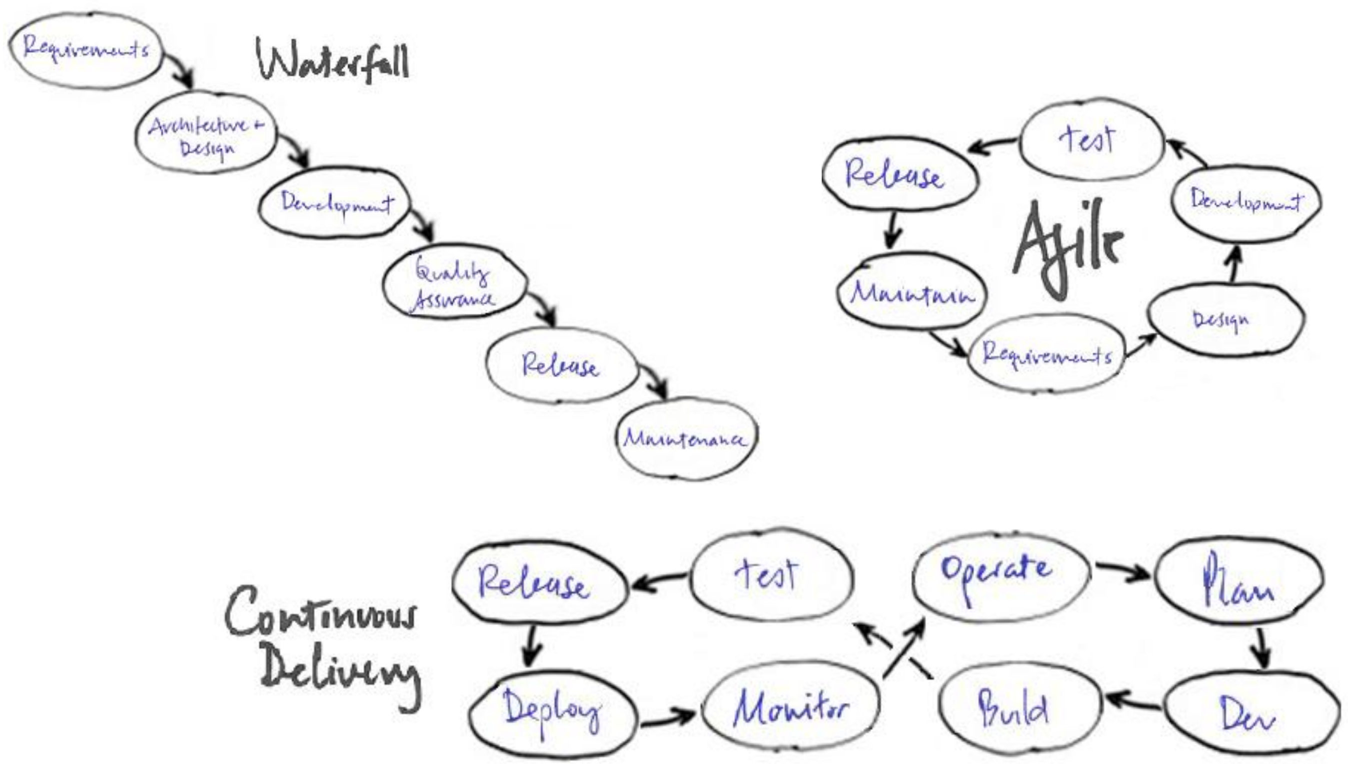
Shea & Company



DevOps Market Map

V4.0 – Q3 2025

The DevOps Market Continues To Gain Traction

Enterprise digital transformation and the rise of AI are driving a total refresh in the tools, processes and people developing software applications

- More than a decade ago, Marc Andreessen somewhat famously wrote "software is eating the world," putting forward the belief that software-defined companies are poised to dominate large swathes of the economy. Over the intervening years, an increasing number of enterprises are expanding their in-house software development teams, creating a greater demand for tools that provide more effective development, testing and launch processes. With examples like Amazon displacing traditional retailers or a proprietary application for player evaluation named "Carmine" helping to lead the Boston Red Sox to four titles in the past 20 years, the power of software cannot be understated.

- Software is not only changing business models that have been in place for centuries (or 86 years of baseball futility), but also it is enabling incumbent vendors across disparate industries to improve product offerings, drive deeper engagement with customers and optimize selling and marketing efforts. Most industries (financial services, retail, entertainment, healthcare) and large organizations now derive a great deal of their competitive differentiation from software.

- But as software has brought benefits, it has also brought increasing demands for business agility – and the software industry itself has been changed. The rapid pace of innovation has required software developers to scrap old methods (waterfall) in favor of DevOps and other continuous delivery methods, ushering in a new set of tools. The explosion of AI within the enterprise is changing the nature of the developer's workflow – from coder to reviewer to orchestrator of AI agents. With increased influence within the enterprise, practitioners are now driving and making purchase decisions on tooling. Widespread adoption of the cloud and SaaS delivery has brought automation, microservices and integrated security to the forefront.

- These trends, and others, have given rise to both a new class of emerging leaders and a wave of acquisition activity by incumbent vendors. In this report, we examine some of these trends, as well as the emerging companies at the forefront of innovation in the burgeoning application development ecosystem.

JOHN DEERE

"Today's large John Deere tractors have more lines of code than early space shuttles."

Samuel Allen, CEO

FedEx

"I run a software company inside of FedEx."

David Zanca, SVP of IT


"What we have witnessed over the past year is the dawn of a second wave of digital transformation sweeping every company and every industry" – Satya Nadella, Microsoft CEO


"The interface you put in front of that customer is the perception of your product and of your value as a company" – Jeff Lawson, Twilio Founder, CEO

Macro Trends Impacting DevOps & DevTools

[1] GenAI-Powered Software Development

- Generative AI has the potential to bring significant efficiency and acceleration to software development – but at the cost of additional burdens on the developer to review exploding volumes of code
- With established use cases in code autocompletion (GitHub co-pilot), Natural Language Processing (Hugging Face is the most-loved developer library in a recent developer survey), testing and documentation, Generative AI has already made its value apparent

[2] Continuous Everything

- As much a cultural shift as a process and tooling change, iterative development methods necessitate continuous everything: development, quality, code integration, releases, performance management … solutions targeted at waterfall development cannot keep up
- Achieving true CI/CD/DevOps requires continual resolution of bottlenecks in the SDLC

[3] Services & Containers

- Breaking development projects into reusable components has yielded significant improvement in development efficiency but has brought an added layer of complexity
- Developers can modify, test and deploy smaller services faster than pushing modifications to an application monolith

[4] Open Source

- 95% of IT leaders say enterprise OS is important to their organization's overall structure, and they're using it for IT infrastructure modernization (62%), application development (52%), and digital transformation (54%) [a]
- OS is the dominant software model for open innovation efforts in the new digital economy and allows enterprises to tap into a wider pool of talent and access features faster [b]

[5] End Users Have Purchasing Power

- As enterprises become more digital, IT practitioners are exerting growing influence on software and tooling decisions while needing to maintain a cost-effective solution
- Technical purchasers are hard to sell to, but can be reached via user communities, e.g., those attached to OSS projects

[6] Cloud & SaaS Delivery

- A fundamental change to the way software is built, sold, delivered and integrated
- Companies' cloud cost constraints and drive for efficiency have created a complex hybrid private and public cloud environment
- The cloud will increasingly be built on open source – with the notable exception of Microsoft Azure, the major cloud platform vendors are running open source stacks

Sources: [a] Red Hat State of Enterprise Open Source, [b] Gartner

[1] GenAI-Powered Software Development

GenAI Powering the Next Generation of Software

GenAI: A Paradigm Shift in Software Development

- Generative AI models have evolved into systems that now understand natural language at near-human levels, generating and synthesizing sophisticated outputs in a context-specific manner
- In a developer context, GAI coding assistants / copilots have become ubiquitous over a very short time frame and though adoption of fully agentic AI coding remains limited in the enterprise, the volume of code generated is significantly increasing
- Interestingly, while one promise of GAI is the "democratization" of coding, a 2025 Gartner study found senior developers gain considerably more efficiency and utility out of AI than more junior developers; we also remain highly dubious of the enterprise applicability of "vibe coding" and similar approaches
- The same Gartner presentation also argued GAI is more likely to increase than decrease demand for applications and software developer headcount rather than replacing devs with machines
- On average, developers spend 30%+ of their time on manual, repetitive tasks, costing firms $8M annually in productivity per 250 developers[1]; we expect adoption of GAI will reallocate much of this time to code review and testing, while boosting productivity
- GenAI platforms will alter DevOps best practices, primarily in the software building, testing and delivery phases, and foster demand for tools (and particularly automation) to manage exploding code volumes

GenAI Supporting Developers

Current Use Cases	Future Use Cases
Code suggestions and autocompletion	Automate security checks and vulnerability scans
Translate code from one language to another	Simplify code with less complex alternatives
Accelerate debugging	Write code that goes beyond templates or stub code
Automatically generate unit tests	Explore alternative solutions to coding challenges
Documentation, user stories and success criteria	Provide guidance on code functionality for implementation

Limitations to GenAI

Hallucinations

Generative AI lacks common sense and contextual understanding – it cannot fully understand the nuances of human language

Knowledge

Generative AI is limited by the knowledge that is available in its training data – in an enterprise context, that can mean a dataset of "1"

Creativity

Although generative AI can create new content, it lacks true creativity and originality

Ethics

Ethical concerns associated with the use of Generative AI (bias, discrimination and the potential impact on human labor)

[2] Continuous Everything

Development Modernization Requires a Cultural, Process and Tooling Evolution

- Agile development and DevOps has brought about a fundamental change to software development at every step from code, build, test and release
- With release cycles shortening from months to days (and in some cases, hourly) manual processes break down, and the need for efficiency and constant feedback becomes critical – as a result, disciplines like test, release and code integration must become automated
- The rapid pace of iteration means quality can no longer be "assurance" after the fact; instead, code quality is checked at every step of the development process, and testing, once the purview of a dedicated QA department, is now conducted by stakeholders at all stages from developer-led (or test-driven development) to synthetic testing done in production – notably, enterprises have found bugs caught later in the SDLC (particularly in prod) become exponentially more expensive

	Waterfall	Iterative	Continuous Integration	DevOps
Process	*Traditional sequential design model (release few times a year)*	*Initial adoption of Agile (release every few months)*	*Significant adoption of Agile (release few times a month)*	*Fully automated development process (release daily/weekly)*
Tools	*Legacy tooling frameworks, limited automation in QA/test, deployment scripts*	*Importance of automation increases, bulk of spend remains in manual*	*Automated testing dominates; manual test for coverage of CI; use of tools covering Dev & Ops*	*Automation in all phases of SDLC is core to delivery (ARA, test, deploy, provision)*
People	*Product Management, Dev, QA, Ops completely separate (silos)*	*Dev & QA start to communicate, Ops remains siloed*	*Dev and QA collaborate closely; DevTest is a reality; coordination between Dev & Ops*	*In the most modern organizations, true DevOps Engineer role emerges*
Market Share	30% → 5%	40% → 20%	20% → 35%	10% → 40%

