

The Forrester Wave™: Low-Code Development Platforms For AD&D Pros, Q4 2017

The 13 Providers That Matter Most And How They Stack Up

by John R. Rymer
October 12, 2017

Why Read This Report

In our 26-criteria evaluation of low-code development platforms for application development and delivery (AD&D) pros, we identified the 13 most significant options — AgilePoint, Appian, Bizagi, K2, Kony, Mendix, OutSystems, PNMsoft, Progress Software, Salesforce, ServiceNow, Skuid, and Trackvia — and researched, assessed, and scored them. This report shows how each provider measures up and helps AD&D professionals make the right choice.

Key Takeaways

Appian, Kony, Mendix, OutSystems, And Salesforce Lead The Segment

Forrester's research uncovered a market in which Appian, Kony, Mendix, OutSystems, and Salesforce provide the broadest and deepest platforms. AgilePoint, Bizagi, K2, and ServiceNow offer competitive options. Skuid and Trackvia address niches. PNMsoft and Progress Software lag behind.

AD&D Pros Are Looking For Speedy App Delivery And Continuous Innovation

Many AD&D pros see low-code platforms as a way to very quickly deliver applications that win, serve, and retain customers — and to nimbly evolve those apps. AD&D leaders increasingly trust low-code platform vendors to address today's use cases, as well as apps using machine learning (ML), natural-language processing (NLP), and other innovations.

Access To Tech Innovations And Accessible Business Models Are Key Differentiators

Access to innovations including NLP, ML, and real-time sensor data are key distinctions among these vendors' products. But business models allowing low-friction access to platforms and nurturing partner relationships that produce packaged apps and integration adapters are equally important to future success in this market.

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Low-Code Platform Sophistication — And AD&D Value — Is Growing

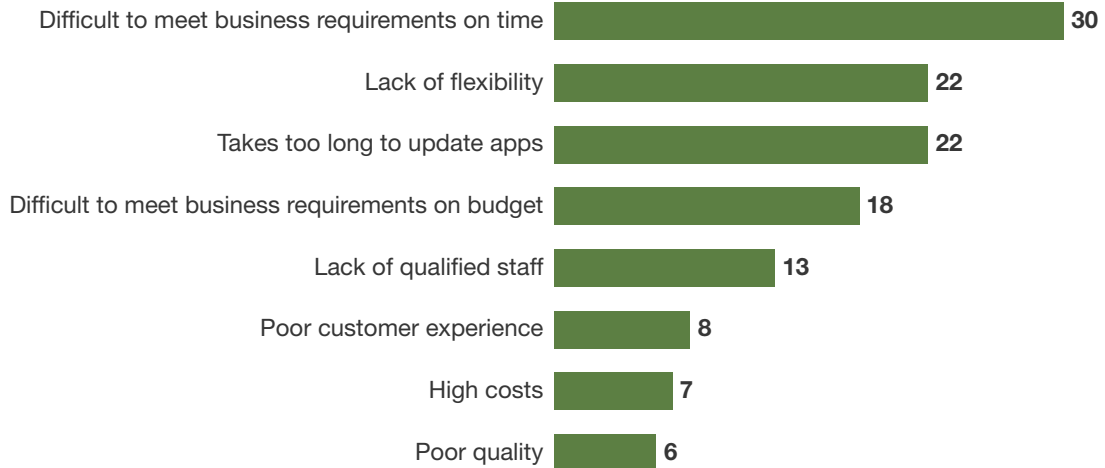
Mounting evidence shows that low-code development platforms are here to stay. Why? Because low-code platforms:

- › **Speed up application and innovation delivery.** Our July 2017 survey of 41 AD&D leaders using low-code platforms highlights their goal of dramatically raising their teams' ability to respond in time to demands for business software. Most of these leaders are satisfied with the results (see Figure 1).
- › **Prove useful for large-scale applications.** AD&D leaders who adopt low-code development platforms do so with big expectations. Detractors in this segment assert that low-code platforms are only good for “departmental” (code for small, noncritical) applications, but this usually isn't the case. Many adopters apply the platforms to applications used across the enterprise or by multiple departments (see Figure 2).
- › **Contribute to AD&D's move to public clouds.** Adopting public cloud services, ranging from full applications to infrastructure services, remains a major goal of enterprises worldwide.¹ As low-code vendors have built public cloud services accessible via self-service interfaces, these platforms have emerged as one of three major platform-as-a-service (PaaS) options.² And so AD&D leaders will sometimes adopt low-code platforms as an avenue to broader public cloud services.

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FIGURE 1 Low-Code Customers Seek Quicker App Delivery — And Get It

1-1 “What are the challenges your organization faces in building custom applications using traditional coding with programming languages, frameworks, and middleware?”
 (Multiple responses accepted)



1-2 “Have low-code development platforms addressed these issues?”



