



RIViR—A Low-code, No-code
Software Platform that Quickly
Delivers Low-cost, Low-risk Services



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Executive Summary

Policy shifts, changes in law, and changes in society all impact the types of service and delivery of service for federal and state agencies. Most business solution software deployed by federal and state agencies are custom developed and have been around for many years. Sometimes, decades. Changes to custom software solutions can be costly, challenging to implement, and a risk to crucial government services. Low-code, no-code software platforms provide a way for government agencies to quickly deliver services to their constituents in a low-cost, low-risk, and low-impact manner.

Low-code, no-code platforms allow organizations to deploy custom applications simpler, faster, and cheaper...

Overview

This white paper details how Qlarant’s flagship solution, RIViR, provides a set of tools that can help government agencies provide much needed services quickly and inexpensively by building custom applications using minimal code.

What Are Low-code, No-code Platforms?

Low-code, no-code software development platforms are desktop or web-based software systems that give users the ability to build mobile and web application using a drag-and-drop graphical user interface (GUI). Low-code solutions work by providing the user with a number of pre-defined and pre-built components a user can *string together* to build custom functionality. Low-code, no-code platforms have been around for quite some time in different iterations. Claris FileMaker is a desktop application that gives end-users the ability to create complex and sophisticated applications that run on a number of computer operating systems and mobile platforms. FileMaker is a seasoned platform that has been in use for decades. Newer tools such as AirTable, Bubble, and others are focused on building cloud-based web applications. These tools go a step further than FileMaker and allow users to use drag-and-drop editing techniques to integrate with databases and online services including social networks and other web applications.

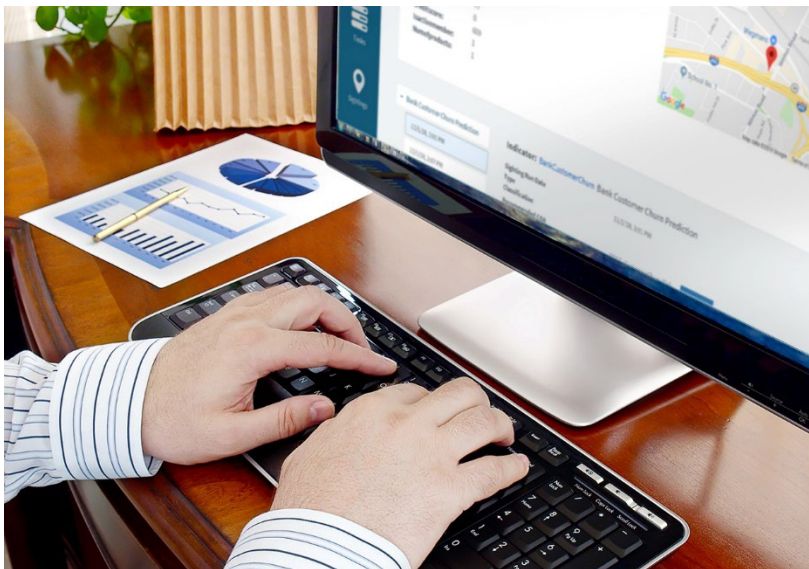
Sometimes low-code, no-code platforms come in forms we don’t suspect. For many years, enterprises have relied on Microsoft Access and Microsoft Excel to build quick and dirty form data capture applications when an organization’s needs were simple and immediate.

Low-code, no-code platforms allow organizations to deploy custom applications simpler, faster, and cheaper than going through the process of writing a custom application from the ground up. Low-code, no-code platforms remove the need to choose programming languages, database platforms, and other

components to build an application. The vast majority of functionality, including data storage, are all provided by and managed by the low-code, no-code platform.

The Challenge of Many Low-Code, No-Code Platforms

Low-code, no-code platforms have a distinct advantage over writing custom built applications from scratch when it comes to simplicity, speed, and cost. There is a key factor of most low-code, no-code solutions have that make these platforms inadequate for some use cases.



Low-code, no-code platforms are broadly generic. Most low-code, no-code solutions are designed to be used across a wide spectrum of industries and problem domains. Therefore, these

platforms provide components that cover basic problem solving, but prove unsuitable for the most challenging regulatory and policy driven scenarios. The most heavily regulated and compliant industries such as healthcare, finance, and others overwhelming rely on hiring software teams to gather requirements and write custom applications for their organizations.

But this is quickly changing, and this is where seasoned companies that have decades of regulatory and compliance experience are disrupting markets. This is also where Qlarant's RIViR Solution Suite is making a difference.

A Real World Case Study

Medicaid has defined several External Quality Review protocols used to assess Managed Care Organizations (MCOs) for compliance with Medicaid policies and regulations. An MCO is a health care company such as Aetna, Cigna, and others. An MCO's goal is to provide cost effective healthcare.

