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# From Low-Code to Codeless Rapid Application Development

How to drive your business transformation with  
a codeless enterprise application platform



**'A 2018 market report by Report Buyer suggests that, 'The low-code development platform market size is expected to grow from USD 4.32 billion in 2017 to USD 27.23 billion by 2022, at a Compound Annual Growth Rate (CAGR) of 44.49% during the forecast period.'**

Rapid-Application Development (RAD) is a term used to describe any form of adaptive approach that speeds up the process of creating and deploying software applications.

The idea that smarter advanced programming languages and methods can speed up the task of developing software is nothing new. There has been a long-running quest to improve productivity by allowing business people to generate their own programs using rapid application development (RAD) tools.

**Low-Code** and **Codeless** enterprise applications platforms look to reduce the time, cost, technical complexity, and risk of software development by negating the need to code or script, thereby improving all aspects of the application development lifecycle.

In this guide we explain how the market for RAD tools has evolved from Low-Code to Codeless tool-sets—and why.

# 01



## Rise of the Citizen Developer

In 2018, analyst firm Gartner declared, 'Everyone's a developer.' They defined a citizen developer as - 'a user who creates new business applications for consumption by others using development and runtime environments sanctioned by corporate IT.'

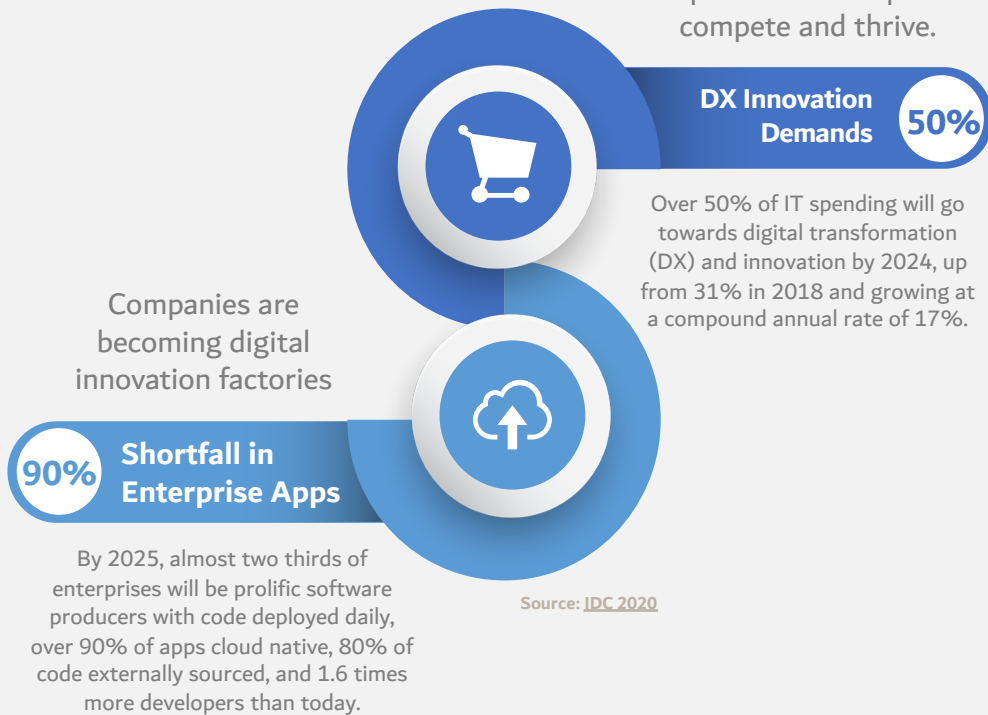
In its latest report on the subject, Gartner suggests that, 'By 2023, the number of active citizen developers at large enterprises will be at least four times the number of professional developers.' They state 'Business units increasingly control their own application development efforts, of which citizen development will play a crucial role in the future of apps.'

At encanvas, our audience of citizen developers is made up of ideas-people—the execs, analysts and marketers— those individuals who want to develop a software application to service a business need.



# 02

As more than half the global economy turns digital by 2023, a new species of enterprise will be required to compete and thrive.



## A Thirst for Apps

The world demand for new apps is at an all time high.

In most enterprise IT stacks, a huge gap exists between the Systems of Record that run core back-office systems, and the orchestration demands that exist today to fully automate a business model. The role of situational apps (authored using codeless methods) is to deliver the long-tail of apps demanded to fill that gap.

Building one app at a time, these application fabrics progressively build a digital ecosystem for the enterprise that's able to serve ALL of the stakeholder groups that want to serve themselves with data.

# 03



## Separating Duties in App Design

Improving and shaping IT systems demands a partnership between **Ideas people**—that know how an app should work—and **IT professionals** who know ‘what technology can do’ and how IT needs to function to maintain systems and service continuity.

IT teams are focused on ‘keeping the lights on’ and servicing existing core business systems that are slow to change. Additional duties placed on IT to rationalize legacy software, keep data safe, and govern its use have added further burdens on already stretched IT teams.