Base: 41 AD&D leaders using low-code platforms

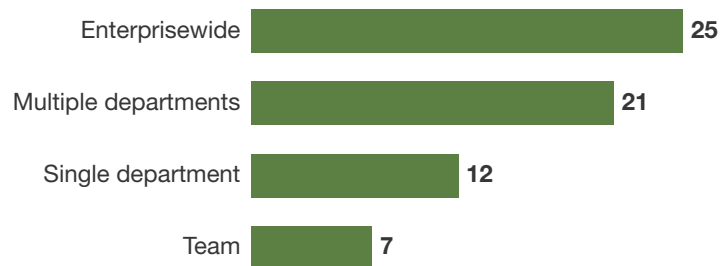
Note: “Other” and “none” responses have been excluded.

Source: Forrester’s Q4 2017 Global Low-Code Development Platforms Forrester Wave™ Customer Reference Online Survey

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FIGURE 2 The Scope Of Low-Code Platform Usage Often Extends To Enterprise

“What is the scale of applications your organization develops using this/these platform(s)?”



Base: 41 AD&D leaders using low-code platforms

Source: Forrester's Q4 2017 Global Low-Code Development Platforms Forrester Wave™ Customer Reference Online Survey

Low-Code Development Platforms Defined

Forrester defines low-code development platforms as:

Products and/or cloud services for application development that employ visual, declarative techniques instead of programming and are available to customers at low- or no-cost in money and training time to begin, with costs rising in proportion of the business value of the platforms.

We use the term low-code because many enterprise applications built with these platforms will require some coding to complete. Typically, AD&D teams working with low-code platforms use coding to integrate access to older applications, for reporting, and for special user interface (UI) requirements.

Platforms That Empower AD&D Pros Lead The Low-Code Trend

Our assessment includes 13 platforms that are most valuable when put in the hands of AD&D pros. These products:

- › **Cater to pro developers with rich sets of controls and deep features.** Developers adopting low-code platforms want dramatically higher productivity without sacrificing features that allow them to get under the hood if the application they're building calls for it. The vendors in our assessment serve pro developers — generally — by providing a rich array of UI controls; deep features in data management and reporting, integration, process automation, app management and scaling, and other aspects of AD&D; and extensive configuration options.

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- › **Risk overwhelming two citizen developer personas.** Feature richness for pro developers creates complexity challenges for people without development skills and backgrounds. Among citizen developers, business developers and power users will be overwhelmed by low-code platforms designed for AD&D. Line of business (LOB) developers have a better chance of succeeding, but they're AD&D pros in training.³ Recognizing this, several of the vendors we evaluated have created specific tools for citizen developers without development experience, whose output pro developers can incorporate into their projects. In our assessment's "Citizen developer tools" criterion, we recognize only tools built for these nonprofessional developers.
- › **Support developer-business expert collaboration in app projects.** Many enterprises adopt low-code platforms for use by their AD&D pros, but expect AD&D teams to invite collaboration by citizen developers and other business pros. All of the platforms in our assessment support this app-delivery approach well, making it easy for business experts and AD&D pros to test ideas together on the low-code platform.
- › **Are capturing the lion's share of revenue in the low-code platform market.** Forrester's analysis of the low-code platforms market shows that vendors creating platforms for AD&D pros are in a dominant position.⁴ One or two of the vendors creating low-code platforms for citizen developers have substantial revenues, but most are still small.

Five Big Distinctions Stand Out In Our Assessment

Our assessment gives the highest marks to vendors and platforms that address the widest range of use cases, including emerging scenarios in artificial intelligence (AI) and the internet of things (IoT). This is the point of view of enterprise AD&D leaders seeking products with years of strategic value. The biggest distinctions in our analysis are:

- › **Breadth and depth of development services and tools.** Only a subset of vendors — the Leaders and those close behind — scored well across the board in our functional criteria. These vendors have not only implemented a broad range of user-interface, process, data management, reporting, app-management, for forward-looking features (in AI, for example) but provide depth in those features, as well.

Indeed, the extreme separation in our Forrester Wave diagram suggests that the market for general-purpose low-code development platforms will soon begin to consolidate. The Leaders will increasingly win competitive bids, and duplicating their value-propositions will be too expensive for other vendors to justify. In consolidating markets, vendors that don't lead must find valuable niches.

- › **Digital process, collaboration, and other highly distinctive features.** We found the biggest differences in vendors' digital process automation, content and collaboration, reporting, ML, and IoT features; public-cloud security certifications; and commercial models. Process apps are the highest priority for low-code applications, and reporting remains the most disappointing set of services

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to customers. Only the largest vendors invest in security certifications like SOC 2, HIPAA, and FedRAMP; others rely on the certifications of their infrastructure partners. Surprisingly, some vendors still do not offer transparent pricing and no-friction access to their products for experimentation.