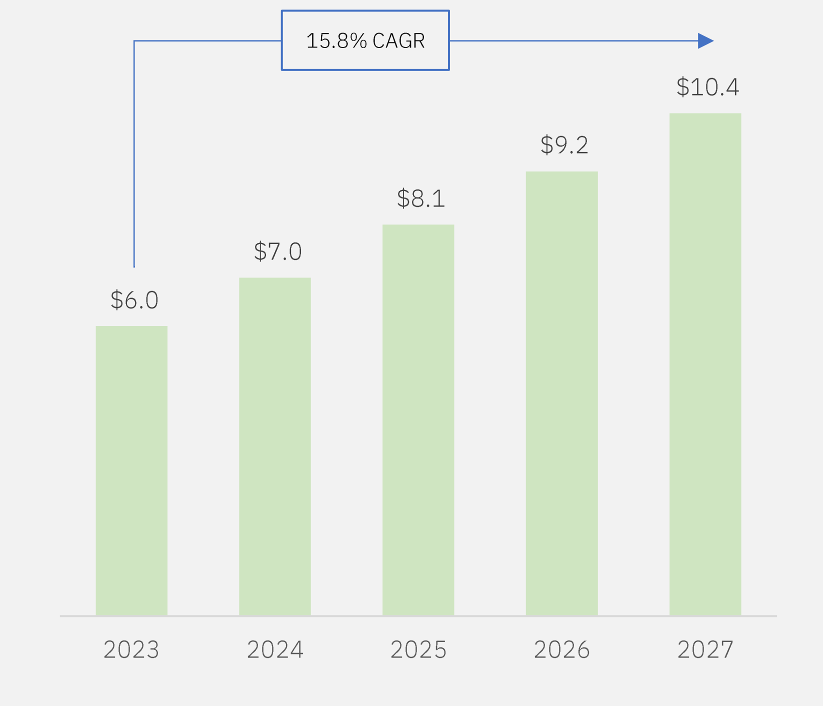
2017 2024

[3] Services, Containers & APIs

New take on an old concept that embraces DevOps and automation

- Application development teams have extended functionality by adopting microservices over monolithic architectures. Instead of building new applications from scratch, developers can break an application into smaller, reusable microservices – bringing significant improvement in development efficiency, speed and reliability
- The reuse of discrete application services first arose under the banner of Service Oriented Architecture (SOA) in the mid-2000s and despite a wave of consolidation by IBM, Oracle, Software AG and TIBCO, the service-oriented approach largely failed as many of the required building blocks were not yet in place, notably connectivity and compute infrastructure
- In a microservices architecture, managing the connectivity between services and eliminating performance bottlenecks is critical, and has given rise to an important class of infrastructure software covering API development (SmartBear, Postman) and API management (CA/Layer 7, Intel/Mashery, MuleSoft) and containers (CoreOS, Docker, Kubernetes, Rancher Labs)

Global Application Containers: Ecosystem Revenue ($ in Bn)



APIs and Containers Enable Speed and Agility

"Growth in the containers market and ecosystem is being driven by increasing enterprise interest to help application developers move faster, manage infrastructure more efficiently and meet digital transformation goals."

451 Research

"Delivering software and services through APIs has fundamentally changed the economics of software, by opening new delivery channels with new pricing options"

Gartner

Sources: 451 Group, Gartner

[4] Open Source

- **80%** of IT leaders expect to increase their use of open source software for emerging technologies, using it for IT infrastructure modernization (62%), digital transformation (54%) and application development (52%) [a]
- **89%** of IT leaders believe open source is as secure or more secure than proprietary software [a]
- **96%** of enterprises use OS within withing production codebase [b]

- Open Source has in many ways become the preferred licensing and delivery model across infrastructure software, and particularly in the modern developer tooling market
- As developers increasingly make/influence tooling decisions, they have gravitated to OS solutions which allow users to download, experiment and modify apps and components with little friction, then as needed purchase a commercial solution for enterprise production deployments
- The pace of feature/function expansion in many projects has been notably faster than commercial offerings – and enterprises have long cited the technical superiority of open-source offerings
- The “open core” model, wrapping proprietary functionality around an open-source core, has driven a plurality of the recent Dev & Ops success stories: Elastic, GitHub, GitLab, HashiCorp, JFrog, MongoDB, Mulesoft, Pivotal, Sauce Labs, SmartBear…

Repository

git
Free, open source DVCS designed to handle small to large projects
Vendors: GitHub, GitLab

JFrog Artifactory
Repository for binary code
Vendors: JFrog

Build Automation & CI

TeamCity
Build management & continuous integration
Vendors: JetBrains

Jenkins
Source code build and integration automation server
Vendors: CloudBees

Runtime & Language

Java
Runtime environment for Java applications and languages run on the Java Virtual Machine (JVM)
Vendors: Azul, Oracle, RedHat

Security

OSSIM
Security information and event management system (SIEM)
Vendors: Alien Vault

Snort
Network security and intrusion detection system (IDS)
Vendors: Sourcefire (Cisco)

Configuration & Provisioning

Terraform
Cloud infrastructure definition, configuration and provisioning
Vendors: HashiCorp

puppet
Automated configuration of servers for application development
Vendors: AWS, Puppet Labs

Operating System

Linux
Operating system for enterprise servers
Vendors: Red Hat, Rogue Wave, SuSE

Testing & Configuration

Swagger
Swagger is the leading platform for API design and documentation using the OpenAPI specification
Vendors: SmartBear

Selenium
Selenium is a test automation framework for desktop apps
Vendors: BrowserStack, Perforce, SauceLabs

cypress
Cypress is a JavaScript testing framework specifically designed for testing web applications
Vendors: Cypress.io

Containers

docker
Software container management and automation
Vendors: Docker

kubernetes
Deployment automation, scaling and containerized application management
Vendors: AWS, Google, Red Hat

Sources: [a] Red Hat State of Enterprise Open Source, [b] Gartner

[5] Developers Have Purchasing Power

A paradigm shift away from the traditional Center of Excellence-led purchasing model

- As enterprises become more digital, IT practitioners are exerting growing influence on software and tooling decisions, shifting the buying center from top-down, center of excellence buying to a land-and-expand, high velocity Go-to-Market targeting practitioners and developers
- Initial entry point is typically a single offering cheap enough to be purchased by a development team member via credit card, often at the time of need (the "land"); from there, word-of-mouth and additional product needs help drive additional upsells throughout the organization (the "expand")
- Companies such as Atlassian employ a "freemium" pricing model [a], adhering to a GTM philosophy where the product is first meant to target single developers for free – once the customer base of developers is established, focusing on increasing the free to paid conversion rate is Atlassian's strategy to begin targeting teams and entire strategic organizations, creating widespread usage of the product across numerous user personas

Firms employing a product-led growth selling motion aimed at developers rather than the C-suite often showcase greater sales efficiency and/or lower sales & marketing spend. Exemplifiers of this methodology include companies such as Atlassian, Datadog and GitLab.

Evolution from Legacy Software Vendors to Companies with Modern PLG Motions

- Early in the application development market, the landscape was heavily standardized on full-suite tools with legacy frameworks such as IBM Rational and HP Mercury and the resulting limited optionality resulted in a center of excellence buying model with practitioners exerting little influence over the overall purchasing decision
- The market has since evolved dramatically with practitioners and developers playing a central role in most all development-focused purchasing decisions; as such, modern DevOps and DevTools companies of scale all have established PLG sales motions, leveraging freemium pricing models to better engage developer and more effectively expand spend
- The cost efficiencies realized from low-touch PLG motions empowers companies to invest more in product innovation, the results of which help drive additional adoption

When researching new tools...

77% of developers start a free trial

and...

68% ask developers they know / work with

while...

57% influence tech purchases

- Companies such as Atlassian and Datadog demonstrate stabilized S&M spend (21% and 27% respectively[1]) by leveraging PLG sales motions; both companies also show a clear line of sight toward near-term profitability
- GitLab's S&M spend as a % of revenue has declined consistently over the past 2 years, from 72% in Q3 FY22 to 48% in Q4 FY25[b]; by targeting developers and teams with PLG selling motions, tangible improvements in sales efficiency leaves room for more R&D investment
- In Q3 FY25, MongoDB saw a 22% increase Y/Y in subscription revenue, anchored by a 41% spend in S&M as a % of revenue to support accelerated growth

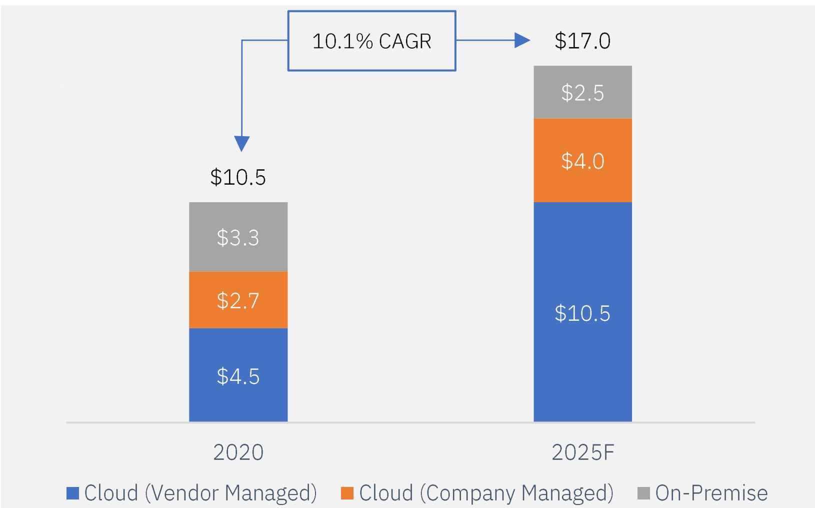
Source: [a] Atlassian, [b] GitLab Q4 FY25 Investor Presentation, Other data from publicly available sources
[1] 3 months ended as of September 30, 2024

[6] Cloud & SaaS Delivery

New delivery methods act as a major catalyst for changes in tooling and enable the continued shift to true DevOps methodology

- The shift of workloads from on-premises, IT-managed resources to cloud infrastructure represents perhaps the most fundamental change to the way software is built, sold, delivered and integrated since the migration of models from mainframe to client/server
- The cloud brought a new set of challenges for application owners and developers (particularly around the deployment and monitoring of applications which reside in the cloud), but also enabled a wave of efficiencies, allowing for exponential increases in automation, collaboration, efficiency and quality
- As firms implement cloud-based applications, hybrid workload environments become increasingly complex and customer preference for the secure, scalable and seamless features within cloud deployment continues to drive growth

Cloud Solutions Market Size ($ in Bn)



Total SaaS Market Growth

200+%

Explosive Growth in Cloud Spend and Usage Drive a Need for Modern DevOps Tools

5x

- Organizations are already running applications on a total of 4.9 cloud environments on average (currently using 3.4 total public and private clouds on average, while experimenting with 1.5 more)
- 89% of enterprises have a multi-cloud strategy with significant enterprise spend growth
- 29% of enterprises spend more than $12 million a year on public cloud, while 78% spend more than $1.2 million annually; public cloud spend is growing 3x faster than private cloud
- SMBs generally have fewer workloads overall and therefore smaller cloud bills, but 39% of SMBs still exceed $1.2 million in annual spend
- Organizations overall today run 51% of workloads in public cloud with an additional 7% expected in the next twelve months
- Enterprises run 49% of workloads in public cloud, 51% in private
- SMBs run 61% of workloads in public cloud, 39% in private
- Optimizing existing cloud use for cost savings continued to be the top cloud initiative for the eighth year in a row (71% of respondents)
- The challenge of managing cloud spend grows as use increases – 73% of "heavy cloud users" cited spend optimization as their top cloud initiative

Market Landscape: Notable Leaders

Requirements
IBM, Jama Software

IT PPM
asana, planview, smartsheet, Adobe Workfront

Engineering Intelligence
DX, GitKraken, Jellyfish, LinearB, Pluralsight, typo.

