

NUCLEUS
RESEARCH

LCAP TECHNOLOGY VALUE MATRIX 2022

ANALYST

Isaac Gould

THE BOTTOM LINE

As businesses become more protective of their current cash positions, they are exploring options to do more with less to remain competitive. However, with the current labor shortage, technical personnel demand a premium. Nucleus has noted a rise in Low-Code Application Development Platforms (LCAP) adoption to combat these contracting market conditions. LCAPs have proven to accelerate the DevOps cycle for professional developers and enable business users within the design, build, test, and publish phases to alleviate the burden of IT teams. As vendors continue to improve project management and implement governance processes, users are placing more trust in the security and quality of their LCAP platforms and developed applications. Now, LCAP use cases have expanded beyond internal process automation and have become revenue drivers for financial services, professional services, and technology providers alike.



OVERVIEW

The contracting market has impacted virtually all businesses across the globe. Organizations are finding it more difficult to attract and retain technical talent and launch new business lines as they become more protective of their current and future cash positions. Navigating

these concerns, companies are exploring options to do more with their current developer resources and extend their existing IT ecosystems. As such, sourcing a Low-Code Application Development Platform (LCAP) has become an attractive and mainstream practice. Through ROI studies, Nucleus has determined that LCAPs deliver benefits, including reduced development costs, accelerated go-to-market for new products and services, and increased operational efficiency.

Organizations may deploy an LCAP as a revenue driver, using the tools to bring technology services and products to market faster and with fewer developer resources. Businesses can build standalone applications to be sold or develop web portals for analytic use cases or to support existing services, such as a companion app for an insurance policy. Most commonly, organizations leverage an LCAP to build operational applications to streamline or eliminate manual tasks that are not addressed by existing solutions in the market in a cost-effective manner. Examples run the gamut for compliance reporting for financial services, patient care tracking for healthcare providers, and personalized email campaigns for marketers. Several LCAP offerings are well suited to develop and launch mobile applications and forms to collect and organize data.

With increased LCAP adoption, vendors further differentiate their products through industry specializations, support for professional developers to reduce hand coding, business user enablement within the development process, and a greater number of use cases for both outward-facing applications and internal use cases. Nucleus identifies pre-built templates and forms, DevOps governance, integration and database management, embedded analytics, workflow, and front-end design as functionality differentiators. For usability differentiation, Nucleus identifies portability, language accelerators, component recyclability, training services and resources, and AI-enabled design suggestions and auto-population capabilities. Before selecting an LCAP, an organization must be clear in its development requirements: Will it require the ability to publish standalone applications, will professional developers leverage the tool for complex applications, is front-end graphical design a priority, or will the Robotic Process Automation (RPA) capabilities be adequate for the targeted processes?

In this Technology Value Matrix, Nucleus assesses the LCAP market based on the value customers realize from the product usability and functionality that vendors are delivering with their solutions (Nucleus Research V67 – Understanding the Value Matrix, April 2021). The Matrix is a snapshot of the market designed to help customers and prospects understand where vendors are differentiating in how they deliver value and where vendors are making significant product investments.

LEADERS

Leaders in the LCAP Technology Value Matrix include Appian, Mendix, Microsoft, Oracle, OutSystems, and Zoho.

APPIAN

Appian is a leader in this year's LCAP Technology Value Matrix. Recognized for its comprehensive LCAP platform that addresses every stage along the DevOps cycle, from ideation to publication, Appian services both citizen and professional developers with guided wizards, drag-and-drop UI, and data and integration management toolkits. Appian supports organizations of all sizes within Retail, Automotive & Manufacturing, Financial Services, Education, Professional Services, Transportation, Healthcare, Energy & Utilities, Life Sciences, Government, and Telecom industries. Organizations leverage Appian to develop internal operational applications, webpages, customer and partner portals, mobile apps, and enterprise solutions that can be brought to market. With a strong background in process automation, Appian provides a host of Business Process Management (BPM), Robotic Process Automation (RPA), Process Mining, and Intelligent Document Processing (IDP) capabilities to alleviate technical debt and accelerate development. Appian has steadily geared internal development to address enterprise needs. As such, customers have access to project management, data governance, and security compliance features to ensure guardrails are in place throughout the build, test, and publish stages.