- › **Widely varying vendor ambitions.** Appian, Kony, Mendix, OutSystems, and Salesforce have all prospered by addressing engagement applications, intermediate process and workflow applications, and portals and other aggregated user interfaces — the sweet spots for low-code development platforms. Kony's ambition is to expand beyond its deep position in mobile apps. But the other Leaders are investing to allow customers to address the full range of enterprise scenarios, including systems of record. Other vendors in our analysis have less aggressive ambitions.
- › **Revealing vendor customer counts — both paid and unpaid.** Salesforce has the largest number of customers by far; we estimate Force.com has more than 100,000 paying customers. Bizagi, K2, Mendix, OutSystems, and ServiceNow have the next largest rosters, reflecting both time in market, and except for K2, strong free/freemium offerings that have attracted tire-kickers, experimenters, and other customers in waiting. Vendors with lower customer counts are new (e.g., Skuid and Trackvia), relying on enterprise selling models (e.g., Appian), or both.
- › **One partner ecosystem that sets the standard for all other vendors.** Salesforce's AppExchange is by far the largest partner network in this market. Partners are increasingly important as low-code customers look beyond the vendors themselves for help in delivering new applications. A key measure of future success for these vendors will be how many of them can persuade SaaS vendors to incorporate their platforms.

Low-Code Development Platforms For AD&D Pros Evaluation Overview

To assess the state of the market for low-code development platforms for AD&D pros and see how the vendors stack up against each other, Forrester evaluated the strengths and weaknesses of top vendors in the category. After examining past research, user need assessments, and vendor and expert interviews, we developed a comprehensive set of evaluation criteria. We used 26 criteria, grouped into three buckets, to evaluate vendors and their products:

- › **Current offering.** We concentrated on the breadth and depth of each product's declarative development tools, including criteria to measure each platform's support for modern application development processes, as well as platform and application administration. Deploying applications to public clouds is so important to low-code development platforms, we added criteria for public cloud services and security certification. Lastly, two criteria measure each vendor's commitments to important new technologies in AI and sensors and actuators (internet of things).

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- › **Strategy.** We evaluated the vendor's plans to add new enterprise customers, address the needs of enterprise AD&D pros, and make its product a strategic platform choice for enterprises. Further, we assessed each vendor's roster of partners to service enterprises, the availability of a free or freemium pricing model, and the vendor's training, community, and materials programs to empower customers to help themselves with the platform.
- › **Market presence.** Three factors indicate each vendor's market presence: the raw number of customers (including enterprise customers), product revenue and growth rates, and the vendor's customer with the largest number of concurrent users in production. Revenue and growth rates are Forrester estimates.

Evaluated Vendors And Inclusion Criteria

Forrester included 13 vendors in the assessment: AgilePoint, Appian, Bizagi, K2, Kony, Mendix, OutSystems, PNMsoft, Progress Software, Salesforce, ServiceNow, Skuid, and Trackvia. Each of these vendors (see Figure 3):

- › **Offers comprehensive declarative tooling.** Declarative tools employ an array of techniques for defining data, logic, flows, forms, and other application artifacts without writing code. We emphasized model-driven development and visual configuration of mobile apps; user interfaces and web pages; data; integrations; workflow and business process; content and collaboration; reporting and dashboards; security permissions; app scaling; change management; and application deployment.
- › **Designs its product/services to serve the needs and preferences of AD&D pros.** Some low-code platforms are designed primarily to empower businesspeople to create and deliver applications. The vendors in this evaluation, by contrast, target professional developers as their primary customers.
- › **Has a free or "freemium" model.** Customers value low-code development platforms they can adopt at will for a very low cost — without requiring formal paid training courses to build business apps.
- › **Supports building many different types of business apps.** We selected vendors that take on a wide range of use cases, including database apps, request-handling apps, process-flow apps, and apps that combine all of these.
- › **Primarily targets large enterprises.** The vendors selected are capable of serving organizations that have revenues in excess of \$1 billion in several geographic regions.

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FIGURE 3 Evaluated Vendors: Product, Or Vendor, Information And Selection Criteria

| Vendor | Platform name | Version |
|-----------------------------|---|--------------|
| AgilePoint | AgilePoint NX | v6.0 SP1 SU2 |
| Appian | The Appian Platform | v. 17.2 |
| Bizagi | Digital Business Platform | 11.1 |
| K2 | K2 blackpearl 4.7 & K2 Appit for Sharepoint | |
| Kony | Kony Visualizer | 8.x |
| Mendix | Mendix Platform | Mendix 7 |
| OutSystems | OutSystems | 10 |
| PNMsoft (a Genpact company) | Sequence | 8.3 |
| Progress | Progress Rollbase | 4.5.3 |
| Salesforce | Salesforce App Cloud Platform | |
| ServiceNow | Now Platform | Jakarta |
| Skuid | Skuid | |
| Trackvia | Trackvia | |

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FIGURE 3 Evaluated Vendors: Product, Or Vendor, Information And Selection Criteria (Cont.)