Application Lifecycle

Value Stream Management
Atlassian, digital.ai, GitLab, Jama Software, Microsoft, planview, Plutora, ptc, Rocket Software

API Lifecycle Management
Google, Kong, Postman, salesforce, SmartBear

Development Platforms

IDEs, UI/UX Design & Prototyping
Adobe, IBM, Infragistics, JetBrains, Microsoft, Qt

AI IDEs
Cursor, GitHub Copilot, JetBrains, replit, Windsurf

MADP
Adobe, IBM, Idera, Inc., Ionic, outsystems

Low Code Platforms
agilepoint, appian, Creatio, kissflow, Microsoft, outsystems, Progress, Siemens, temenos

No-Code Platforms
Betty Blocks, Idera, Inc., IFTTT, nintex, Progress, quickbase, salesforce, Webalo, Zoho

Legacy Modernization
CAST, Fortra, Fresche, OpenLegacy, Rocket Software

Issue Tracking
asana, Atlassian, Basecamp, JetBrains, Microsoft, servicenow, unfuddle, vmware

Software Delivery Lifecycle

Source & Version Control
Atlassian, digital.ai, GitHub, GitLab, IBM, JFrog, Microsoft, Perforce, sonatype

Integration & Deployment (CI/CD)
Akuity, Atlassian, circleci, CloudBees, codemagic, digital.ai, GitLab, harness, IBM, JFrog, LaunchDarkly, Octopus Deploy

Release Automation
CloudBees, Config Cat, digital.ai, IBM, LaunchDarkly, Microsoft, Octopus Deploy, redgate, split

Production

Infrastructure Automation
bmc, docker, Hewlett Packard Enterprise, IBM, Kong, Nutanix, Progress, puppet, Red Hat, salesforce, vmware

Developer-Focused App Security
anchore, appdome, aqua, Contrast, Guardsquare, paloalto networks, Promon, Veracode, Zimperium

Testing & Quality

Test Management
Jama Software, Microsoft, Perforce, planview, Rocket Software, sembi, SmartBear, TestCollab, Tricentis

Test Environments
enov8, instaclustr, Perforce, planview, Quali, Rocket Software, Skytap, vmware

Unit & Functional Test Automation
Accelq, BrowserStack, cypress, digital.ai, garden, headspin, Idera, Inc., IBM, Katalon, Keysight, leapwork, Parasoft, Perforce, Progress, Rocket Software, SauceLabs, SmartBear, Synopsys, Tricentis

Mobile Test
applitools, BrowserStack, Kobiton, NowSecure, Perforce, SauceLabs, SmartBear, Tricentis

Load & Performance
Akamai, IBM, Rocket Software, SmartBear, Tricentis

API Test
Google, Parasoft, Postman, Rocket Software, SmartBear, Tricentis

Secure Development
Black Duck, Checkmarx, Coana, Code Intelligence, Contrast, mend.io, NowSecure, NTT Security, PortSwigger, snyk, sonar, Veracode

Web Accessibility Testing
accessiBe, allyable, audioeye, deque, EqualWeb, Fable, Level Access, monsido, silktide, Siteimprove, Usablenet, UserWay

AI-Powered Testing
appvance.ai, diffblue, functionize, mabl, SmartBear, testRigor, Virtuoso

App Performance

Application Performance Monitoring
Cisco, Datadog, dynatrace, elastic, IBM, new relic, solarwinds, splunk

Front End, Crash & Error Monitoring
elastic, Google, LogRocket, Raygun, Rollbar, Sentry, SmartBear

Market Landscape: Taxonomy by Segment

Requirements
- Atlassian
- IBM
- Inflectra
- Jama
- Microsoft
- PTC
- Rocket

IT PPM
- Adobe
- Asana
- Citrix
- KeyedIn
- Microsoft
- NimbleWork
- One2Team
- Planisware
- Planview
- Salesforce
- SmartSheet
- Upland
- Zoho

Engineering Intelligence
- Allstacks
- CloudBees
- Code Climate
- DX
- GitLab
- Hatica
- Hivel
- Jellyfish
- LinearB
- Planview
- Pluralsight
- Port
- Sleuth
- Swarmia
- Typo
- Waydev

Application Lifecycle

Value Stream Management
- Aqua
- Asana
- Atlassian
- Decision Lens
- Digital.ai
- Digité
- GitKraken
- GitLab
- IBM
- Inflectra
- Jama
- LiquidPlanner
- Microsoft
- One2Team
- Parasoft
- Perforce
- Planisware
- Planview
- Planview
- PTC
- Rocket
- Wellspring
- Wrike
- ZenHub

API Lifecycle Management
- Axway
- Dell
- DreamFactory
- Google
- Gravitee.io
- Kong
- Microsoft
- Perforce
- Postman
- Red Hat
- Salesforce
- Sensedia
- SmartBear
- Software AG
- Tyk
- WSO2

Development Platforms

IDEs, UI/UX Design & Prototyping
- Adobe
- Axure
- Balsamiq
- Bootstrap
- IBM
- Idera
- Infragistics
- InVision
- iRise
- Jetbrains
- Marvel
- Microsoft
- Oracle
- Progress
- Qt
- Syncfusion
- UXPin
- Voiceflow

AI IDEs
- Cursor
- Github Copilot
- Intellicode
- JetBrains
- Qodo
- Replit
- Tabnine
- Trae
- Windsurf

MADP
- Adobe
- IBM
- Idera
- Ionic
- Mendix
- Microsoft
- NativeScript
- OutSystems

Low Code Platforms
- AgilePoint
- Appian
- Caspio
- Clear
- Creatio
- Cyclr
- GeneXus
- Kissflow
- Microsoft
- Netcall
- Ninetex
- OutSystems
- Pegasystems
- Progress
- Salesforce
- ServiceNow
- Siemens
- Super Blocks
- Temenos
- VMware

No-Code Platforms
- Airtable
- Alpha
- Betty Blocks
- Bubble
- Caspio
- Databasify
- Hexagon
- Idera
- IFTTT
- Kintone
- MIOsoft
- Nintex
- Oracle
- OrangeScape
- Progress
- QuickBase
- Red Hat
- Salesforce
- SAP
- ServiceNow
- Snappii
- Software AG
- TrackVia
- Webalo
- WebRatio
- Wizehive
- Zoho

Legacy Modernization
- Arcad
- BMC
- CAST
- Fresche
- Fortra
- IBM
- Idera
- Mobilize.net
- OpenLegacy
- Profound Logic
- Rocket

Issue Tracking
- Asana
- Atlassian
- Basecamp
- Bugzilla
- Civica
- DevFactory
- Idera
- Freshworks
- IssueTrak
- Jetbrains
- Microsoft
- Nulab
- Redmine
- ReQtest
- Rocket
- ServiceNow
- Unfuddle
- VMWare
- WebIssues
- Zoho

Software Delivery Lifecycle

Source & Version Control
- Atlassian
- Dynatrace
- Digital.ai
- GitHub
- GitKraken
- GitLab
- IBM
- JFrog
- Mercurial
- Microsoft
- Perforce
- PTC
- Rocket
- Sonatype
- Unity

Integration & Deployment (CI/CD)
- Akuity
- Atlassian
- BitRise
- Buildbot
- Buildkite
- CircleCI
- CloudBees
- Codemagic
- Digital.ai
- GE Digital
- GitLab
- GoCD
- Google
- Harness
- Idera
- IBM
- JFrog
- LaunchDarkly
- Microsoft
- Octopus
- Pulumi
- Semaphore

Release Automation
- BMC
- CloudBees
- ConfigCat
- DBMaestro
- Digital.ai
- IBM
- LaunchDarkly
- Liquibase
- Microsoft
- Octopus
- Plaview
- Redgate
- Rocket
- Split.io
- VMware

Production

Infrastructure Automation
- BMC
- Cisco
- DeployHub
- Diamanti
- Digital Ocean
- Docker
- Gradle
- HPE
- IBM
- Kong
- Kubernetes
- Netlify
- New Relic
- Nutanix
- Progress
- Puppet Labs
- Red Hat
- Salesforce
- Suse
- VMWare

Developer-Focused App Security
- Anchore
- Appdome
- Aqua
- Contrast
- Datadog
- Digital.ai
- DoveRunner
- Guardsquare
- Palo Alto
- Portswigger
- Promon
- SUSE
- Sysdig
- Tenable
- Veracode
- Zimperium

Testing & Quality

Test Management
- Andagon
- HP
- IBM
- Inflectra
- Jama
- Kualitee
- Microsoft
- Perforce
- Plaview
- PractiTest
- PTC
- QMetry
- ReQtest
- Rocket
- SeaLights
- Sembi
- SmartBear
- Test Collab
- TestLodge
- Tricentis

Test Environments
- Apwide
- CloudShare
- Enov8
- Humanitec
- Instaclustr
- Infovista
- Perforce
- Planview
- Quali
- Rocket
- Skytap
- VMWare

Functional Test Automation
- AccelQ
- Applitools
- Appvance
- BrowserS.
- Conformiq
- Cypress
- Diffblue
- Digital.ai
- Garden.io
- Headspin
- IBM
- Idera
- Inflectra
- Infosys
- Katalon
- Keysight
- Kobiton
- Leapwork
- Mabl
- Mesmer
- Microsoft
- Oracle
- Parasoft
- Perforce
- Progress
- Provar
- QMetry
- Qt
- Rainforest
- Rocket
- Runscope
- SauceLabs
- SmartBear
- Synopsys
- Testim
- Tricentis
- Worksoft

Mobile Test
- Applitools
- BrowserStack
- Digital.ai
- Headspin
- Kobiton
- NowSecure
- Perforce
- SauceLabs
- SmartBear
- Tricentis