Notable announcements from the past year include:

- Appian announced at Appian World 2022 that the platform's data layer, Data Fabric, is complete. Appian now offers a single API to its database to reduce complexity and configurable ETL connectors to push, pull, and transform data from third-party applications.
- Out-of-the-box AI-enabled IDP. Optical character recognition allows Appian to extract text, forms, and fields to be ready to use automatically.
- The expanded global partner program provides customers and partners with free access to the Appian Community Edition environment, learning assets to gain Appian Certifications and Badges, and personalized learning curriculum with role-based in-classroom and online classes.
- Appian expanded its low-code education and certification to the APAC region. Partners and customers in APAC are also eligible for scholarships to gain their certifications and badges.

MENDIX

Mendix is a leader in this year's LCAP Technology Value Matrix, recognized for its low code application development platform across public cloud, private cloud, on-premises, and hybrid environments with self-service scaling. With Mendix Studio's online, collaborative, no-code application development IDE, businesses can develop and deploy applications without the need for extensive coding or IT resources. Mendix provides a visual modeling environment that allows businesses to drag-and-drop components to build applications, as well as drop-down menus to manipulate application pages, data models, microflows, and workflows. Mendix also includes built-in connectors to popular enterprise systems, making it easy to integrate applications with existing business processes. Additionally, Mendix's platform is designed to be easily extensible within the more sophisticated Studio Pro IDE, allowing businesses to add new functionality as needed.

Notable recent updates from Mendix delivering value for customers include:

- The vendor has announced the Adaptive Solutions Platform aimed towards reducing the maintenance cost and difficulty, as well as potential operational risk, that stems from mass customization of many adaptive solutions.
- The vendor announced the Composable Platform that allows the low-code platform itself to be extended and tailored for a given industry or use case. This will expand Mendix's capabilities to more industries, improving software specificity for industries not covered before.
- Mendix has expanded deployment flexibility beyond just multi-cloud, including for isolated, air-gapped, and highly governed environments. Customers will be better able to select a deployment architecture that best fits their needs, reducing costs and enhancing performance.
- The vendor announced an expansion of collaboration features for UI/UX designers and AI bots through the release of Mendix Assist. Customers will benefit from enhanced connectivity with the UI/UX professionals, as well as artificial intelligence-powered agents for microflow configuration in Mendix Studio.

MICROSOFT

Microsoft is a leader in this year's LCAP Technology Value Matrix, recognized for its Microsoft Power Apps delivery of a suite of apps, services, and connectors, as well as a data platform. Part of the vendor's Power Platform, Microsoft Power Apps can either be deployed standalone or with Power BI for embedded Analytics, Power Automate for robotic process automation, and Power Virtual Agents for no-code chatbot integrations. Hosted on the Azure Cloud infrastructure, professional developers can access code if necessary with Azure

Services and Data Management. The Power Apps platform includes AI modeling, process automation, app development, collaboration, and integration capabilities.

Recent updates delivering value for customers include:

- Microsoft announced the release of Microsoft Power Apps 2022 release wave 2. Power Apps will extend governance capabilities enabling customers to empower, manage, and support citizen development across the entire organization. Citizen developers will be made more productive over Microsoft Dataverse in a unified studio, with an updated experience for building and managing data and logic. Microsoft also updated Power Apps collaboration capabilities, delivering an updated collaboration experience for out-of-the-box shared development.
- Microsoft additionally announced updates for the rest of the Power Platform as part of the Microsoft Power Platform: 2022 release wave 2 plan. Updates include the bringing of the Power Query diagram view into Power BI Desktop, enhanced Microsoft Power Platform CLI tool and Visual Studio Code compatibility for Power Pages, application lifecycle management and robotic process automation enhancements for Power Automate, and other updates for Power Virtual Agents, Dataverse, AI Builder, data integration, and governance and administration. Customers will benefit from an upgraded and more tightly integrated suite, improving value for users of the entire suite across their organization.

ORACLE

Oracle is recognized as a leader in this year's LCAP Technology Value Matrix. Oracle has two standalone LCAP solutions: Oracle APEX for database-centric use cases and Oracle Visual Builder for front-end design. Users often leverage both solutions to access a comprehensive toolkit for both front and back-end development of complex applications. Customers stem from IT Services, Financial Services, Banking, Computer Software, Higher Education, Telecommunications, Legal, Oil and Gas, Network Security, and Wholesale industries.

