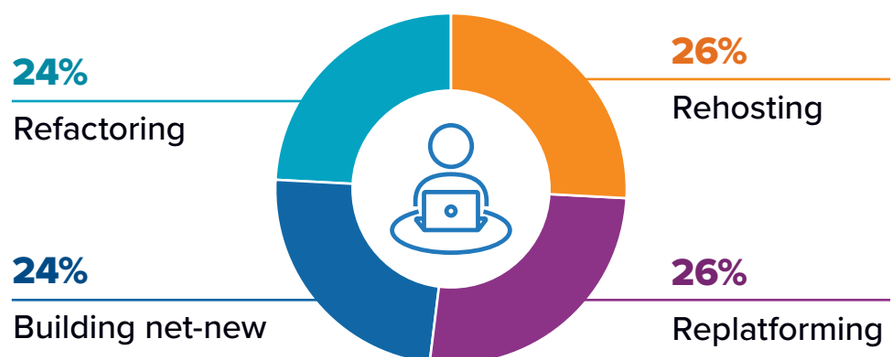
48% of developers in the U.S. **use containers regularly;**

another **35%** are **piloting the use of containers,** increasing the agility of the business to **respond to changing needs.**

30% of U.S. developers **want to spend more time coding,**

while **21% want to spend less time debugging,** aligning with the business need **to produce digital solutions more quickly.**

In 2021, U.S. developers spent their time in the following ways:



Source: IDC's *PaaSView and the Developer 2022: Worldwide Survey Findings*, July 2022

The Fast Delivery of Innovation Is the Goal

Continuous integration with automated build and release management is pursued by **76%** of DevOps protagonist and **24%** of DevOps emergent organizations.

Enterprises that have fully shifted to these new automated approaches dramatically accelerate their ability to push out digital innovation. These organizations see code deployments at **twice the daily and weekly rates** compared to organizations not using DevOps practices.

The ability to accelerate the volume and pace of digital innovation will be the most critical new benchmark for organizations competing in the digital economy.

Open Technology Requires Open Processes

Knock down the silos.

Enterprises thrive with a DevOps culture.

DevOps enables business innovation and facilitates open source innovation.

50%
of U.S. organizations **use open source software as the basis for their DevOps practices.**

52%
of U.S. companies said **open source is more trustworthy and reliable,** with half of those attributing that difference to the open development process.

82%
of enterprises stated that **DevOps teams drive business value.**

Sources: IDC's *2022 Open Source Software Use and Engagement Survey*, March 2022; IDC's *U.S. Accelerated Application Delivery Survey*, January 2022

DevOps Is Mainstream But Must Scale

DevOps adoption is widespread; **69% of U.S. enterprises use DevOps practices today.**

of employees at U.S. enterprises spend **at least 40% of their time** working on projects that use DevOps practices.

The top two challenges impeding DevOps adoption are:

IT operations expertise/skill sets

Technical integration across development and operations processes

DevOps is the intersection of people, process, and technology that aligns with business leadership, culture, and strategy.

Organizations must start to think about **business-centric collaboration.** The future is all about enabling DevOps-led business transformation, taking the benefits from a more collaborative style of working and pushing them into the wider organization.

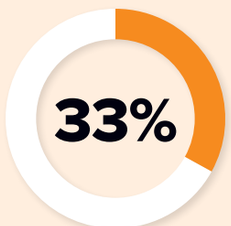
By 2023,

65% of large organizations will have **permanent representation by businesspeople on tech teams or vice versa,** ensuring internal collaborative efforts and that self-service apps meet business needs.

Sources: IDC's *PaaSView and the Developer 2022: Worldwide Survey Findings*, July 2022, *IDC FutureScape: Worldwide Developer and DevOps 2023 Prediction*, October 2022

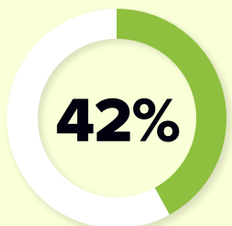
Accelerate Transformation Through DevOps Tools and Processes

BEFORE implementing DevOps processes,



of U.S. enterprises released software monthly or faster.

AFTER implementing DevOps processes,



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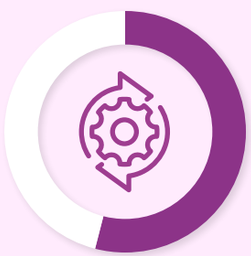
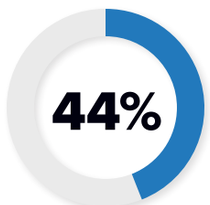


54% said that **more than half of their DevOps solutions use automated push-to-production processes.**

Sources: IDC's *PaaSView and the Developer 2022: Worldwide Survey Findings*, July 2022

Open Processes Require Open Culture

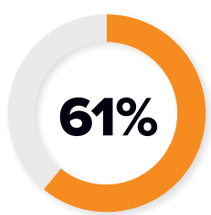
Enterprises must reorient towards **open cultures where every employee is both a techie and focused on business value.** It is always a work in progress, but cultivating collaboration, an innovation mindset, and professional adaptability is now crucial to remain competitive.



of U.S. organizations **use open source today or will in the future** when creating new applications.