One of Medicaid's External Quality Review protocols is called Encounter Data Validation (EDV). In a nutshell, External Quality Review Organizations such as Qlarant, obtains electronic medical records from MCOs and compare the information contained in those records against claims filed for service with Medicaid. When a patient visit their healthcare provider for service, that doctor visit is called an *encounter*. If the information recorded on a patient's medical record doesn't match the medical claims filed with Medicaid, the *encounter* is out of compliance. The EDV protocol is used to enforce compliance on Managed Care Organizations.

The EQRO Challenge

One of the primary challenges for External Quality Review Organizations is efficiency. EDV operations often occur at different times of the year for a short period of time. Furthermore, EDV operations require end-users to review multiple documents for a patient encounter. Some EDV operations may have a one or two month review period, in which over 1 million encounters must be reviewed.

Given the short review period, high data volume, and information handling, many EQROs resort to writing a custom application from scratch. This poses a huge risk however, in that different states have differing policy and filing requirements. Furthermore, not all electronic medical records are treated equally. The data can be inconsistent from state-to-state, and often times the phrase, *electronic medical record*, means a scanned copy of a handwritten page. These risks make homemade or contracted, custom written software a risk for EQROs. Unfortunately, most low-code, no-code solutions are too generic to support the policy and regulatory requirements needed for handling sensitive personal health information.

The Cost of Custom

A successful and reliable custom written application requires many things. A custom project requires a project manager to maintain the overall schedule, a scrum master is needed to run the project on a daily basis and insure tasks are completed timely, software developers are needed to design and write the code, and testers are needed to verify and validate the software performs as it was designed. All of these roles can be costly for a successful software project, and we haven't included the subject matter experts who understand policy, security staff to insure the software doesn't contain vulnerabilities, and business analysts needed to capture requirements for design.

Considering the costs, many EQROs resort to *cobbling* together a solution using office productivity tools involving spreadsheets, desktop databases, and an online collaboration tool such as SharePoint.

Introducing the RIViR Solutions Suite



Qlarant took the initiative and began crafting a low-code, no-code solution for the healthcare industry based upon four decades of health industry experience. The RIViR Solution Suite includes three components for building custom healthcare applications using minimal code. The suite is used to build web-based solutions and includes a set of authoring tools for create sophisticated business processes and workflows that can be as simple or complex as the organization demands, a visualization toolset that is used for creating reports, analyzing data, and monitoring progress, and a data processing component that can be used to perform advanced analytics including AI/ML processing.

RIViR is designed for end-users who want to build sophisticated applications without the need for software developers. RIViR provides authoring tools that feature drag-and-drop interfaces for reports and business processes with the ability to make changes on the fly. RIViR has a minimal code for business solution philosophy and has adopted the Python programming language for data analytics processing. Additionally, Qlarant predicted the need for advanced users and organizations to extend the platform. RIViR provides a number of application programming interfaces (APIs) and a software

development kit (SDK) giving software developers the ability to extend and integrate RIViR with their existing software.

RIViR's end-user capabilities are all contained in a single platform giving users the ability to run applications and view reports in the same user interface.

RIViR EDV: A RIViR Solution

The Encounter Data Validation business process is relatively simple, but is backed by firm regulations. An MCO must send a number of medical claims for their patient encounters to the EQRO. The EQRO performs a review against the supplied medical claims against the electronic medical records containing the patient's information. The EDV reviewer must validate that multiple parts of information are accurately filed by the medical claim. If the medical claims don't match the records, those claims are non-compliant, and must be changed or charges reversed. If there's a pattern of improperly filed medical claims that may be a sign of fraud and the penalties for committing Medicaid fraud are severe. Fraudulent claims must be investigated and sent to the proper authorities.

Given the short time frame, and high volume of claims, most EQROs employ a team of reviewers in the 10s and 20s to split the load of claims sent in by MCOs. Any EDV solution would have to be a multi-user and simultaneous access system to be effective.

RIViR EDV is a solution built using low-code techniques. A minimal amount of Python code was written to accept MCO Medicaid claims and process them for review. Business analysts and subject matter experts using one of RIViR's authoring tools, the RIViR Modeler to create a new and advanced EDV Medical Review workflow that captured all of the steps an EDV reviewer would need to follow in order to validate claims against a medical record. The business analysts used the Modeler's drag-and-drop interface to introduce decision points to enforce the underlying policy, while making it easy to specify medical codes, illegible records, and other details needed by Medicaid. Additionally, business analysts and subject matter experts created a number of reports, charts, and visualizations that can be presented within the application as well as bring delivered to the authorities. These advanced reporting capabilities also made it easy to assess the review team's progress, schedule workloads, and monitor team performance.