A fully-supported no-cost complement to the Oracle Database, APEX is a graphical user interface (UI) and low-code development platform. Organizations can expedite technology development projects to meet consumer demand through pre-built templates, intelligent wizards, and drag-and-drop page design capabilities. Oracle APEX supports both technical and non-technical users. Developers utilize APEX proprietary low-code SQL-based language to expedite database development, and non-technical users leverage intelligent wizards to build reports, visualizations, and basic workflows. APEX uses a 3-tier architecture compliance system where requests are sent from a browser, through a web server, and to the database to streamline server request approval time and guarantee zero latency data access. Users

with limited coding experience can produce recyclable SQL queries and manage their Oracle databases with table creation, triggers, and index structures. Organizations implement APEX due to low maintenance and ease of deployment, enabling the development of applications and integration that can be packaged into a single file for quick deployment.

Notable APEX updates in the past year include:

- In June 2022, Oracle Apex announced the 22.1 updates on Autonomous Database and Apex Service.
- The update introduces a unified task list and approvals component that helps deliver solutions requiring human approvals and approves tasks using a single Unified Task List.
- With simplified page creation, organizations can use create page wizards to create web pages faster with minimal user input and improved page navigation.
- Organizations can export into JSON or YAML format with the 22.1 Apex update.

Oracle Visual Builder is an open-source platform that supports citizen developers to develop, facilitate, and deploy applications within the Oracle Cloud. The platform complements Oracle APEX's low-code database management and modeling capabilities. Cloud customers often use Visual Builder to create front-end applications or personalize and extend existing Oracle applications. Experienced developers leverage Visual Builder to develop new applications with pre-built templates and drag-and-drop page design tools. Visual Builder allows users to validate business objects with complex or simple rules to enhance response time to events or field changes. Customers can perform two-way editing using the Oracle JavaScript Extension Toolkit with Visual Builder's no-code tools. Customers often choose Oracle Visual Builder for its native connectivity to various Oracle ERP, HCM, and other Cloud applications, thereby creating a consistent user experience that drives solution adoption and employee productivity.

Notable Oracle Visual Builder updates from the past year include:

- In August 2022, Oracle Visual Builder Runtime to 22.10 that improves security, DB usage, dynamic components, and fragment adjustments.
- Security updates allow organizations to create role-based access for pages and flows to control access to applications at the flow and page level.
- Administrators can check how much space in a tenant's database is being used by applications.

- Fragment improvements allow end-users to edit page canvas directly to a fragment. A new usage added to the fragment's properties pane tells users where the fragment is being consumed and allows you to navigate.
- Updates on dynamic components allow users to select a field in a virtual field to display a dynamic table.
- Other updates include Input parameters, visual indicators, and component pallet change.

OUTSYSTEMS

OutSystems is placed as a leader in the 2022 edition of the LCAP Technology Value Matrix as recognized by its low-code development platform. With this platform, customers gain a visual development environment and various pre-built components to simplify and accelerate the entire software development life cycle. With its ability to support enterprise-class and complex applications, OutSystems often competes in the banking, insurance, professional services, government, education, high tech, consumer goods, energy and utilities, healthcare, and logistics industry. Customers often choose OutSystems in highly technical deals for its ability to support complex use cases with advanced security, availability, and performance.

Over the past year, OutSystems delivered multiple new and extended capabilities to improve the value of its low-code development platform.

- In November 2021, OutSystems released its next-generation platform, combining its low-code environment with a dynamic scaling cloud architecture and modern CI/CD practices. This includes over 270 automated security checks to give customers the confidence that applications are secure at every level.
- In May 2022, OutSystems introduced Security Application Static and Dynamic testing enabling customers to perform penetration and load testing. OutSystems also provides risk management and proactive security monitoring services to cloud customers to reduce the likelihood of data breaches and accelerate detection.
- In September 2022, OutSystems announced a partnership with UiPath to help customers improve productivity and extend operational efficiency with enhanced intelligent automation. This partnership gives users a new connector to manage UiPath software bots within OutSystems applications to better orchestrate automated processes and execute their automation strategy.

ZOHO

Zoho is a leader in this year's LCAP Technology Value Matrix, recognized for its multi-persona low/no-code Zoho Creator platform. Zoho Creator is a cost-effective solution for companies looking to develop custom applications quickly with little to no coding experience, deployable in the cloud or on-premises. Zoho offers ready-to-use applications that can be deployed rapidly without compromising customizability. With Zoho Creator, non-technical users and developers can develop applications tailored to the specific business. Aside from the drag-and-drop interface, customers also choose Zoho Creator for its built-in database and wide range of pre-built components and integrations. Zoho Creator provides functionality for one-click deployment, cross-platform compatibility, and auto-scaling for various architectures. Users can create forms, pages, dashboards, and reports while optimizing processes surrounding workflows, customer portals, and integration. Developers leverage Creator to build, design, and deploy applications for web, mobile, and tablet interfaces. Zoho Creator provides toolkits for users of all skill sets to enhance the application development cycle. Creator enhances Corporate Governance by supporting SAML, LDAP, and OAuth2 protocols for access management control. REST APIs are immediately available without building endpoints.