Vendor inclusion criteria

Offers comprehensive declarative tooling. Declarative tools employ an array of techniques for defining data, logic, flows, forms, and other application artifacts without writing code. We emphasized model-driven development and visual configuration of: mobile apps; user interfaces and web pages; data; integrations; workflow and business process; content and collaboration; reporting and dashboards; security permissions; app scaling; change management; and application deployment.

Designs its product/services to serve the needs and preferences of AD&D pros. Some low-code platforms are designed primarily to empower businesspeople to create and deliver applications. The vendors in this evaluation, by contrast, target professional developers as their primary customers.

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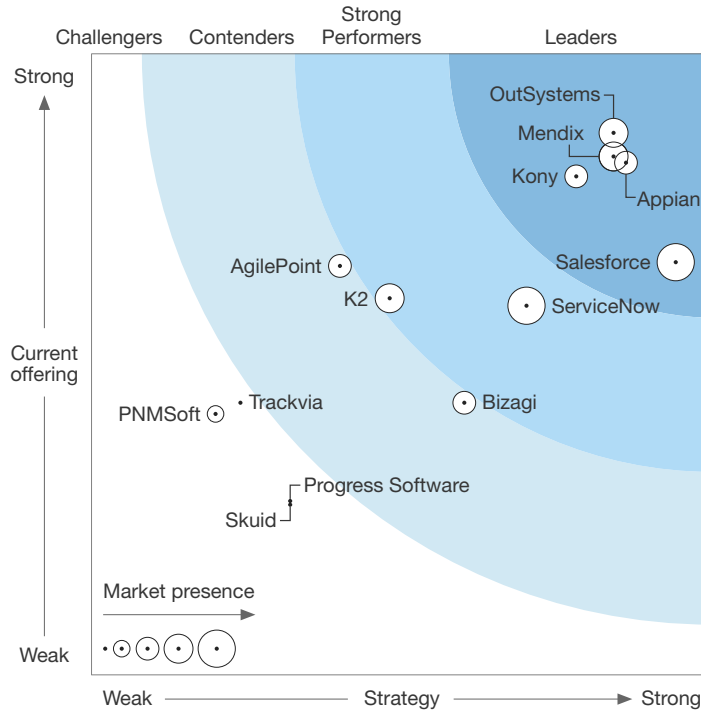
Primarily targets large enterprises. The vendors selected are capable of servicing organizations with revenues in excess of \$1 billion in several geographic regions.

Vendor Profiles

This evaluation of the low-code development platforms for AD&D market is intended to be a starting point only. We encourage clients to view detailed product evaluations and adapt criteria weightings to fit their individual needs through the Forrester Wave Excel-based vendor comparison tool (see Figure 4). The leading vendors tend to carry the highest costs. Some of the other vendors offer solid fundamental features useful for many use cases, usually at lower costs. Others serve niches particularly well.

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FIGURE 4 Forrester Wave™: Low-Code Development Platforms For AD&D Pros, Q4 '17



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FIGURE 4 Forrester Wave™: Low-Code Development Platforms For AD&D Pros, Q4 '17 (Cont.)