Load & Performance
- Akamai
- IBM
- Inflectra
- Keysight
- Mobileum
- Rocket
- RadView
- SmartBear
- Tricentis

API Test
- API Metrics
- Assertible
- Code Intel.
- Google
- Katalon
- Oracle
- Parasoft
- Postman
- Rocket
- SauceLabs
- SmartBear
- Tricentis

Security Testing
- BrowserStack
- Checkmarx
- Code Intellig.
- Coana
- Contrast
- Mend
- Now Secure
- Parasoft
- Portswigger
- Snyk
- SonarSource
- Synopsys
- Veracode

Web Accessibility Testing
- AccessiBe
- Allyable
- AudioEye
- Deque
- EqualWeb
- Fable
- Level Access
- Monsido
- Silktide
- SiteImprove
- UsableNet
- UserWay

AI-Powered Testing
- Appvance.ai
- Diffblue
- Functionize
- Mabl
- SmartBear
- TestRigor
- Virtuoso

App Performance

Application Performance Monitoring
- AppDynamics
- BMC
- Cisco
- Datadog
- Dynatrace
- Elastic
- IBM
- Logz.io
- Microsoft
- Netreo
- New Relic
- Oracle
- Quest
- Riverbed
- Rocket
- Solarwinds
- Splunk
- Sumo Logic
- Zenoss
- Zoho

Front End, Crash & Error Monitoring
- Apptentive
- Elastic
- FullStory
- Google
- Instabug
- LogicMonitor
- LogRocket
- Microsoft
- Progress
- Raygun
- Rollbar
- SauceLabs
- Sentry
- SmartBear

Note: Companies shown are either in excess of 20 employees or are emerging leaders in the segment

Market Landscape: Modern Leaders in the DevOps Toolchain

DevSecOps

appknox, aqua, CONTRAST SECURITY, GUARDSQUARE, PARASOFT, Red Hat, MEND, snyk, sonarsource, Sonatype, SYNOPSYS, VERACODE

Testing & Quality

ANTITHESIS, applitools, BrowserStack, cypress, Katalon, PERFORCE, SauceLabs, SMARTBEAR, Tricentis

Open Source: Appium, Cucumber, JMeter, Selenium, Cypress

Containers

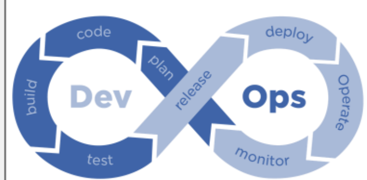
CoreOS, docker, kubernetes, RANCHER, Red Hat, SUSE, vmware

Open Source: Mesos, Docker, Kubernetes

Continuous Integration & Continuous Delivery (CI/CD)

circleci, cloudbees, GitHub, GitLab, harness, JetBrains, Octopus Deploy

Open Source: Ant, Bamboo, CruiseControl, Gradle, Jenkins, Jenkins X, Liquibase, Maven, Spinnaker



Configuration Management & Provisioning

ANSIBLE, IBM, Kong, Microsoft, puppet

Open Source: Ansible, Salt, Terraform

Source Repository & Version Control

ATLASSIAN, JFrog, GitHub, GitLab, PERFORCE

Open Source: Artifactory, Git, Kallithea, Mercurial, Subversion

Application Performance Management

APPDYNAMICS, DATADOG, dynatrace, elastic, new relic, splunk>

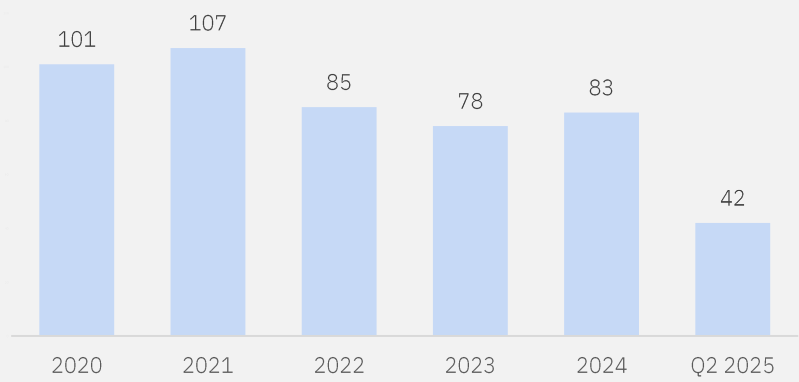
Open Source: Elastic, Logstash, Kibana (ELK), Nagios

Developer Collaboration

ATLASSIAN, GitHub, Jama software, Microsoft, Pivotal, servicenow, Trello

DevOps is an Incredibly Vibrant Market, With Considerable Investor Attention

M&A Activity 2020 – Q2 2025



Notable Recent Capital Raises

Cursor	Raised $900m at a $9.9B valuation (06/2025)
Tricentis	Raised $1.3Bn at a $4.5B valuation (11/2024)
Vercel	Raised $250m at a $3.3B valuation (05/2024)
Adept	Raised $350m (02/2023)
snyk	Raised $197m at a $7.4B valuation (12/2022)
outsystems	Raised $228m at a $4.3B valuation (10/2022)
Veracode	Raised $2.5B (04/2022)
Postman	Raised $225m at a $5.6B valuation (08/2021)
Octopus Deploy	Raised $173m (04/2021)
JFrog	$509m IPO at a $4.0B valuation (09/2020)

Strategic Activity Has Slowed …

IBM — *13 dev acquisitions since 2019*
- HashiCorp
- software AG
- StepZen
- INSTANA
- Red Hat

Atlassian — *6 acquisitions since 2018*
- Optic
- ThinkTilt
- CHARTIO
- CodeBarrel
- AgileCraft
- Opsgenie

… But PE-Backed Platforms Have Filled the Gap

appfire — *13 relevant acquisitions since 2020*
- FLOW
- jexo
- 7pace
- SPARTEZ Software
- Lizard Brain
- MOHAMI

PERFORCE — *14 relevant acquisitions since 2019*
- P4 One
- Delphix
- puppet
- BlazeMeter
- 21Labs
- Methodics
- RogueWave
- Perfecto

SMARTBEAR — *15 relevant acquisitions since 2019*
- QMETRY
- Stoplight
- PACTFLOW
- bugsnag
- Test Management for Jira
- BitBar
- cucumber

Idera, Inc. — *21 relevant acquisitions since 2016*
- HEXAWISE
- filestack
- apilayer
- BitTitan
- XRAY
- ASSEMBLA
- TestRail

Tricentis — *8 relevant acquisitions since 2017*
- SeaLights
- waldo
- testim
- {deepfactor}
- Neotys
- specflow
- QASymphony

Sources: data from publicly available sources

Consolidation Has Fueled Demand for Strategic Assets

Many of today's DevOps market leaders were built through carefully built through a combination of transformative and tuck-in acquisitions, adding functionality and expanding TAM to outpace competitors

Platform	Total Add-ons	Notable Acquisitions
appfire / TA Associates	30	FLOW 2025; JXL 2024; QOTILABS 2023; jexo 2023; 7pace 2022; SPARTEZ Software 2021; Lizard Brain 2021; MOHAMI 2021; botron 2020
digital.ai / TPG	10	experitest 2020; Numerify 2020; ARXAN 2020; XebiaLabs 2020; CollabNet 2019
Idera, Inc. / Partners Group	28	HEXAWISE 2022; filestack 2022; APILayer 2021; BitTitan 2021; XRAY 2021; ASSEMBLA 2018; TestRail 2016
PERFORCE / FP Francisco Partners	14	P4 One 2025; Delphix 2024; puppet 2022; BlazeMeter 2021; 21Labs 2021; Methodics 2020; RogueWave Software 2019; Perfecto 2018
Progress	32	ShareFile 2024; MarkLogic 2023; kemp 2021; CHEF 2020; ipswitch 2019; kinvey 2017; DATARPM 2017
SMARTBEAR / VISTA Equity Partners	15	QMETRY 2024; Reflect 2024; Stoplight 2023; PACTFLOW 2022; bugsnag 2021; TM4J 2020; BitBar 2019; cucumber 2019

Differing Strategies Employed Among Market Consolidators:

Product-Driven: SMARTBEAR

- SmartBear's acquisition strategy has primarily been focused on product adjacencies to build on its existing product set, including observability (Bugsnag, Aspecto) and API (Stoplight, SwaggerHub)

End Market Oriented: PERFORCE

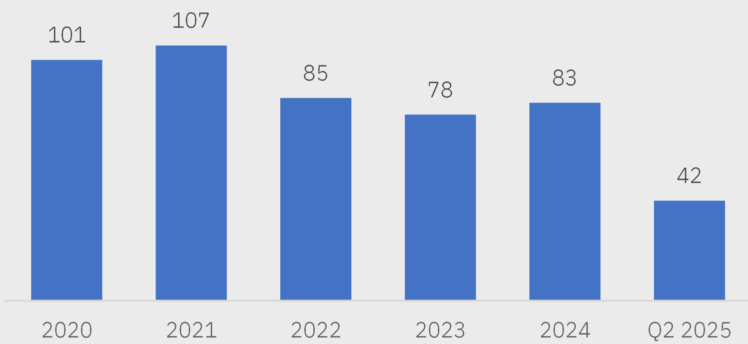
- Perforce has sought to make acquisitions in its end market focus areas of digital asset-intensive industries, such as media and gaming, with a focus on providing "DevOps at Enterprise Scale"

Broad Consolidation: Idera, Inc.