Zoho rolled out a set of updated features to improve functionality and usability, including:

- In 2022, Zoho expanded its application building to solution building to create a unified solution platform. Users can create, integrate, analyze, and manage custom business solutions from a single dashboard. With enhanced serverless functions, developers can write, store, and execute reusable code blocks in the Zoho Creator Platform using Java, Deluge, or Node.js, encouraging IT and business teams to work together to build applications faster.
- Organizations can build a connected ecosystem of solutions for an enhanced experience. With Unified Data Modeling (UDM), developers can establish secure data transfers through automated data integration protocols on a unified platform with over 700+ plug-and-play connectors. The Integration Status Dashboard gives users complete visibility of integration operations by providing key findings on recent executions, successes, and failures, to enable companies to discover errors and resolve them quickly. Zoho Creator launched an embedded BI and analytics engine to derive business insights from application data.
- IT departments and developers increase control with end-to-end ADLM that allows companies to launch new solutions in different environments of choice; development, staging, or production with a single click. Integrated communication tools help business developers who are stuck in the building phase. In order to enable communication and collaboration, integrated communication enables

messaging, sending files, sharing screens, and the ability to make video and audio calls.

EXPERTS

Experts in the LCAP Technology Value Matrix include Infor, Nintex K2, Salesforce, and ServiceNow.

INFOR

Infor is an expert in this year's LCAP Technology Value Matrix, recognized for its Mongoose low-code application development platform that simplifies the design and deployment of software applications. Part of the greater Infor OS platform, Mongoose can be leveraged with Infor ION, the middleware integration hub used to connect different enterprise systems with the Infor CloudSuite, the cloud ERP solution. Mongoose enables the construction of a wide range of applications, with usage spanning from massive enterprise applications to small web portals and widgets. Notable components central to the platform include the form, report, and data maintenance wizards.

Notable updates in the last 12 months include:

- The release of Reporting Wizard 2.0, which builds reports in a low code manner, with criteria forms attached to run the report and provide input ranges for filtering information.
- The release of DataView Wizard. Similar to the reporting wizard, this solution builds out DataViews with criteria forms for providing cross tab style functionality with input ranges for filtering and running the DataViews.
- The vendor introduced the API Generator, which creates strongly typed REST APIs in the API Gateway dynamically with full descriptors of inputs and outputs.
- Infor released several new web-based debugging tools, improving web client development capabilities with trace tools and code project downloads for local script editing.
- The vendor announced grid improvements, now with the presentation of information using conditional formatting and new data grid paging improvements.
- Infor introduced FormSync enhancements, enhancing the upgradability of personalization on vendor-level products. Customers will benefit from a reduction in conflicts to end users.

- Over the course of the year, Infor has delivered over 120 back-end improvements, providing architectural enhancements to security, performance, and stability.

NINTEX K2

Nintex K2 is an expert in this year's LCAP Technology Value Matrix, recognized for its low-code process automation functionality. Nintex delivers BPM and RPA solutions for customers. Since its acquisition of K2 Software in October 2020, the vendor has shifted towards full integration of its best-of-breed automation with app development capabilities through the Nintex Process Platform. Nintex K2 Software delivers the capabilities of Nintex K2 SmartObjects, data management and integration, RPA, process modeling, and document generation, enabling the automation of enterprise-wide business processes. Specific functionalities include Nintex K2 SmartForms, the Nintex K2 Mobile App, Nintex RPA, Nintex DocGen, and the visual process mapping tool with an integrated workflow builder and collaboration tools: Nintex Promapp.

Notable updates delivering value for customers include:

- In September 2022, the vendor announced the release of the Promapp mobile app, delivering the platform's process management platform to mobile users away from a computer. Customers will benefit from increased accessibility of Promapp for those not onsite.
- In August 2022, Nintex announced the Nintex Workflow Cloud Upgrade Program. With the winding down of the SharePoint workflow engine in Office365 by Microsoft, Nintex will begin an upgrade roadmap to migrate previously reliant customers onto an improved Workflow Cloud. Customers will benefit from an enhanced workflow automation engine with more direct integration into all of Nintex's solutions.
- In June 2022, Nintex announced expanded support for the United Arab Emirates localization. For businesses with regional operations in Dubai, Abu Dhabi, or elsewhere in the UAE, customers will enjoy geographic support for their Nintex deployment.
- In February 2022, Nintex announced the acquisition of AI-enabled RPA firm Kryon. For the Nintex Process Platform, this acquisition delivers intelligent process automation capabilities for customers. Customers will benefit from automated process discovery technology as well as more advanced automation capabilities through machine learning optimization. Kryon customers, including Fortune 500 companies across financial services, insurance, and telecommunication industries, will now benefit from access and integration with Nintex's suite of automation and development solutions.