- Shared accountability
- Transparency, collaboration
- End-to-end team ownership business stakeholder
- Accountability, experimentation, and fast failing

of U.S. organizations using open source **will continue to use or will accelerate their use of open source software,** despite seeing industry security compromises in recent years.



of U.S. organizations using open source said **at least 25% of the code in their internally generated applications comes from open source communities.**

Source: IDC's *2022 Open Source Software Use and Engagement Survey*, March 2022

How to Create an Open Culture

Facilitate learning and risk taking. These are essential elements for innovation and keeping hard-to-find talent (money is no longer enough).

34% of digitally innovative U.S. companies **lack the skills required to innovate,**

while **29% say resistance to change is another barrier.**

44% of digitally innovative U.S. companies said **management is open to new ideas,** allowing innovation to flourish.

Tracking key performance indicators is important.
The top 3 are:

Development team execution

Software performance

Business results

Source: *IDC Future of Digital Innovation Cloud-Born Companies Survey*, November 2021

Focus on Customer Value and Engagement

Attracting and retaining customers is the number one business priority, more so now than ever.

Customer advocacy is the second most important digital success metric among enterprises.

67% of enterprises said **customer experience is a top priority** in the IT department.

An **open enterprise culture** is important for improving long-term customer satisfaction, as it centers activity on customer value.

Forward-looking companies will have an advantage as just **40% currently use customer experiences/satisfaction** to measure team performance.

Source: IDC's *DevOps and Accelerated Application Delivery Survey*, January 2021

Digital Success Requires Holistic Transformation

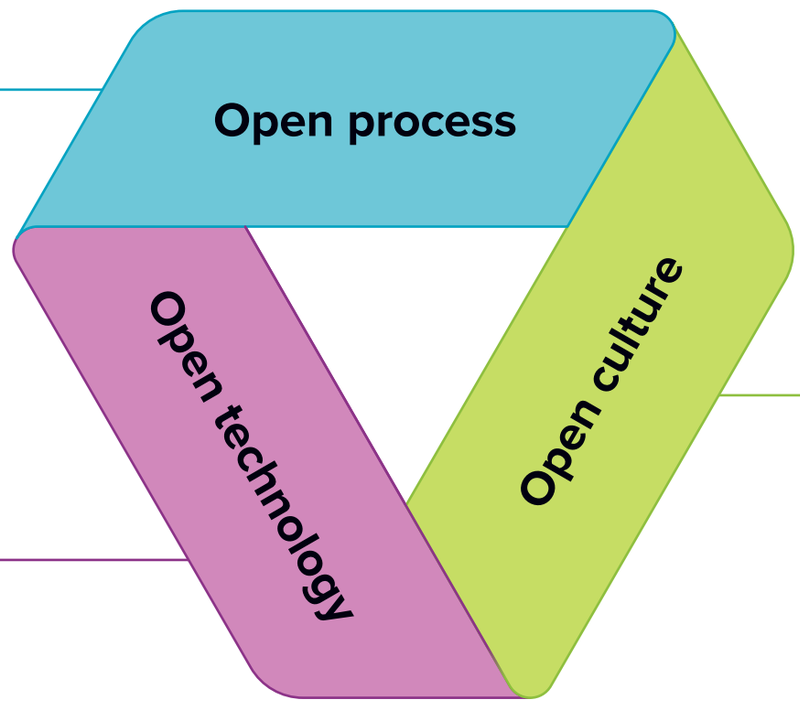
Organizations need an "open transformation" game plan.

INTEGRATE

- **Enable** DevOps-led business transformation
- **Integrate** new technologies with existing solutions
- **Simplify** the connection of apps, services, APIs, data, or connected assets

INNOVATE

- **Shift** to modern application architectures supported by agile and open infrastructure
- **Standardize, modernize, and automate** technology architectures
- **Advance** continuous delivery as a working paradigm



COLLABORATE

- **Make** required organizational and cultural changes
- **Transition** to risk-taking culture
- **Empower** employees to be customer-centric

About the Analysts

Al Gillen
Group Vice President,
Software Development and Open Source, IDC

Al Gillen oversees IDC's software development research portfolio Research disciplines in this group include developer research covering census, demographics, and developer activities; platform as a service and cloud application services for developers; and developer life cycle and quality assurance products In addition, Al jointly oversees IDC's DevOps research program, and runs a program focused on the ecosystem of open source software pan-industry.

More about Al Gillen

Jim Mercer
Research Vice President,
DevOps and DevSecOps, IDC

Jim Mercer is a research vice president within IDC's DevOps and DevSecOps Solutions research practices. Jim's core research includes topics such as rapid enterprise application development, modern microservice-based packaging, GitOps, application security, software supply chain security, and automated deployment and life-cycle/management strategies as applied to a DevOps practice. In addition, he examines how the move to DevOps methodologies impacts enterprise use of open source and preferences for using on-premises computing and development platforms versus public cloud services. He looks at how organizations prioritize DevSecOps and use automation to insert security assessments into the DevOps delivery pipeline (i.e., shift left).

More about Jim Mercer

Message from the Sponsor

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Learn more about digital transformation, the open source way.

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