- Idera has executed a broad consolidation strategy, rolling up a variety of assets across test development and management, cloud migration and version control, content processing and API creation

Recent M&A Activity

M&A Volume By Year



Source: Shea & Company and 451 Research

- As business agility demands pressure software developers to deliver custom, high-quality products in shorter periods of time, IT organizations will continue to migrate to Agile and DevOps methodologies, which will drive a wave of consolidation
- Consolidation within application testing and release automation is already well underway, which we expect to continue as the market evolves and DevOps becomes even more mainstream; additionally, we expect the larger IT management software vendors to make strategic acquisitions in other Agile/DevOps driven market segments, including ALM, APM and automated testing, among others
- Driven by cloud and mobile initiatives, API management should also see continued consolidation

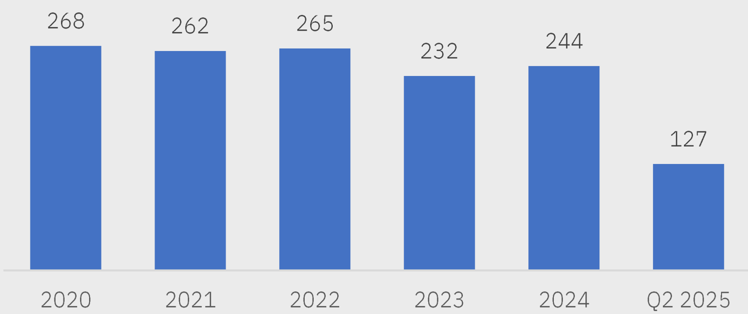
Select Transactions ($ million)

Date	Acquirer	Target	EV
05/14/25	databricks	NEON	$1,000m[a]
05/06/25	OpenAI	Windsurf	$3,000m
04/16/25	TURN/RIVER	solarwinds	$4,400m[a]
03/18/25	Google	WIZ	$32,000m[a]
12/03/24	SMARTBEAR	QMETRY	n/a
04/24/24	IBM	HashiCorp	$6,900m[a]
03/18/24	FP Francisco Partners	jama software	$1,200m
11/28/23	Rocket software	opentext	$2,275m[a]
09/21/23	cisco	splunk>	$26,460m[a]
07/31/23	FP Francisco Partners	new relic	$6,095m[a]
07/19/23	DELL Technologies	moogsoft	n/a
06/26/23	databricks	mosaicML	$1,300m[a]
04/17/23	DATADOG	Codiga	n/a
02/09/23	FP Francisco Partners	sumo logic	$1,700m
08/25/22	opentext	MICRO FOCUS	$5,880m[a]
04/09/22	PERFORCE	puppet	$300m[a]
05/05/21	THOMABRAVO	applitools	n/a

Sources: [a] 451 Group, other data from publicly available sources

Recent Capital Raise Activity

Capital Raise Count By Year



Source: Shea & Company and 451 Research

- DevOps funding continues to see healthy traction as the proliferation of point solution tools and use cases drives growth across all subsectors
- Businesses are pressured to meet accelerated product release cycles while optimizing cost efficiencies amid budget constraints for developer and QA engineering teams; as a result, new dev-focused subsectors have emerged from what was previously Ops domain (Release Automation/Orchestration, CI/CD, Application Performance Monitoring, etc.) or QA/CoE domain (Testing & Test Management)
- Automation is another key driver of funding spanning subsegments – as the talent shortage continues to grow and companies become ever more software-reliant and software-centric, opportunities to automate across the DevOps lifecycle enable customers to see increased productivity and gain a competitive edge

Select Capital Raises ($ million)

Date	Investor	Target	Amount Raised
06/05/25	THRIVE CAPITAL	CURSOR	$900m[a]
04/23/25	G2 VENTURE PARTNERS	cast	$108m[a]
04/23/25	ivp	Chainguard.	$356m[a]
03/13/25	Accel	supabase	$200m[a]
02/07/25	Accel	Graphite	$52m[a]
11/26/24	GTCR	Tricentis	$1,330m
05/16/24	BainCapital VENTURES	poolside	$500m[a]
05/16/24	Accel	Vercel	$250m[a]
11/01/23	FusionAuth	updata PARTNERS	$65m
02/23/23	a_capital	Adept	$350m
12/01/22	evolution EQUITY PARTNERS	snyk	$197m
10/01/22	KKR	outsystems	$228m
07/25/22	APOLLO	APTOS	$200m[a]
06/22/22	SILVERSMITH CAPITAL PARTNERS	Gearset	$55m
04/26/22	NORWEST	harness	$230m
12/13/21	X	Airtable	$735m
04/20/21	INSIGHT PARTNERS	Octopus Deploy	$173m

Sources: [a] Pitchbook, 451 Group, other data from publicly available sources

Major Application Development Subsectors & Market Trends

CI/CD

- The ARA market spans platforms and tools for release control, script automation and vertical collaboration
- The targeted nature of ARA tools drives the demand for CI/CD capabilities like feature flagging and release analytics
- The crave for high quality and velocity apps will only grow

Software Application Testing

- Relying solely on manual testing is no longer sustainable
- In the context of iterative development methods, consumers now expect higher quality applications and accelerated releases
- Having a variety of testing tools is vital for streamlining the app development process

Low and No-Code Solutions

- Rapid application development has forced companies to off-load both general and sophisticated tasks to non-technical users
- No-code and low-code tools offer non-technical user personas access and visibility into application management

DevSecOps

- Continuous development creates unforeseen functional and run-time vulnerabilities
- Companies are adopting a DevSecOps philosophy to embed security in each stage of the development lifecycle, enabling remediation prior to deployment

Observability & APM

- Real-time application performance defines the user experience and brand reliability
- APM tools ensure system-uptime with end-to-end observability, application KPI monitoring and incident resolution, resulting in optimal user experiences

Accessibility

- Optimization of web features beyond general compliance is necessary to reach all demographics of end-users
- Prioritizing software to meet accessibility criteria requires a nuanced toolkit for testing and end-user experience validation

Engineering Intelligence

- Manual collection of KPIs is costly, inaccurate and inefficient in an agile development context
- Engineering visibility allows executives to effectively communicate delivery expectations while avoiding pushed deliverable deadlines, frustrated business stakeholders and overburdened engineering teams

CI/CD is Streamlining and Accelerating the Software Development Lifecycle

Market Trends & Key Drivers

Evolution of Application Release Automation & CI/CD

- Software is the engine that powers all industries; however, creating and delivering software is not enough – developers must be able to keep up in a CI/CD context for application development
- The ARA market has emerged as a formal set of solutions to address the specific requirements of enterprises for deploying agile-based or web-based apps; ARA is being driven by companies' need to: i) push releases quickly and easily across all phases of the app lifecycle; ii) replace manual scripting with automation; and iii) establish and encourage collaboration between developers and admins
- Feature flagging and feature management have emerged as ways for vendors to further break down releases and gradually roll out features to end users

Market Maturity Driving M&A and New Entrants

- While new vendors continue to emerge, the market has reached a level of maturity where large vendors are recognizing the strategic nature and value of ARA tools; heritage vendors are beginning to add functionality in ARA either organically or through acquisitions

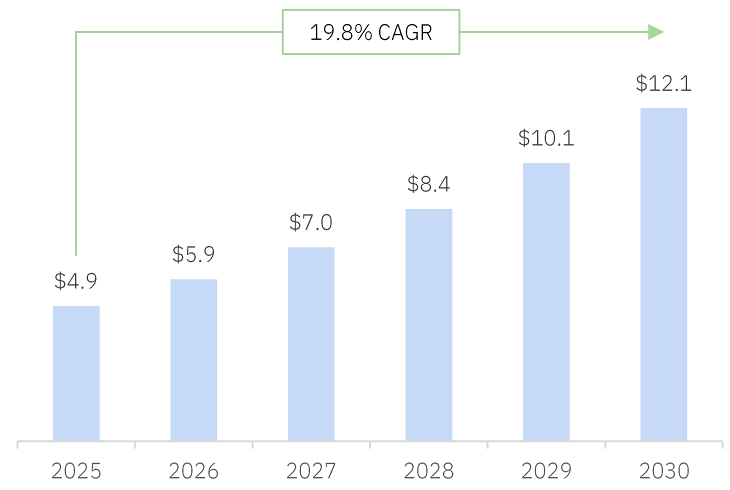
Continued Solution Integration and Feature Development

- While many ARA tools are currently used in a targeted fashion to address the app release process with a distinct set of actions, integration into an organization's larger DevOps, IT support and other CI/CD tools such as feature flagging and release analytics has begun in this space and is expected to be the next evolution of the sector
- ARA developers continue to broaden their view of continuous delivery and desire to move faster with greater control and security across all environments, including databases, middleware and app servers

Release Automation as an Anchor for DevOps

- Gartner estimates that 50% of global enterprises have implemented at least one ARA solution today, up from 10% just a few years ago. Demand for higher-quality and higher-velocity app releases continues to drive the adoption of ARA, as it becomes increasingly integral to enterprises' growth and execution strategy

ARA Market Growth ($ billions)



Notable Market Activity

Date	Acquirer	Target	EV
02/07/25	Prosperity7	OPSERA	$20m *Capital Raise*
07/17/24	Tricentis	Sealights	n/a
02/26/24	Octopus Deploy	codefresh	n/a
05/22/23	Insight Partners; salesforce ventures	COPADO	$26m *Capital Raise*
05/05/22	iqt IN-Q-TEL	weaveworks	n/a *Capital Raise*
04/26/22	NORWEST	harness	$230m *Capital Raise*
12/09/21	Goldman Sachs	CloudBees	$245m *Capital Raise*
04/20/21	Insight Partners	Octopus Deploy	$173m *Capital Raise*

Sources: 451 Group, other data from publicly available sources

Testing is *the* Critical Bottleneck in DevOps Adoption

Market Trends & Key Drivers

Large and Growing Market

- Test Management & Automation market growth driven by increased application complexity and strategic factors like corporate image and security; according to Gartner at $2.7 billion, growing at 9% CAGR

Overreliance on Manual Testers

- Manual testing is still the largest portion of time spent on a typical development project
  - 80% of testing is manual (Gartner) and $22 billion is spent annually on QA/test services at the global SI firms (IDC/Nelson Hall)
  - A recent Forrester survey found 46% of respondents "always" tested manually
- The shift to iterative development methods has strained software development processes heavily dependent on manual testing – much of this work is redundant, with repeat testing and other inefficiencies – and simply cannot keep up in a CI/CD context
- Manual testing remains important for the long tail of test cases, but automation brings faster cycle times and an increase in coverage; as a result the "mix" will shift

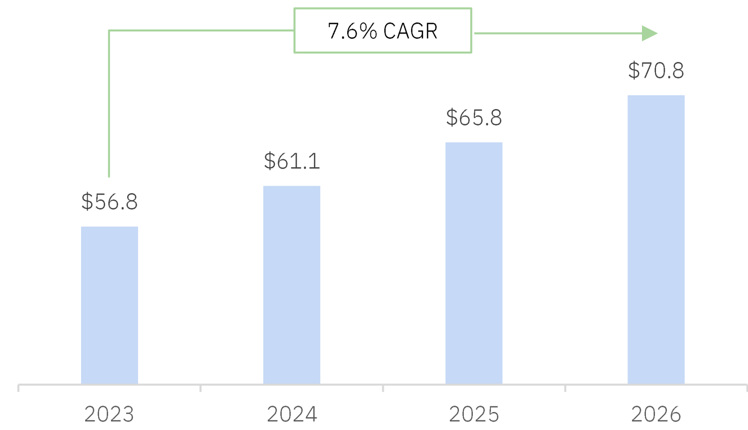
Continuous Delivery Requires Continuous Quality

- Testing is no longer a point-in-time event managed by dedicated QA resources; quality is now embedded in all stages of development
- Automation allows scaling of testing to fit disparate needs, but without the lead time and cost of increase testing infrastructure

Challenges to Adoption

- Adoption of test management and automation will frequently serve as the first step toward the adoption of more advanced automation tools
- However, the central challenge of most test solutions is the expertise required to create and maintain scripts – "loss of expertise" (i.e. a champion leaves the company) is the leading cause of churn at many enterprise test automation vendors

Testing & Quality Engineering Market Growth ($ billions)