SALESFORCE

Salesforce is an expert in the 2021 edition of the LCAP Technology Value Matrix, as recognized for its host of applications used across the DevOps cycle. The Salesforce Lightning App Builder offers an intuitive user interface (UI) to develop new applications with various no- and low-code tools. Customers can use the App Builder to create responsive apps with a drag-and-drop interface, the Object Creator tool to transform spreadsheets into custom objects, and Flow Builder to drive productivity with point-and-click automation tools, among other capabilities. Apps created in Salesforce App Builder can be easily integrated with the Salesforce CRM system and other applications via pre-built API connectors or the MuleSoft integration platform. The App Builder is also complimented by a variety of other low-code solutions to support the DevOps cycle, available through the Salesforce Platform. Developers can also leverage Salesforce's extensive App Exchange platform, which includes thousands of other applications, components, connectors, and extensions that can be integrated into the application process.

Over the past year, Salesforce unveiled several new features to extend the value proposition of its LCAP platform.

- In April 2022, Salesforce introduced the Salesforce Platform for Slack enabling developers to build custom apps that pull key functionalities such as actions, automation, and insights directly from Salesforce into Slack. This allows developers to build apps that make Slack interactions more actionable and encourage collaboration.
- At Dreamforce 2022, Salesforce announced Salesforce Genie, its real-time customer data platform powering the Salesforce Customer 360. Genie can directly access data stored in Snowflake and enables users to easily share datasets across platforms without duplicating or moving data.
- In September 2022, Salesforce also announced new integrations with Amazon SageMaker. Now, customers can use Amazon SageMaker and AWS machine learning modeling service alongside Salesforce Einstein to build AI models with streamlined data accessibility.

With a consistently expanding low-code toolset and developer community, Salesforce's ecosystem is a differentiator. Nucleus believes that with new innovations to the low-code platform and the expansion of its AppExchange partners, Salesforce App Builder will be used for an increasing range of industry use cases and challenge dedicated LCAP vendors.

SERVICENOW

ServiceNow is an expert in this year's Low-Code Technology Value Matrix. The vendor services are global IT, Computer Software, Financial, Healthcare, Retail, Insurance, Oil and Gas, Higher Education, and government industries. The Now Platform is a cloud-based platform that facilitates enterprise app development for both internal applications and applications to be brought to market. Citizen developers can develop simple applications with pre-built app templates with ServiceNow App Engine and streamline system integrations with the ServiceNow Integration Hub. Professional developers leverage ServiceNow Studio to create and manage more complex web-based and mobile applications. Other features, such as the Guided App Creator and Flow Designer, help technical and non-technical users guide users with an intuitive interface to streamline and establish guardrails throughout the DevOps cycle. The Now Platform also provides out-of-the-box templates and flows to support HR, IT, legal, customer service, and finance departments. Customers often choose ServiceNow for their single platform approach that grants managers notifications, tracking, reporting, analytics, and dashboarding capabilities to manage projects and employee performance and workloads.

Notable updates from the past year include the following:

- On September 21st, 2022, ServiceNow launched the Now Platform Tokyo release to help organizations navigate complex business challenges during the uncertain macro environment. Leverage automation to improve trust in operations and accelerate the value that is beneficial for the organization and environment.
- ServiceNow and Qualtrics collaborated to provide a new application to improve employee and customer service experience. With Qualtrics Embedded Insights, IT and customer service agents have a unified platform to view employee and customer experience, enabling them to make smarter and quicker decisions to respond to consumer and employee needs.
- On June 3rd, 2022, ServiceNow signed an agreement to acquire skills mapping and intelligence company Hitch Works. The acquisition will add a new layer of AI skills to the Now Platform to address talent gaps by looping training and development to improve workforce planning.
- In May 2022, ServiceNow launched a new Procurement Service Management (PSM) solution to streamline procurement across the enterprise and speed deliver times through digitization and automation for improved sourcing processes.
- ServiceNow updated the Lightstep Incident Response platform to extend observability and create a differentiated portfolio for app development. The Lightstep Incident Response enables developers and engineers to reduce downtime

by providing service context and automation features to effectively respond to incidents, such as a power outage.