They lack capacity to build ALL the apps a business needs.

Many organizations are prevented from rolling out the apps they need due to the lack of availability of IT resources. Departments and users can take it on themselves to build their own apps using Excel and other desktop tools. This can drain corporate capacity, increase data security risks, and reduce the quality of apps.

# 04



## Why Low-Code isn't Low Enough

In a digital age, manual coding by humans is too slow and costly. For this reason, some vendors have developed low-code platforms that reduce the amount of coding needed to deliver apps.

**But low-code isn't low enough.** The existence of code or script on a screen is enough to create a language barrier between the business people—who know what they need—and IT.

**Coding apps manually takes time, resulting in the need to develop off-line instead of building apps with stakeholders in workshops.**

There is an unprecedented demand for IT programmers with higher level skills. Those coders want to focus their efforts on higher computing challenges, not designing forms, buttons and boxes!

Manual coding introduces bugs that need to be tested. This can add 30% more time and cost to projects.

# 05



## What to Expect

- Tooling to develop, version-control, test, deploy, execute, administer, monitor and manage applications
- A codeless approach to the creation of UIs, databases, business logic and data definitions
- Support for development by citizen developers
- One-click deployment
- Support for enterprise-grade projects with:
  - High availability and disaster recovery
  - Secure access to application services
  - Technical support to customers
  - Third-party application access to application logic and/or data via APIs and/or event topics
  - Scope to add third-party DLL, code, script, data visualizations, mapping engines, algorithms etc.



## Prototypes and Live Wireframes

Any form of design activity is wasteful. Making apps is a creative process and it's uncommon to get everything right first time.

It's better to keep growing and learning along the way than attempting ONE BIG LEAP in an attempt to satisfy everyone. Experience has shown the best way to build apps is to start small and 'fail-fast' by adopting a prototyping approach.

It's incumbent on the app dev tool-ware to economically iterate designs, giving designers full control over the creative process, and access to all of the technology tools they need.

Codelessly authored **Live Wireframes** allow app designers with no coding skills to create ready-to-publish apps with stakeholder groups in workshops without needing to involve IT experts.



# 07



FINANCIAL  
DATA



SAP

CUSTOMER  
DATA



Salesforce

TRANSACTION  
DATA



Amazon

SERVICE  
DATA



ORACLE

## Dealing with Integration

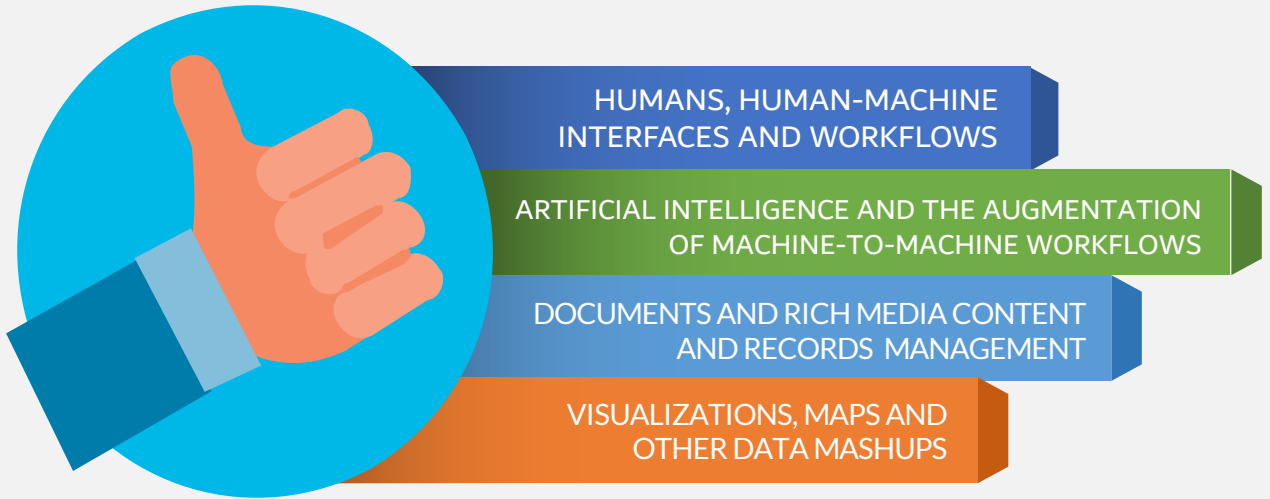
No app can function in isolation these days. New apps need to work with the old, harvest data from third-party systems, and cleanse the data they receive. Managing the \*data challenges can de-rail projects.

Many projects fail due to poor quality data, or the absence of data links between referenced tabled.

An additional type of integration results from the use of third-party software tools, visual interfaces, and artificial intelligence algorithms in workflows. It's important the codeless design environment removes inhibitors to integration so designers have the maximum discretion to use the data and tech components they WANT to use.