Notable Market Activity

Date	Acquirer	Target	EV
05/01/25	DATADOG	eppo	$220m[a]
12/03/24	SMARTBEAR	QMETRY	n/a
11/26/24	GTCR	Tricentis	$1,330m *Capital Raise*
08/22/24	PEAKSPAN	opkey	$47m *Capital Raise*
02/13/24	Amplify	ANTITHESIS	$47m *Capital Raise*
06/07/22	TPG	SAUCE LABS	n/a *Capital Raise*
06/15/21	BOND	BrowserStack	$4,000m
05/05/21	THOMABRAVO	applitools	n/a
10/21/20	VISTA EQUITY PARTNERS	SMARTBEAR	n/a

Sources: [a] 451 Group, other data from Gartner, Forrester, IDC/Nelson Hall, Pitchbook

Low and No-Code: Solutions for Resource-Constrained Enterprises

Market Trends & Key Drivers

Bifurcating the Market

- No-Code "high productivity" platforms supporting workflow-based apps via a captive, proprietary runtime environment which IT generally does not control where development is led by "citizen developers" (notable vendors: Appian, Force.com, QuickBase)
- Low-Code "high control" vendors supporting development of sophisticated enterprise applications within the control environment of IT, and generally targeting developer audiences looking to augment or accelerate customer development efforts (notable vendors: Mendix, OutSystems, Uniface)

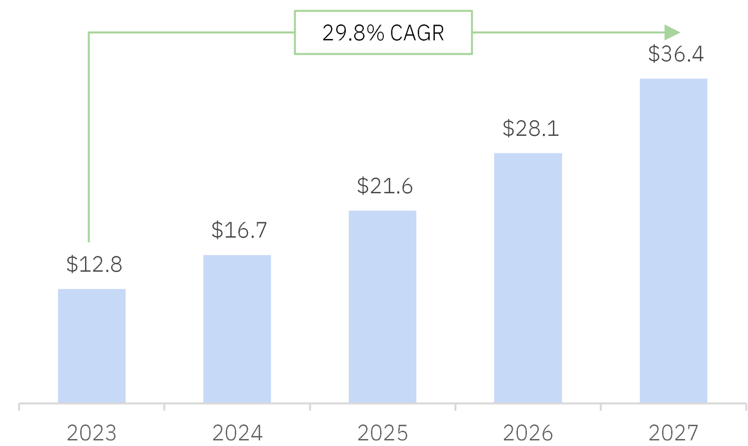
Demand for Agility and Responsiveness Push the Market

- Digital transformation, along with overly-strapped IT organizations, has provided the underpinnings for technologies which help developers quickly create applications, and platforms which allow business analysts and other non-developers to develop apps on their own
- Rapid application development (RAD) as a discipline has existed for quite some time, but as a market-ready technology had not taken off until recently, under the new banner of "low-code"
- Non-technical users are building and managing applications that run from general purpose to sophisticated and scalable, using "drag-and-drop" composition for quick UI creation across mobile, web and cloud
- Gartner predicts that by 2024, 75% of large enterprises will be using at least four low-code development tools for IT application development as well as citizen development initiatives

Fragmented Market, Ripe for Investment and Consolidation

- The low-code, no-code market is highly fragmented, with a broad group of vendors generally segmented along productivity / control lines
- This market has seen considerable uptake from enterprise customers, and supported several notable liquidity events, including public exits (Appian), strategic M&A (Kony) and LBOs (QuickBase) as well as notable funding events at OutSystems

Low-Code and No-Code Market Growth ($ billions)



Notable Market Activity

Date	Acquirer	Target	EV
05/21/25	Kleiner Perkins	Superblocks	$23m *Capital Raise*
11/29/24	Volaris	4D	n/a
06/10/24	Volition Capital, Sapphire Ventures	Creatio	$200m *Capital Raise*
12/12/23	nintex	skuid	n/a
02/06/23	Jitterbit	ZUDY	n/a
10/01/22	KKR	outsystems	$230m *Capital Raise*
12/13/21	XN	Airtable	$735m *Capital Raise*
02/22/21	Volition Capital, Horizon Capital	Creatio	$68m *Capital Raise*

Sources: 451 Group, other data from publicly available sources

DevSecOps: As the Perimeter Evaporates, Applications Must be Secure by Design

Market Trends & Key Drivers

Integration of IT Security into DevOps

- As applications, data and users are increasingly outside the confines of the datacenter's firewall, the "perimeter" first spread to the individual and device level (e.g., IAM/IdM) then further fragmented into security maintained at the application and service level – the threat surface is continually growing
- As with functional/performance bugs, catching security vulnerabilities earlier in the development lifecycle is order of magnitude less expensive than production
- According to a 2018 Forrester survey, direct web application attacks and exploitation of software vulnerabilities were the top two methods of external attacks
- DevSecOps, a development approach which embeds security practices and tools into each phase of the DevOps pipeline (mirroring the "shift left" in testing), embeds automated security controls, checks, tests, etc., embedding built-in security that is adaptable while still maintaining robust functionality

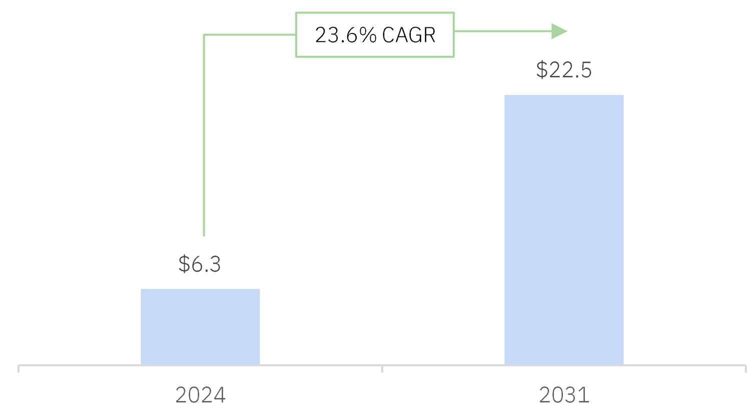
Secure by Design

- Rising cyber security concerns necessitate DevOps tools that provide built-in security rather than being implemented from the outside
- In addition to creating more secure applications, security built into the DevOps toolchain enables problems to be detected earlier and remedied prior to deployment
- DevSecOps implementation helps address the sometimes-competing priorities of development, IT operations and security teams

The Challenge is Adoption

- Security remains very much a top-down selling and adoption path; CSOs have tremendous budget and ability to dictate tooling decisions – this is directly at odds with the adoption path in DevOps
- Budget for DevSecOps pulls from either Test or Security wallets – both of which are deep at most enterprises – the challenge remains how to insert DevSecOps into the practitioner-led adoption motion common within Dev and Test teams

DevSecOps Market Growth ($ billions)



Notable Market Activity

Date	Acquirer	Target	EV
07/03/25	verdane	GUARDSQUARE Mobile application protection	n/a
04/23/25	ivp	Chainguard.	$356m *Capital Raise*
04/14/25	DFJ GROWTH	ENDOR LABS	$93m *Capital Raise*
10/29/24	DTCP M12	zenity	$38m *Capital Raise*
05/06/24	Clearlake, FP Francisco Partners	SYNOPSYS	$1,625m[a]
01/16/24	snyk	Helios	n/a
01/03/24	evo/ution Equity Partners, Kreos Capital	aqua	$195M *Capital Raise*
04/29/22	TA ASSOCIATES	VERACODE	$2,500m *Capital Raise*
04/12/22	ADVENT Capital Management, LLC	sonar	$412m *Capital Raise*

Shea & Company

Sources: [a] 451 Group, other data from publicly available sources

Observability & Application Performance Monitoring

Market Trends & Key Drivers

Mission Criticality of APM in a Highly Digitized Economy

- Application performance monitoring (APM) is the practice of tracking key software application performance metrics using monitoring software and telemetry data
- Practitioners use APM to ensure system availability, optimize service performance & response times and improve user experiences for mobile apps, websites and business applications
- According to Forrester, 62% of sales are digitally influenced; when an app crashes or faces slow load times, this can cause businesses to suffer brand damage and lose significant amounts of revenue
- Digital teams often find it difficult to find the root cause of an application performance problem, from coding errors to database slowdowns to hosting or network performance issues – highlighting the necessity of APM tools for developer and QA teams

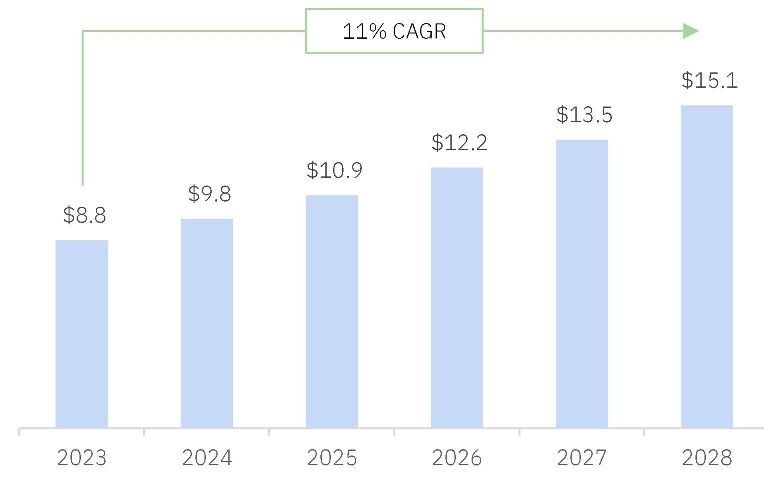
Core Features of APM Tools – Developer Oriented Observability

- Modern APM platforms and tools cover a broad range of use cases, including: i) end-to-end observability of an application's complete behavior and effects on user experience, ii) mobile and desktop application monitoring to track user experience across platforms, iii) root cause and impact analysis for streamlined incident resolution, iv) business KPIs and user journey analysis to optimize user experiences and v) endpoint monitoring to understand how mobile applications impact endpoint devices
- Developers that sit earlier in the application development lifecycle are becoming increasingly involved with tools that offer increased visibility and intelligence into the performance of their applications; detecting and pinpointing performance issues before real users are impacted enables developers to these address issues during production

APM Market Outlook

- The APM market is largely dominated by vendors of scale that are competing for the same wallet share
- There are a handful of smaller APM players given the adjacencies between APM and broader software testing tools for applications, signifying further opportunities for consolidation in the market

APM Market Growth ($ billions)



Notable Market Activity

Date	Acquirer	Target	EV
02/26/25	PSG	checkmk	n/a
04/16/25	TURN // RIVER	solarwinds	$4,400m[a]
08/21/24	Lightspeed	Grafana	$328m *Capital Raise*
03/18/24	Cisco	splunk>	$27,090m
07/31/23	FP	new relic	$6,095m[a]
02/09/23	FP	sumo logic	$1,700m
06/21/22	Battery	LogRocket	$25m *Capital Raise*
01/23/17	Cisco	AppDynamics	$3,700m[a]