FACILITATORS

Facilitators in the LCAP Technology Value Matrix include Betty Blocks, Creatio, Kissflow, and Quixy.

BETTY BLOCKS

Betty Blocks is a facilitator on this year's LCAP Technology Value Matrix, recognized for its low-code development platform that provides non-technical users with an intuitive UI for building and deploying business applications. Delivered via a browser-based SaaS deployment, Betty Blocks is a lightweight deployment that does not require installation. As per its name, Betty Blocks' core value proposition lies in its module library, called "Blocks." These modules can be dragged and dropped into the development flowchart, enabling citizen developers to build full, complex applications by leveraging front-end UI tools, workflow builders, back-end connectors, and process automation tools. Betty Blocks allows customers to select between public and private cloud usage. It also allows the reusability of data models from previous applications in development. Betty Blocks additionally facilitates a hybrid approach, if necessary, with developers able to write code to create unsupported connections.

Notable updates in the last 12 months include:

- In September 2022, Betty Blocks joined Jameson Legal Tech as the consortium's ninth member. This partnership will deliver Betty Blocks to clients of Jameson Legal Tech, marking greater expansion into the legal technology market.

CREATIO

Creatio is a facilitator on this year's LCAP Technology Value Matrix, recognized for its low-code development studio, Studio Creatio. Offering an array of pre-built marketing, service, and sales solutions in conjunction with its low-code automation and custom application development tools, Creatio delivers immediate out-of-the-box functionality with the ability to bridge technology stack gaps through citizen development. Industry-specific solutions for financial services, the public sector, telecommunications, professional services, media and advertising, manufacturing and distribution, transportation and logistics, pharma, and retail are available. The platform additionally delivers business process management capabilities, including process monitoring, performance analytics, no/low code process design and

execution, dynamic case management for unstructured processes, and a process library for the storage of processes and workflows.

Notable recent updates for the product include:

- In September 2022, the vendor announced an array of new solutions available on the Creatio marketplace, bringing the marketplace module count to over 400. New additions include apps for mobile field services, survey management, connectors, and contact center automation. Customers will benefit from a wider range of apps to extend their custom applications, enabling more accessible and customizable out-of-the-box functionality.
- In August 2022, Creatio announced a new partnership with Nuummite Consulting, a Middle East regional provider of digital transformation end-to-end solutions. This partnership will expand Creatio to the Middle East market, enhancing accessibility for global customers operating in the region. Creatio additionally announced a partnership with ISB Partners in August, further emboldening efforts in the region through a Saudi Arabia-specific partnership.
- In July 2022, Creatio announced a partnership with Deloitte's digital transformation team in Romania. For customers of Deloitte in Romania, Creatio's application development platform will expand its presence and compatibility in the region.

KISSFLOW

Kissflow is a facilitator in this year's LCAP Technology Value Matrix. The vendor supports IT services, Financial Services, Education, Telecommunications, Computer Software, Automotive, Retail, Oil and Energy, and Logistics industries. The platform is a cloud-based solution used to build applications, automate business processes, and track performance for organizations of all sizes. Kissflow's low-code platform offers pre-built application templates, dashboards, and workflows. The sandbox environment supports developers with unit testing to identify and resolve bugs. Kissflow hosts several tools designed for citizen developers, including no-code drag-and-drop application build, customization, scale, and integration functions. The Process Creator tool allows users to design simple or complex workflows that include conditional tasks and parallel branches. Features such as team channels, announcements, video calling, and embedded chat further improve cross-departmental collaboration, which is necessary for projects that require business users and professional developers. Customers often choose Kissflow for its unified LCAP platform that supports the application build from ideation to publishing, alleviating technical debt and shadow IT risks.