| | Forrester's weighting | AgilePoint | Appian | Bizagi K2 | Kony | Mendix | OutSystems | PNMsoft | Progress Software | Salesforce | ServiceNow | Skuid | Trackvia | |
|--|-----------------------|------------|--------|-----------|------|--------|------------|---------|-------------------|------------|------------|-------|----------|------|
| Current offering | 50% | 3.28 | 4.11 | 2.18 | 3.02 | 4.00 | 4.16 | 4.35 | 2.09 | 1.39 | 3.31 | 2.96 | 1.36 | 2.18 |
| Declarative tooling for low-code development | 33% | 3.60 | 4.40 | 2.60 | 3.55 | 4.30 | 4.15 | 4.20 | 2.70 | 1.00 | 3.40 | 3.00 | 2.35 | 2.35 |
| Declarative tooling for platform and app admin | 33% | 3.00 | 4.20 | 2.20 | 3.80 | 4.20 | 4.60 | 4.60 | 2.60 | 1.40 | 3.80 | 3.40 | 1.00 | 2.20 |
| App deployment and security features | 34% | 3.25 | 3.75 | 1.75 | 1.75 | 3.50 | 3.75 | 4.25 | 1.00 | 1.75 | 2.75 | 2.50 | 0.75 | 2.00 |
| Strategy | 50% | 2.00 | 4.30 | 3.00 | 2.40 | 3.90 | 4.20 | 4.20 | 1.00 | 1.60 | 4.70 | 3.50 | 1.60 | 1.20 |
| Product/service vision | 30% | 3.00 | 4.00 | 3.00 | 3.00 | 4.00 | 5.00 | 5.00 | 2.00 | 2.00 | 4.00 | 4.00 | 3.00 | 2.00 |
| Supporting products and services | 20% | 1.00 | 5.00 | 3.00 | 3.00 | 3.00 | 3.00 | 3.00 | 1.00 | 1.00 | 5.00 | 5.00 | 1.00 | 3.00 |
| Partner ecosystem | 20% | 3.00 | 3.00 | 3.00 | 3.00 | 3.00 | 3.00 | 3.00 | 1.00 | 1.00 | 5.00 | 5.00 | 1.00 | 0.00 |
| Commercial model | 30% | 1.00 | 5.00 | 3.00 | 1.00 | 5.00 | 5.00 | 5.00 | 0.00 | 2.00 | 5.00 | 1.00 | 1.00 | 0.00 |
| Market presence | 0% | 2.66 | 3.00 | 2.34 | 3.33 | 2.32 | 4.00 | 3.67 | 1.65 | 1.00 | 5.00 | 5.00 | 0.33 | 0.33 |
| Number of live enterprise installations | 33% | 3.00 | 3.00 | 1.00 | 4.00 | 3.00 | 4.00 | 3.00 | 1.00 | 0.00 | 5.00 | 5.00 | 0.00 | 0.00 |
| Number of enterprise customer logos | 33% | 3.00 | 3.00 | 3.00 | 3.00 | 3.00 | 4.00 | 4.00 | 4.00 | 2.00 | 5.00 | 5.00 | 1.00 | 1.00 |
| Revenue and growth rate | 34% | 2.00 | 3.00 | 3.00 | 3.00 | 1.00 | 4.00 | 4.00 | 0.00 | 1.00 | 5.00 | 5.00 | 0.00 | 0.00 |

All scores are based on a scale of 0 (weak) to 5 (strong).

Leaders

- › **OutSystems: strong platform, big ambitions.** A founder of the low-code platforms market, OutSystems continues to expand its features into new areas of business applications, including sensor and real-time data and AI. OutSystems is also investing to address the full range of business application use cases — including replacement systems of record. OutSystems has a very mature and rich public cloud service, including an extensive sharing marketplace and

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developer community. Our biggest question about OutSystems: As big enterprises offer seven-figure deals, will OutSystems continue to maintain the easy customer access to its technology at the root of its success?

OutSystems has strengths across the board, including in strategy. The platform's tooling to support professional AD&D teams is excellent — broad in application and portfolio management, platform and security administration, and development-process management and deep in troubleshooting and performance management. OutSystems' strengths make it an oft-mentioned choice by clients and contribute to its high growth rate and expanding roster of customers. OutSystems' weaknesses are in specific tools for citizen developers, cloud security certifications, and — to some degree — its partner ecosystem.

- › **Appian's pivot to low-code is complete.** In 2017, after 10 years that took Appian from portals to BPM to low-code platforms, the company successfully went public — the first low-code platform vendor to do so. Appian's transformation from enterprise BPM to low-code is now virtually complete, with the company finally adopting a business model providing the cost visibility and easy access. The challenge now is to translate that improved access into much greater numbers of customers — Appian reported only 330 enterprise customers (as of July 30, 2017).

Appian's features are broad across the board, and the company's process and data-management features are particularly deep. The vendor also offers AD&D pros tools to make initial forays into AI applications — and plans many more over the next year. Appian is one of the few of these vendors to provide a tool to enable direct business-developer involvement in application projects and has funded extensive security certifications of its cloud service. Appian falls short on lack of customer control over platform scaling, as well as tooling to support complex web application projects involving multiple teams.

- › **Mendix is firing on all cylinders and about to accelerate its distribution.** A well-known low-code platform for AD&D pros, Mendix continues to innovate in new use cases and deepen its features across the board. Its decision to base its low-code environment on Cloud Foundry also paid big dividends, as SAP — a Cloud Foundry distributor — adopted the vendor's platform as its worldwide low-code solution.⁵ That partnership is the first by one of the four largest enterprise vendors (IBM, Microsoft, Oracle, and SAP) with a low-code platform vendor and should accelerate Mendix's already substantial growth.

Mendix has many strengths in addition to its new SAP relationship: The platform's user experience (UX) and content/collaboration services tooling, its development-team support and administration tooling, and its cloud service and developer community are all outstanding. Mendix has leading AI and machine-learning development features, and offers a specific tool to include business developers in app-delivery projects. Mendix shows weakness in cloud security certifications, and breadth of partner roster, and some advanced reporting and process features.