Sources: [a] 451 Group, other data from publicly available sources

Accessibility has Become a Core Development Objective

Market Trends & Key Drivers

Creating Software that is Accessible to All Demographics

- Millions of people access the web with some form of visual, auditory and/or mobility impairment – the ultimate success of a web application relies on how well it can be navigated by those with such impairments
- Web accessibility testing software deals with testing the features of a web application in a way that ensures all users, irrespective of most disabilities, will be able to interact with the software to its full potential
- Accessibility is also a necessity – the federal government has put legislation in place to ensure digital content is as accessible as possible through the Web Content Accessibility Guidelines (WCAG), Section 508 and Americans With Disabilities Act (ADA)
- To stay relevant in the industry and differentiate from competition, simply meeting compliance standards is no longer sufficient; robust web accessibility testing ensures that applications exceed standard compliance protocols and put in place user-friendly accessibility options that enhance the overall UX

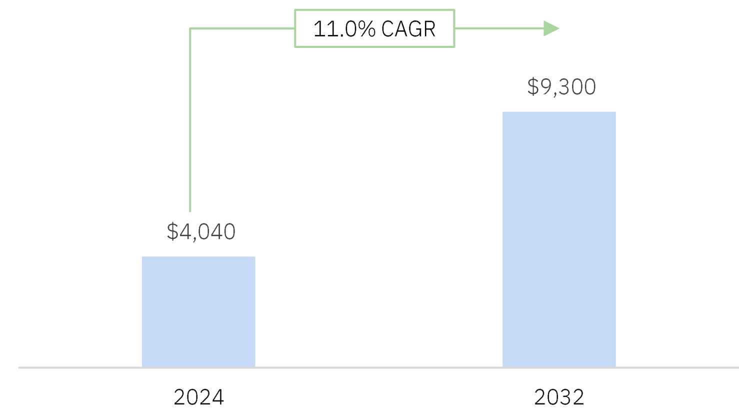
Catering Automated Accessibility for End Users

- Automated accessibility tools /overlays designed to fix original coding errors and add more accessible features have caused page reformats and changes that make it difficult for blind users to navigate websites
- Ensuring that accessibility widgets and overlays do not interfere with screen readers and other software already utilized by disabled or blind website users is critical – businesses must focus on the full scope of the end user experience beyond just meeting compliance standards

Market Impacts of Accessibility

- In 2021, more than 400 companies with an accessibility widget or overlay on their website were sued over accessibility rights, demonstrating a lack of depth from automated widgets and the need for full-service, nuanced offerings to meet the diverse set of user needs
- Web accessibility is not just yesterday's compliance challenge but is now materially revenue-impacting; with 75% of all US citizens with disabilities using the web on a daily basis, companies ill-prepared to meet today's standards will continue to lose customers and may incur material reputation and financial repercussions

Web Accessibility Market Growth ($ millions)



Notable Market Activity

Date	Acquirer	Target	EV
12/12/24	Insight Partners	evinced	$55m *Capital Raise*
03/20/24	level access	UserWay	$99m
10/05/22	crownpeak	iLumino	n/a
06/14/22	Level Access	Essential Accessibility	n/a
05/17/22	Five Elms Capital	Fable	$11m *Capital Raise*
04/05/22	K1 / Glilot Capital Partners	accessiBe	$33m *Capital Raise*
03/10/22	audioeye	Bureau of Internet Accessibility	$8m
01/01/21	KKR	Level Access	n/a *Capital Raise*
09/03/20	Nordic Capital	Siteimprove	$592m

Engineering Intelligence Driving Accountability & Productivity

Market Trends & Key Drivers

Communicating the Impact of Engineering

- Application development has grown beyond execution to become a driving force behind success with customers – and as the mission-critical nature of software has become more evident, enterprises have been forced to rethink the way they track and manage the SDLC at the enterprise level
- The need to bring visibility and predictability to the R&D line has become a key priority for both engineering leadership and the C Level, and allowing enterprises to optimize investment, track and manage costs and more closely align R&D with overall business strategy
- Manual collection of these metrics is costly and borderline impossible, and developers have little tolerance for any overhead or latency in the SDLC – vendors must leverage the "data exhaust" from existing software tooling and integrate across the SDLC (version control, work management, test management, etc.)

Defining Different Perspectives of Key Engineering Metrics

- Org-level metrics define a clear, high-level view of a company's capability to deliver against its R&D roadmap and meet strategic goals; by rolling up every developer and process into a singular view, C Level executives can track progress, allocation of effort and investment goals
- Team-level metrics create a more focused view into the day-to-day operations of an engineering team; this perspective helps development managers easily diagnose bottlenecks and allocate scarce developer resources effectively

Market Outlook

- It has become clear that companies are in need of more effective ways to hold internal teams accountable – a recent Planview (owner of Tasktop) survey found 40% of R&D effort is wasted within technology organizations
- The same survey found 70% of firms are planning to implement engineering intelligence in their DevOps pipeline, leading to both improved flow and faster delivery of customer value
- Funding and investment activity has to this point been less aggressive than other sectors of application development – given the strategic importance of Engineering Intelligence we expect an inflection

Key Disciplines of Engineering Intelligence

- **Strategy & Business Alignment –** Clearly articulated view on what engineering teams are working on and the material value added by prioritizing that work
- **Engineering & Product Operations –** Holistic awareness of technical operations to easily diagnose a strategic alignment or team health problem
- **Delivery Management –** The ability to monitor and communicate deliverable status and proactively facilitate the on-time delivery of projects
- **Team Health –** Positive work culture to collaborate effectively, manage conflict respectfully and develop career opportunities efficiently
- **Financial Acumen –** Transparency, understanding and maturity of financial operations to make efficient and effective decisions to drive material returns

Notable Market Activity

Date	Acquirer	Target	EV
06/18/25	karma.vc	swarmia	$11m *Capital Raise*
09/18/24	planview	Plutora	n/a
09/06/24	Accel	port	$35m *Capital Raise*
07/19/23	DELL Technologies	moogsoft	n/a
04/01/22	TRIBE CAPITAL	LINEARB	$50m *Capital Raise*
02/01/22	INSIGHT PARTNERS	JELLYFISH	$71m *Capital Raise*
09/01/21	PSG	CODE CLIMATE	$50m *Capital Raise*
04/06/21	VISTA	PLURALSIGHT	$3,500m

Sources: Jellyfish Software's Engineering Management Report; LinearB's Engineering Metrics Report; Planview's 2023 Buyer's Guide for Value Stream Management Platforms; other data from publicly available sources

Selected Notable Companies

ATLASSIAN

Theme: Collaboration & Issue Tracking

Atlassian provides software development and collaboration tools to help teams conceive, plan and launch products. The company's Jira product is a project management and issue tracking tool that helps product teams manage issues, bugs, tasks and deadlines. Confluence is a content collaboration tool enabling teams to create, share and discuss documents and media. In 2015, the company raised $462 million via IPO.

Employees: 17,778

Key Executives: Mike Cannon-Brookes (CEO), Anu Bharadwaj (President), Joe Binz (CFO)

Investors: Publicly traded

circleci

Theme: CI/CD

CircleCi is a developer of a continuous delivery automation platform designed to offer automated testing and continuous integration tools. The company's continuous integration platform helps developers to rapidly code, for web and mobile applications by automating the build, test and deployment process quickly, safely and at scale, enabling businesses to detect and fix bugs before they even reach customers.

Employees: 341

Key Executives: Jim Rose (CEO), Chitra Balasubramanian (CFO), Rob Zuber (CTO)

Investors: Base10 Partners, Eleven Prime, NP Capital, IVP, Sapphire Ventures, Heavybit, NextEquity Partners, Industry Ventures

CloudBees.

Theme: Application Release Orchestration

Cloudbees offers a cloud-based platform designed to provide software delivery of businesses. The company's platform provides a wide range of continuous delivery services, enabling businesses to meet the unique security, scalability and manageability needs. The end-to-end automated software delivery system allows companies to balance governance and developer freedom.

Employees: 595

Key Executives: Anuj Kapur (CEO), Audrey Zhao (CFO)

Investors: Bridgepoint Capital, Eight Roads, Goldman Sachs, Morgan Stanley, HSBC Ventures, Ascent Ventures, Delta-v Capital, Unusual Ventures, Verizon Ventures, Lightspeed Venture Partners

DATADOG

Theme: Application Performance Monitoring

Datadog Inc is a monitoring and analytics platform for developers, IT operations teams and business users. Its platform integrates and automates infrastructure monitoring, application performance monitoring and log management. The solutions offered by the company include Financial Services, Manufacturing & Logistics, Media & Entertainment and Gaming among others.

Employees: 9,532

Key Executives: Olivier Pomel (CEO & Co-Founder), Alexis Lê-Quôc (CTO & Co-Founder), David Obstler (CFO)

Investors: Publicly traded

Sources: publicly available sources

Selected Notable Companies Continued

digital.ai

Theme: End-to-End DevOps Platform

CollabNet VersionOne's upstream Agile planning and enterprise version control functionality is united with XebiaLabs' downstream release orchestration and deployment automation capabilities and Arxan's application security suite to create an end-to-end platform for enterprise DevOps, now known as Digital.ai. The company provides end-to-end intelligent value stream management, software delivery and application security in a unified platform.

Employees: 1,025

Key Executives: Derek Holt (CEO), Mike Davey (CRO)

Investors: TPG Capital

Gearset

Theme: Release Automation

Gearset is a release management software created to make deployment and collaboration ingeniously simple. The platform features comparing metadata differences, extend to any git-based version control repository, roll-backs all unwanted changes, annotates deployments, provides detailed reports as well as analyzes and identifies issues with coding, enabling clients to make tracking, testing and deploying changes faster and easier.

Employees: 334

Key Executives: Kevin Boyle (CEO & Co-Founder), Matt Dickens (CPO & Co-Founder)

Investors: Silversmith Capital Partners

GitHub

Theme: Source Code Repository & Management

GitHub provides a social network platform for programmers to share code with friends, co-workers and complete strangers, making it easier for individuals and teams to write better code, faster. The solution is built for software development projects using the Git revision control system and offers paid plans for private repositories and free accounts for open source projects.

Employees: 5,485

Key Executives: Thomas Dohmke (CEO), Kyle Daigle (COO), Elizabeth Pemmerl (CRO)

Investors: Acquired by Microsoft for $7.5Bn

GitKraken

Theme: Developer Experience

GitKraken is a developer of project management software designed to help software developers and teams become more productive. The company's cross-platform suite offers a visual way of managing both public and private source code repositories along with issue tracking and planning solutions that suggest project progress via a series of sprints, enabling clients to complete their projects on time and efficiently manage bug fixing.

Employees: 101

Key Executives: Matt Johnston (CEO), Dick Davidson (CFO)

Investors: Resurgens Technology Partners

Sources: publicly available sources

Selected Notable Companies Continued

Theme: Requirements and Test Management

Jama provides a product delivery platform that helps companies bring complex products to market. The company's collaborative solution integrates requirements and test management. Distributed teams can join real-time discussions, propose edits, flag issues and electronically sign-off on requirements. All documents reside in one centralized place and documents and product details can be reused on future products. In 2024, the company was acquired by Francisco Partners for $1.2Bn.