\*A key ingredient to codeless authoring solutions is the ability to support 'micro-automations' within data workflows. These are if/then rules-based decisions to act on data at a binary level within apps rather than relying on the configuration or development of script in back-office database systems; an activity that takes a lot of time. Addressing these issues for 'non-coders' can be challenging.

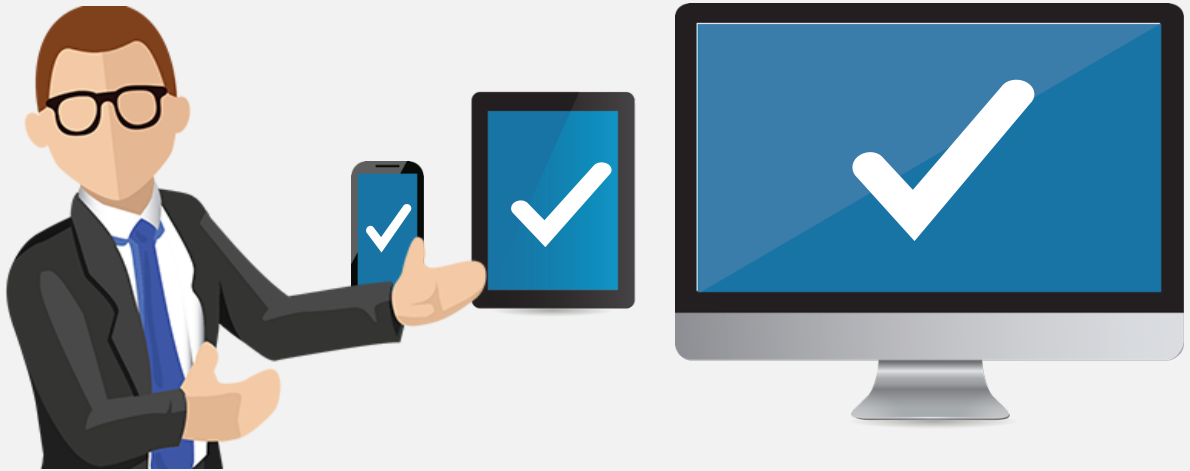
# 08



## Blending Automation Technologies

To fully orchestrating business models requires a blend of technologies different ways to get jobs done. Humans continue to play a key role in customer relationships, managing exceptions, and making decisions. Artificial Intelligence is great for learning new things from lots of data and making recommendations. Software robots can mimic many of the things that humans do to process data. Documents can be useful to help humans make sense of data and transport it.

All these methods need to be accessible to app designers in one place so they can take their ideas all the way from a concept to the publishing of an app. Irrespective of their feature-set, it is essential for app platforms to be able to ABSORB code and third-party apps, otherwise their scope of use would be extremely limited in the enterprise. For this reason, modern codeless platforms should be able to combine code, script, algorithms and more natively within their architecture.



## Rolling Out Apps

Rolling out apps needs to be as simple as the design phase. Most app dev platforms today assist in the creation of help files and documentation. It may be that your app will be used around the world.

**Language support, international replication and scaling** are all considerations that IT teams will need to think about.

**Mobile apps** today matter every bit as much as their desktop counterparts. Designing for mobile requires a different mindset and interface approach. Your app stakeholders will expect to access all of the features provided by the app on their smartphone.

**Data security** has never been so important, and it's made more challenging to govern as remote working and mobile use grows. You will need to make sure that apps are safe for data and provide important security controls over user authentication, the safety of data in transport, and at rest.

# Encanvas Solutions for CODELESS RAPID APP DEVELOPMENT

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A Thirst for Apps  
Separating Duties in App Design  
Why Low-Code isn't Low Enough  
What to Expect  
Prototypes and Live Wireframes  
Dealing With Integration  
Blending Automation Technologies  
Rolling Out Apps

LW	✓	✓	✓			✓				Live Wireframe
ApF	✓	✓	✓							AppFabric
S&L	✓	✓	✓				✓	✓		Secure&Live
iFX	✓	✓	✓				✓	✓		iFX Suite
HD						✓	✓	✓		HyperDrive Plug-in
CLE	✓		✓			✓	✓	✓		Chain Link Editor
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## Live Wireframe

Codeless app to support the real-time design of prototypes in a workshop environment without seeing or using code.

## AppFabric

A private-cloud Appstore that builds a single-view of data across your enterprise, one app at a time.

## Secure&Live

Our premium app ecosystem for organizations seeking to maximize their customer value and profits based on (remotely managed) codeless design, integration, deployment, and operation principles.

## iFX Suite

Our iFX information flow design and robotics suite equips organizations with the ability to deploy bots to harvest data, act on data at end-points, transform data, and perform processing tasks by mimicking the activities of humans.

## HyperDrive Plug-in

Codeless plug-in technology that gives designers the ability to embed AI, code, script, algorithms and data visualizations into business processes.

## Chain Link Editor

Equips process designers to embed cause-and-effect data processing actions into apps.

## Secure[Spaces]

A private cloud app deployment ecosystem that employs container technology to simplify the management, maintenance, replication, security, governance, upgrading and retirement of apps.

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