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- › **Salesforce, the market's gorilla, modernizes and focuses.** By far the largest low-code platform for AD&D pros by revenue and customers, Salesforce's platform has in the past often confused customers. Use just Force.com or Heroku too? Was Lightning ready for prime time? Was Salesforce committed to low-code mobile app development? As is apparent in the vendor's performance of our demo scenario, Salesforce's low-code platform is closer to a unified developer experience now than it has been in many years.⁶ Why? Salesforce now includes its Sales and/or Service Cloud applications in its low-code platform, and it has finally integrated modern Lightning UX. Salesforce's cloud services are very mature and used at scale, and the vendor's AppExchange marketplace and Trailhead developer learning program set the standard for those services among low-code platform vendors.

Salesforce's weaknesses arise from two sources. The first is the pain of evolving a 15-year-old platform into the mobile era, which takes time and allows new and more nimble competitors to innovate faster. Lightning and process are examples. The second is Salesforce's choice to rely on partners for features rather than build them into its platform. Integration and development-process support are the worst examples of this.

- › **Kony graduates with alacrity from mobile-first to general-purpose low-code platform.** For customers seeking a platform for mobile application development, Kony is a leading option.⁷ However, during the last two years, Kony has also invested in the product features, marketing, and developer-support programs it needs to serve as a general-purpose low-code platform. Kony's heritage in mobile applications leads to a distinctive design experience and strong features, particularly for developing UX. Now the vendor must re-educate customers about who it is.

Kony is strong in visual design and omnichannel UX, integration, content and collaboration, reporting, identity management, and overall strategy. The vendor also has a mature public cloud service. Kony is solid in process development, data management, development process support, and platform administration; its primary weakness being a nascent commercial marketplace including a variety of partners and supporting Kony's emerging solutions product line. Expect the marketplace to bloom during the next year.

Strong Performers

- › **ServiceNow makes a big leap forward, and more is coming.** ServiceNow's big presence in enterprises makes its low-code platform a major option for customers evaluating platforms. Indeed, ServiceNow's platform opportunity is as big as Salesforce's. In our last assessment, ServiceNow's over-reliance on scripting and low developer awareness tamped down its standing. The newest release — called the Now Platform — cuts down on scripting, expands process tooling, sports a modern developer experience, and has the backing of a developer community of about 100,000. Equally important, the vendor's road map calls for adding within months real-time data processing, predictive analytics, ML, and event-based applications.

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ServiceNow is solid across the board, with particular strength in IoT applications and reporting, application scaling and performance tools, and its road map for AI and advanced analytics both for developers and platform operations support. It has also accomplished a difficult pivot from its original focus on IT system administrators, but it has a weak low-code commercial model and offers customers limited app-deployment options. The company's marketplace for its own products, as well as independent software vendors' (ISVs), has gotten off to a remarkably quick start over the last year.

- › **K2 accelerates its transition to the cloud.** K2 has strong credentials in low-code, as well as business process automation, and it has built a worldwide customer base in excess of 3,500 enterprises. K2's goal is to automate the breadth and scale of enterprise processes — without limits. The K2 platform is strong in mobile and web UX design, data management (thanks to its unique SmartObjects technology), reporting and analysis, and identity and access management, and it is solid in process management, integration, mobile development, and platform administration features.

However, K2 needs to accelerate its adoption of new developer technologies in IoT and AI to keep pace in this market and to deliver on its ambitions. And the vendor's cloud security certifications and low-code commercial model remain weaker than those of the leaders. The vendor plans to address these gaps in the near future, which will raise its value to clients.

Contenders

- › **AgilePoint: rising from midsize to large enterprises.** When we first met AgilePoint in 2012, the company sold a SharePoint add-on for workflow to small and medium-size enterprises. Now, AgilePoint is a general-purpose low-code platform and an option for large enterprises, as well. AgilePoint continues to focus on companies in the Microsoft ecosystem, but it isn't constrained by its Microsoft roots. An important next step for AgilePoint is to create a worldwide developer community and supporting sharing marketplace to support that community.

AgilePoint's greatest strength is its product engineering: The vendor implemented IoT adapters two years ago for a demonstration app and has quickly embraced natural-language interfaces and other AI services, as well. Meanwhile, the product's strong process and UX experience features are both deeper and easier to use than in our last Forrester Wave. The platform has either strong or solid features across the board.

- › **Bizagi: strong process features and a low-code business model.** Strong process and case management features were Bizagi's springboard into low-code platforms for AD&D pros, and they remain its platform's greatest strength. Bizagi also has a free onramp for its platform (although it requires a download) and a large and active community site (880,000 registered users), and this year, it added a usage-based pricing model and its first public cloud service. Bizagi's free Studio product is an effective tool to enable business-developer contributions to projects, and it offers strong content and collaboration features as well. The vendor is in the midst of a big expansion of sales and support worldwide as its annual revenues grow toward \$100 million.