Notable product improvements over the last year include:

- In September 2022, Kissflow announced an update for its analytics platform to integrate process management and collaboration on a unified platform to streamline business processes and maximize operational efficiency.
- In August 2022, Kissflow announced new integration connectors ActiveCampaign and FreshBooks. ActiveCampaign is a customer experience automation (CXA) software to help enhance the customer service experience. Pre-built automation features include email marketing, CRM, and machine learning algorithms to improve social and email outreach. FreshBooks is accounting software designed for self-employed professionals looking to send invoices, track expenses, and collaborate on projects.
- In May 2022, Kissflow announced three new integration connectors with Okta, Twilio, and Recruitree. Okta assists companies in managing and securing user authentication into applications while allowing developers to build identity control into applications, websites, and devices. Twilio allows Kissflow customers to engage with customers with flexible APIs and connect with them on preferred channels. The Recruitree connector is a collaborative hiring software solution to help internal teams work with other departments to enhance the hiring process.
- In April 2022, Kissflow announced three new integration connectors Kissflow dataset, Kissflow Teams, and Basecamp. With the Kissflow dataset, companies can create a new row or update an existing record in a dataset based on values from trigger steps or previous actions. For example, when a new item is approved to purchase, companies can add that item to the purchasing catalog dataset. Kissflow Teams places feeds where members can converse with other members of the organization. Basecamp connector is an online collaboration software that allows individuals to manage another employee's work. Keep track of tasks, deadlines, files, and announcements to improve operational efficiency.
- In March 2022, Kissflow launched five new integrations for customers, including Mailchimp, XE.com, Expensify, Smartsheet, and ClickSend. Customers can use Mailchimp to automate marketing and email services for mailing lists and create email marketing campaigns to send to customers. XE.com is an online foreign exchange platform that offers exchange rate intelligence, international money transfers, and other foreign exchange services. The Expensify integration makes it simple for customers to import expenses directly from credit cards while creating expense reports. With Smartsheet, companies can assign tasks, track project progress, manage calendars, share documents, and manage other work using a tabular user interface. ClickSend is a cloud-based service that lets users send and receive SMS, Email, Fax, and Voice worldwide.

- During the month of November, Kissflow launched live synchronization in channels. The launch grants users real-time notifications about changes in any open, closed, and confidential channel.

QUIXY

Quixy is a facilitator in this year's LCAP Technology Value Matrix. Headquartered in India, Quixy provides an app development platform with no-code emphasis for the citizen developer, enabling business users to lead projects throughout the entire DevOps cycle. As an industry-agnostic platform, Quixy supports customers in the Government, Professional Services, Manufacturing, and High-Tech sectors, including SMBs and global enterprises. Quixy predominantly serves the Indian market but has expanded its international presence in APAC, the Middle East, the USA, and South Africa. Users mainly develop internal departmental applications with proven use cases for cargo and asset management and HR payroll systems. Still, they can create outwards facing customer and partner portals with Quixy. Quixy also supports several companies that leverage the platform to bring technology solutions to market. Differentiated by its low total cost of ownership (TCO) and quick deployment speed, Quixy offers a comprehensive LCAP platform with project management, report building, workflow design, database management, dashboard creation, and integration management functionality.

Notable updates from the past year include the following:

- New data sources with in-depth data control features allow users to accelerate the reporting and visualization build process.
- Low code extensions offering pre-built options and functions are now available on the Quixy App Store, reducing the technical barrier for citizen developers.
- Users can interact with Quixy Chatbot, now available on Microsoft Teams, to access their applications and perform app-specific functions from the Teams environment.
- Snap2App, a new AI form recognition and building feature, enables users to build and populate forms by extracting information from Excel, PDF, images, and links.
- Users can apply configurable themes to customize the platform, ensuring adherence to the organization's branding guidelines.
- Integration with Zapier enables users to connect applications and workflows to over 3000 enterprise applications registered with the Zapier platform.
- New customization and personalization options for dashboards.
- A Payment Gateway integration enables online payments on the Quixy platform for Accounts Receivables use cases. Quixy currently supports payments through the

PAYTM gateway and plans to bring in other gateways, such as Razorpay, CCAvenue, and PayUMoney.

- Google Single Sign-On is now available on the Quixy platform and apps.
- Users can configure a scheduler to deliver reports to email inboxes, SMS, and WhatsApp.
- Label printing workflows can be embedded into Quixy apps.
- Facial recognition is now available for registration and authentication workflows.

CORE PROVIDERS

Core Providers in the LCAP Technology Value Matrix include OpenBots, Quick Base, and TrackVia.

OPENBOTS

OpenBots.ai is a core provider in this year's LCAP Technology Value Matrix. The vendor serves the eCommerce, healthcare, real estate, oil and gas, insurance, manufacturing, and financial industries. OpenBots is an on-premise and cloud-based platform that enables low-code robotic processes to improve organizations' efficiency and workflow management. Customers can use over 1000 commands available out-of-the-box in OpenBots Studio to automate their business tasks by building complex workflows to interact with applications deployed on the web, desktop, Citrix, API, databases, and mainframe. The platform also provides recorders to capture user steps and auto-generate code, reducing the time to market and overall effort for automation development.