Employees: 298

Key Executives: Marc Osofsky (CEO), Mark Litz (CFO)

Investors: Francisco Partners

Theme: End-to-End DevOps Platform

Provider of end-to-end DevOps platform for accelerating and optimizing enterprise software delivery. The company's platform spans centralized artifact repository management for all types of binaries and container images; security vulnerability and licenses compliance scanning enabling DevSecOps; CI/CD pipeline automation; and private, secured CDN for distribution of applications from any source to any deployment target. Offered as a self-hosted or cloud SaaS solution. In 2020, the company raised $509 million via IPO.

Employees: 2,150

Key Executives: Shlomi Ben Haim (CEO & Co-Founder), Yoav Landman (CTO & Co-Founder)

Investors: Publicly traded

Theme: No-Code Test Automation

Developer of a process automation platform designed to automate tasks and monitor critical applications. The company's platform features a visual system with a simple user interface instead of a code-based system to offer end-to-end verification and eliminate maintenance to drive speed and efficiency in software testing, enabling users to become productive while lowering costs, reducing risk and improving product quality.

Employees: 277

Key Executives: Christian Brink Frederiksen (CEO & Co-Founder), Claus Topholt (CPO & Co-Founder), Andras Mecser (CFO)

Investors: KKR, Salesforce Ventures, Burgeon Invest, Headline, DN Capital

Theme: DevSecOps

WhiteSource is a developer of an open-source security platform designed to provide security by combating associated vulnerabilities. The company's platform fully automates the entire process of open-source components management, including real-time security alerts on vulnerable components, enabling clients to ensure the continuity and integrity of open-source management and reduce respective risks.

Employees: 282

Key Executives: Rami Sass (CEO & Co-Founder), Azi Cohen (President & Co-Founder), Ilan Sidi (CFO)

Investors: Big-Tech 50, Pitango Ventures, Poalim Equity, Union Tech Ventures, Susquehanna Growth Equity, M12, 83 North

Sources: publicly available sources

Selected Notable Companies Continued

Octopus Deploy

Theme: CI/CD

Octopus is a continuous integration platform intended to deploy software and deliver projects for enterprises and mid-sized companies. The company develops a server to enable reliable, secure, automated releases of applications and Windows services into test, staging and production environments, whether they are in the cloud or on-premise, enabling clients to automate deployments and operations runbooks from a single place.

Employees: 351

Key Executives: Paul Stovell (CEO), Sonia Stovell (CFO)

Investors: Insight Partners

outsystems

Theme: Low-code Platform

OutSystems provides low-code development with advanced mobile capabilities, enabling visual development of entire application portfolios that easily integrate with existing systems. Comprehensive metadata models enable configuration of application layers like business processes, integration workflows, UIs, business logic, data models, web services and APIs. Applications are developed using native desktop tools and deployed on-premises, or in a private or public cloud and are usable with Web and mobile devices.

Employees: 2,000

Key Executives: Paulo Rosado (CEO), Andy Pemberton (CRO)

Investors: Abdiel Capital, Chamaleon, Tiger Global Management, General Atlantic, KKR, Goldman Sachs

PERFORCE

Theme: End-to-End DevOps Platform

Perforce provides a versatile software development platform for implementing fast and scalable continuous delivery. The Perforce product is applicable in a variety of industries and allow for hybrid version control for both distributed and centralized workflows, collaboration for both technical and non-technical staff, change history tracking and enterprise Git management for more complete Git management and social code review.

Employees: 1,699

Key Executives: Jim Cassens (CEO), Mike Goergen (CFO)

Investors: Francisco Partners, Clearlake Capital

POSTMAN

Theme: API Lifecycle Management

Provider of a collaboration platform designed to offer application program interface. The company's platform creates and sends HTTP requests, creates collections and folders to group requests logically, save requests, switches contexts and customize with scripts to simplifying collaboration across your teams and organizations, enabling developers to build application programming interface and improve developer productivity.

Employees: 3,068

Key Executives: Abhinav Asthana (CEO & Co-Founder), Ankit Sobti (CTO & Co-Founder)

Investors: Firebolt Ventures, Battery Ventures, Bond Capital, Coatue Management, Insight Partners

Selected Notable Companies Continued

redgate

Theme: Database Deployment & Monitoring

Redgate is a developer of an end-to-end database development software designed to protect and preserve business-critical data. The company's software offers to standardize team-based development, automate database deployments and monitor performance and availability, enabling businesses to include the database in development operations.

Employees: 574

Key Executives: Simon Galbraith (Co-Founder & Board Chair), Jakub Lamik (CEO), Steve Mitchell (CFO)

Investors: Bootstrapped

mabl

Theme: Test Automation

Mabl is a developer of an intelligent test automation platform designed to improve the speed and quality of the release pipeline. The company's platform helps software teams test at pace with the rapid speed of agile and DevOps delivery as well as permits enterprises to move faster and accelerate innovation, enabling developers and testers to resolve bugs before they reach production.

Employees: 112

Key Executives: Dan Belcher (CEO), Izzy Azeri (Co-Founder)

Investors: Vista Equity Partners, Presidio Ventures, GV, Amplify Partners, CRV

SMARTBEAR

Theme: Test Automation & Management

SmartBear provides a suite of tools for developers, testers and operations professionals for all stages of software development, from software development, to QA & testing, to web & app monitoring. The firm provides code review, automated testing, performance/load testing, API testing, performance profiling and development management tools. SmartBear's tools are highly flexible, and can be used for desktop, mobile, Web and cloud-based applications.

Employees: 1,022

Key Executives: Dan Faulkner (CEO), Shital Whitmore (CFO), Martin Musierowicz (CRO)

Investors: Francisco Partners, Vista Equity Partners

Tricentis

Theme: Test Automation & Management

Tricentis provides software testing products that enable enterprises to achieve unprecedented automation rates while minimizing business-related risks. The solutions empower organizations to systematically align software testing with business needs, so they can harness technology change while optimizing cost and efficiency. The company's testing solution encompasses risk-based testing, test data management and provisioning, service virtualization and quality assurance services.

Employees: 1,588

Key Executives: Kevin Thompson (CEO), Dave Hafner (CFO)

Investors: GTCR, Insight Partners

Sources: publicly available sources

The Leading Advisor in DevOps and Application Development

DevOps & DevTools are core competencies for our firm; we have been among the most active advisors (if not the most active), completing multiple market-defining transactions with leading companies spanning the software development lifecycle

Thought Leader in the DevOps Market

- We have completed transactions across the market, working on both buy-side and sell-side engagements, and interacting regularly with all the relevant players in these sectors to deliver superior outcomes and support market developments
- Established recurring dialogue with the leading private equity investors, strategic acquirers and market leading companies in the DevOps ecosystem
- Multiple active mandates spanning the DevOps lifecycle provide holistic industry knowledge and connections to achieve a desired outcome
- Comprehensive DevOps industry insight developed using the latest data gathered from industry practitioners

Dedicated Shea & Company DevOps Team

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Recent Experience

GUARDSQUARE Mobile application protection has received an investment from verdane	AVANTRA has received an investment from RESURGENS TECHNOLOGY PARTNERS	Lansweeper has received a minority investment from INSIGHT PARTNERS
SMARTBEAR has received an investment from VISTA EQUITY PARTNERS	Octopus Deploy has received an investment from INSIGHT PARTNERS	VITRUVIAN PARTNERS has made a majority investment in azul
Gearset has received an investment from SILVERSMITH CAPITAL PARTNERS	UNIFACE has been acquired by Rocket software	digital.ai has acquired experitest
SMARTBEAR has acquired Test Management for Jira	RogueWave SOFTWARE has been acquired by PERFORCE	XebiaLabs has been acquired by TPG
PERFORCE has received an investment from FP FRANCISCO PARTNERS	outsystems has received an investment from Guidepost GROWTH EQUITY	PERFORCE has been acquired by CLEARLAKE

About Our Firm

1	2	45+	$50Bn+	40%	155+
Firm focused exclusively on enterprise software	Offices in Boston and San Francisco	Professionals focused on the software industry	Advised aggregated transaction value	Transactions with a Cross-Border Component	Transactions completed representing billions of dollars in value

Mergers & Acquisitions, Private Placements & Capital Raising

Shea & Company has advised on important transactions representing billions of dollars in value across the strategic acquirer and financial investor landscape with clients in the U.S. as well as Canada, Europe and Israel.

- GUARDSQUARE Mobile application protection has received an investment from verdane. Shea & Company served as the exclusive financial advisor to Guardsquare
- AVANTRA has received an investment from RESURGENS TECHNOLOGY PARTNERS. Shea & Company served as the exclusive financial advisor to Avantra
- Octopus Deploy has received an investment from INSIGHT PARTNERS. Shea & Company served as the exclusive financial advisor to Octopus Deploy
- SMARTBEAR has received an investment from VISTA EQUITY PARTNERS. Shea & Company served as financial advisor to SmartBear and Francisco Partners
- Lansweeper has received an investment from INSIGHT PARTNERS. Shea & Company served as the exclusive financial advisor to Lansweeper
- Perfecto has been acquired by PERFORCE. Shea & Company served as the exclusive financial advisor to Perfecto
- PingIdentity has received a strategic investment from W Capital Partners, DFJ, svb Silicon Valley Bank. Shea & Company served as the exclusive placement agent
- outsystems has received an investment from Guidepost Growth Equity. Shea & Company served as the exclusive placement agent
- UNIFACE has been acquired by Rocket software. Shea & Company served as the exclusive financial advisor to Uniface
- ibi Information Builders has been acquired by TIBCO. Shea & Company served as the exclusive financial advisor to ibi
- DECIBEL has been acquired by Medallia. Shea & Company served as the exclusive financial advisor to Decibel
- Prophix has received a majority investment from Hg. Shea & Company served as the exclusive financial advisor to Prophix
- Gearset has received a strategic investment from SILVERSMITH CAPITAL PARTNERS. Shea & Company served as the exclusive financial advisor to Gearset
- SMARTBEAR has acquired bitbar. Shea & Company served as the exclusive financial advisor to SmartBear
- VITRUVIAN PARTNERS has made a majority investment in AZUL SYSTEMS. Shea & Company served as financial advisor to Vitruvian
- ivanti a portfolio company of CLEARLAKE, TA ASSOCIATES has acquired mobileiron, Pulse Secure. Shea & Company served as the exclusive financial advisor to TA Associates
- XebiaLabs Enterprise DevOps has been acquired by TPG. Shea & Company served as the exclusive financial advisor to XebiaLabs
- PERFORCE has received an investment from FP FRANCISCO PARTNERS. Shea & Company served as financial advisor to Perforce and Clearlake
- mimecast unified email management has received an investment from INSIGHT PARTNERS. Shea & Company served as the exclusive financial advisor to Mimecast
- RogueWave SOFTWARE has been acquired by PERFORCE. Shea & Company served as financial advisor to Rogue Wave
- digital.ai has acquired experitest. Shea & Company served as financial advisor to Digital.ai