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Yet Bizagi's transformation from BPM vendor to low-code platform provider is incomplete. The vendor must accelerate its migration to the cloud with its own security certifications and a web version of the free modeler that has gained it such a large community. The vendor also has made only limited forays into the forward-looking features in our analysis (ML and IoT), and it has gaps in its platform administration and application-support features.

Challengers

- › **Trackvia: “start simple” and expand.** Trackvia's first product was a cloud-based database tool, but the vendor pivoted to general-purpose low-code platforms in 2011. The vendor retained its original “keep it simple and in the cloud” philosophy, yielding a low-code platform that allows quick initial projects with deeper configuration and development options as customers take on more complex applications. Product vision, go-to-market, and product are very well aligned: Trackvia targets a quick win for an underserved business group (often in operations) with its own services to begin and appeals to AD&D to help it expand to other applications.

The Trackvia's platform's strengths: Omnichannel development, data management features, and process are highly productive, and Trackvia offers a leadership cloud service. As a newer entrant, the Trackvia Platform doesn't have the breadth of features in AD&D process support, security audits, integration, and embrace of AI that the Leaders do. Thus, it is a good option for clients who find the Leaders' feature breadth to be complex and overwhelming. The company's product road map promises to add features and partners to address process, integration, and AI support, but presumably “keep it simple.”

- › **PNMsoft's pivot is backed by the resources of Genpact.** PNMsoft is one of the several former business process management (BPM) vendors in this Forrester Wave that is pivoting to low-code platforms. As indicated by PNMsoft's rating, its platform needs stronger features to compete with the leaders, an evolution that its new corporate parent, Genpact, will enable. As a \$2.6 billion provider of custom and packaged solutions, Genpact has a global presence and enterprise access that promises to significantly raise PNMsoft's opportunity for its Sequence platform to grow independently and as the foundation of Genpact solutions. Genpact already bases is Cora offering on Sequence, and we expect more integration in the future.

PNMsoft has solid process, integration, and data-management features, as well as platform administration and support for development processes, but none of its features really stand out. The vendor needs a major upgrade of its tools for UX development to be competitive. The vendor's road map is strong, but the test for its parent, Genpact, will be whether PNMsoft Sequence evolves and improves quickly over the next 12 months. Sequence is a solid base to build on.

- › **Progress Software seeks success in its ISVs and larger portfolio.** More than the other vendors in this study, Progress Software's strategy for its low-code platform relies on ISV adoption and distribution first and on enterprise adoption second. ISVs are the foundation of Progress' market position, and the Rollbase platform extends that strategy into low-code development and cloud deployment.

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Rollbase falls short of the Leaders, in part because Progress didn't focus on it amid a series of executive leadership changes during the last several years. As a consequence, Progress was late to cloud and is just now marshalling its respected technologies in mobile development (NativeScript and Kinvey), data integration (DataDirect), web content management (Sitefinity), and business rules management (Corticon) to support a more unified low-code platform strategy. In combination with these independent assets, Rollbase offers a stronger functional profile than it does on its own. Rollbase offers solid basic functionality, and for some organizations, it will be more straightforward to adopt than more sophisticated platforms. However, Rollbase must accelerate its road map of new features and integrations with other Progress strengths to be competitive.

- › **Skuid brings a design-first approach to business applications.** The Skuid platform emphasizes well-designed, modern UXes that work across channels created by collaborators in various roles. The vendor established itself in Salesforce's community, satisfying requirements for modern UX experiences that Salesforce itself could not meet. Skuid is still big in the Salesforce ecosystem, but has branched out into more general application development as well.

Skuid is one of two vendors in our assessment with great strengths in tooling to enable consumer-grade visual design for web UX. Skuid has a particular genius for UX, which will appeal to server-side developers who need to deliver "beautiful front-ends" but lack design skills and/or expertise in front-end frameworks and technologies. However, Skuid is a relative newcomer to general-purpose low-code development platforms, so it lacks depth in digital process automation and integration, as well as platform administration and development-process support. Skuid's road map is aggressive, and we expect a lot more from the vendor over the coming months.

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Supplemental Material

Survey Methodology

Forrester fielded its Forrester's Q4 2017 Global Low-Code Development Platforms Forrester Wave™ Customer Reference Online Survey to 41 AD&D professionals who use a low-code development platform evaluated in the Forrester Wave evaluation. Vendors recruited these respondents to complete a survey about their satisfaction and use of low-code platforms.

Forrester fielded the survey from July 2017 to August 2017. Respondent incentives included a summary of the research results when the Forrester Wave was published.

Online Resource

The online version of Figure 4 is an Excel-based vendor comparison tool that provides detailed product evaluations and customizable rankings. Click the link at Forrester.com at the beginning of this report to download.