A central automation orchestration capability is packaged in OpenBots Server, which allows the business users to track automation execution and manage business exceptions, eliminating the need for expensive IT Operational Support. OpenBots Documents allows customers to extract data to automate model configuration, classification, pre-processing, and extraction validation across structured and unstructured formats, making it easy to build workflows where information is needed from scanned documents. OpenBots Business Apps allows users to build low-code applications and electronic forms which can be distributed to collect information needed for automated workflows. Other products include OpenBots Assistant, Enterprise Server, Cloud Server, Business Center, Business Apps, Documents, Discovery, Support, Academy, and Ninja. Companies often choose OpenBots because of their usage-based pricing model labeled the Zero Bot Licensing Model, assisting companies previously restricted by per-bot licensing requirements.

OpenBots made several key announcements and updates to its platform over the past 12 months, including:

- OpenBots successfully completed SOC2 Type 1 examination and attestation in accordance with standards established by AICPA. OpenBots is also PCI-DSS and HIPPA compliant.
- In April 2022, OpenBots released its Ninja tool designed to help migrate RPA bots developed on other RPA platforms onto the OpenBots platform. With automated 1:1 process mapping, users can drastically decrease the labor required to manually export, transform, and import RPA workflows from the legacy system onto OpenBots. OpenBots Ninja currently supports migrations off UiPath with support for BluePrism and Automate Anywhere expected to be released later in Q4 2022 and 2023, respectively.
- On May 13th, 2022, OpenBots raised an additional \$15 million in capital from a group of private investors. The investment allows the organization to accelerate research and development into new automation solutions.
- OpenBots launched RPA Tool Suite Version 1.8.7 in October 2022. Focusing on improving user-centered functionality, the OpenBots Assistant is a simplified tool to enhance automation features for non-technical users. The OpenBots Business Center gives consumers the ability to create custom websites and forms from user submissions for both integral and external, allowing for automated responses for user inputs. Other commands added include Security, Privacy, Authentication, Azure Authentication, and Salesforce.

QUICKBASE

Quickbase is a core provider in this year's LCAP Technology Value Matrix. The vendor caters to the IT Services, Software, Healthcare, Financial Services, Construction, Telecommunications, Advertising, Higher Education, Oil and Gas, and Retail industries. Quickbase is a low-code platform that allows technical and non-technical to create, connect, and customize cloud applications for companies of all sizes. Unifying processes on a single platform streamlines IT and citizen developer collaboration to promote simplicity within the ecosystem. QuickBase Pipeline APIs allow users to connect data and manage automated workflows and visual processes on a central platform to reduce operational costs and improve developer efficiency. Customers often choose Quickbase for its secure no-code governance that removes communication silos between teams to promote collaboration by establishing IT models that protect enterprise data.

Notable product updates from the past year include:

- In September 2022, Quickbase Sync added additional benefits to provide improved details for connected tables. New values and operators are available for date and time filters for connected tables.
- During August, Quickbase revised its dashboards to help specific search types in text filters match search terms and allow for constraint matches. New chart updates now show record totals, helping display the total number of records returned by the report. The new pipeline update now supports email file attachments.
- On June 12th, 2022, the vendor launched a new Audit log API to effectively govern actions taken on a specific system. The launch gives companies the ability to audit a full day's worth of events to analyze behavior and external systems.
- On May 10th, 2022, Quickbase announced a new report builder panel on Kanban reports, allowing users to view report data while making edits.

TRACKVIA

TrackVia is placed as a core provider in the 2022 edition of the LCAP Technology Value Matrix. TrackVia is a business application development platform featuring various no-code tools to fill the gaps in an organization's tech stack and drive efficient business processes. TrackVia is a fully code-optional platform with drag-and-drop configuration for citizen developers and advanced coding tools for technical teams. Citizen developers and front-line business users can also TrackVia's FastTrack to convert pictures of forms into functional applications with centralized data storage and built-in reporting. With these capabilities, TrackVia customers can digitize their operational processes and create various web and mobile applications. The platform can also easily connect to various existing ERP and CRM with over 300 pre-built connectors and features multiple security certifications, including ISO 9001, ISO 27001, SOC 1/SAW 3402, SOC 2, and HIPPA compliance. If TrackVia can continue to extend the accessibility of its application development platform, Nucleus anticipates improved placement on future editions of the LCAP Technology Value Matrix.