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Data Sources Used In This Forrester Wave

Forrester used a combination of three data sources to assess the strengths and weaknesses of each solution. We evaluated the vendors participating in this Forrester Wave, in part, using materials that they provided to us by August 31, 2017.

- › **Vendor surveys.** Forrester surveyed vendors on their capabilities as they relate to the evaluation criteria. Once we analyzed the completed vendor surveys, we conducted vendor calls where necessary to gather details of vendor qualifications.
- › **Product demos.** We asked vendors to conduct demonstrations of their products' functionality. We used findings from these product demos to validate details of each vendor's product capabilities. Videos of these demos are available to clients upon request.
- › **Customer reference survey.** To validate product and vendor qualifications, Forrester also conducted a survey of at least 3 of each vendor's current customers.

The Forrester Wave Methodology

We conduct primary research to develop a list of vendors that meet our criteria to be evaluated in this market. From that initial pool of vendors, we then narrow our final list. We choose these vendors based on: 1) product fit; 2) customer success; and 3) Forrester client demand. We eliminate vendors that have limited customer references and products that don't fit the scope of our evaluation.

After examining past research, user need assessments, and vendor and expert interviews, we develop the initial evaluation criteria. To evaluate the vendors and their products against our set of criteria, we gather details of product qualifications through a combination of lab evaluations, questionnaires, demos, and/or discussions with client references. We send evaluations to the vendors for their review, and we adjust the evaluations to provide the most accurate view of vendor offerings and strategies.

We set default weightings to reflect our analysis of the needs of large user companies — and/or other scenarios as outlined in the Forrester Wave evaluation — and then score the vendors based on a clearly defined scale. We intend these default weightings to serve only as a starting point and encourage readers to adapt the weightings to fit their individual needs through the Excel-based tool. The final scores generate the graphical depiction of the market based on current offering, strategy, and market presence. Forrester intends to update vendor evaluations regularly as product capabilities and vendor strategies evolve. For more information on the methodology that every Forrester Wave follows, go to <http://www.forrester.com/marketing/policies/forrester-wave-methodology.html>.

Integrity Policy

We conduct all our research, including Forrester Wave evaluations, in accordance with our Integrity Policy. For more information, go to <http://www.forrester.com/marketing/policies/integrity-policy.html>.

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Rubric For Product/Service Vision Criteria

Scores for the first “strategy” criterion (product/service vision) reflect the analyst’s judgment of 9 factors. Each vendor received a score from 1 (low) to 5 (high) on each of these factors, yielding a total that determined the vendor’s score on the product/service vision criterion. The 9 factors are:

- › **Vision.** Does the vendor have a compelling vision for its product and value for customers?
- › **Product road map.** Does the vendor have a product road map that will provide customers with both deep current features and useful new technologies and features?
- › **Innovation leadership.** Has the vendor consistently delivered new innovations in low-code platforms for AD&D?
- › **Innovation pace.** Has the vendor delivered new innovations in low-code platforms for AD&D faster than its competitors?
- › **Enterprise, global go-to market scale.** To execute its vision, has the vendor built a sales and services organization that can service large enterprises on a global scale?
- › **Strategy is, in fact, breeding customer success and adoption.** Growth rate, client mentions, competitive situations indicate the vendor’s strategy is bearing fruit.
- › **Compelling direction.** The vendor’s vision and product road map point to a compelling future for customers and prospects.
- › **Marketing.** The vendor’s marketing, in the analyst’s judgment, is effective.
- › **Ambition.** The vendor has big ambitions for its platform and business — and that ambition is credible.

Endnotes

- ¹ The market for public cloud services is expanding rapidly as enterprises grow comfortable they can rely on these services for a wide range of use cases and needs. See the Forrester report [“The Public Cloud Services Market Will Grow Rapidly To \\$236 Billion In 2020.”](#)
- ² See the Forrester report [“The Three Faces Of Platform-As-A-Service.”](#)
- ³ Forrester identifies three types of nonprofessional, or “citizen,” developers, line-of-business developers, business developers, and power users. For more detail on this research, see the Forrester report [“How To Harness Citizen Developers To Expand Your AD&D Capacity.”](#)
- ⁴ For a breakdown of revenues in the low-code market, see the Forrester report [“Vendor Landscape: A Fork In The Road For Low-Code Development Platforms.”](#)
- ⁵ Mendix’s deal with SAP allows SAP to white-label the Mendix platform, and SAP will also compensate its direct sales reps for deals including Mendix. The deal was concluded in July 2017, and announced in September.
- ⁶ Each vendor in our assessment ran a demo based on a script provided by Forrester. Video recordings of these demo sessions, each 50 to 60 minutes in length, are available free of charge to clients.
- ⁷ For about mobile low-code development platform providers and how they stack up, see the Forrester report [“The Forrester Wave™: Mobile Low-Code Development Platforms, Q1 2017.”](#)

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