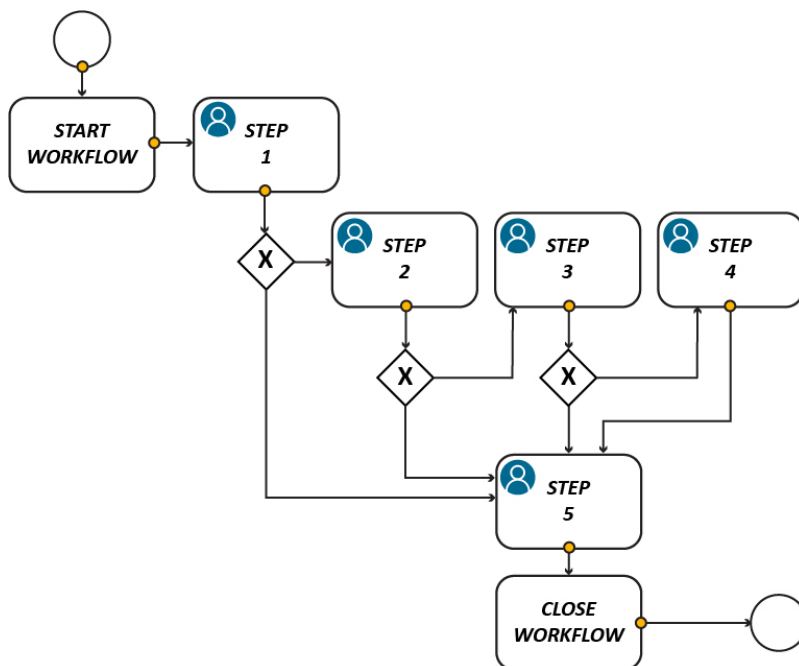


Figure 1—EDV Workflow Using the RIViR Modeler (step names omitted)

The RIViR EDV solution is a proven success over the custom solution that was previously used at Qlarant. The RIViR EDV solution was designed and implemented without developer involvement with business analysts, data scientists, and subject matter experts leading the implementation. Business analysts were able to author a complete solution featuring advanced skip conditions, custom data capture forms, and reports without the need for software development staff. When changes were required to the business processes or reports business analysts made their changes using RIViR’s authoring tools and deployed them when they were ready, not after a patch was made available and ready to install.

Using RIViR EDV, Qlarant has achieved a 96% efficiency for developing an EDV solution compared to having a custom code solution developed. Furthermore, RIViR EDV has made Qlarant more competitive as an EQRO. The RIViR Solutions Suite drives down the cost of making changes to support different states, and makes applications reusable. Qlarant regularly executes EDV operations across multiple states and the District of Columbia simultaneously throughout the year.

The Cost Benefit of RIViR

In a world of competing priorities and competition over resources, being able to provide services at the lowest cost and highest value is of paramount importance. Qlarant has realized significant cost reductions by using the RIViR Solutions Suite to create applications for our government customers and have passed these savings to the agencies.

After gathering solid requirements, and understanding project scope organizations can achieve anywhere between a 50 to 70 percent efficiency gain by using RIViR as a low-code solution. Internally, Qlarant has recognized significant productivity gains by using RIViR to create solutions. These figures for the RIViR EDV solution and a Program Integrity application are illustrated in the following chart.

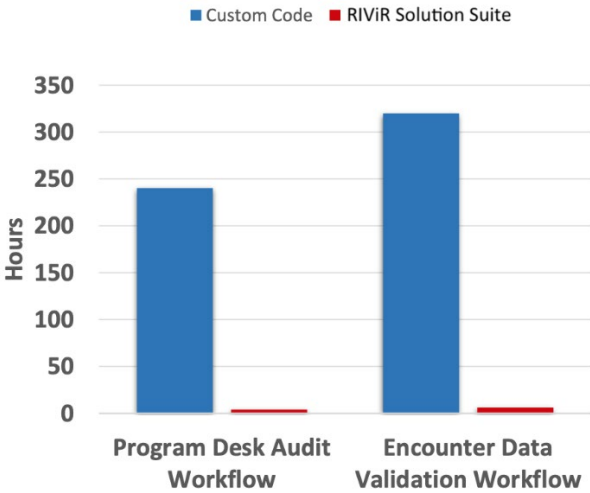


Figure 2—Custom Code vs RIViR Solution Suite

Evaluating a Low-Code, No-Code Platform

Low-code, no-code platforms have their advantages and disadvantages. When evaluating a low-code, no-code solution several factors should be considered. Privacy and security should be at or near the top of the list considerations. Does the platform consider risk management frameworks such as the NIST standard 800.53, or HIPAA compliance in the case of health information systems? Regulatory compliance for software systems are a requirement for some industries. Is the system MITA-ready is a good question to ask in determining if a low-code, no-code platform can adequately build applications that utilize health information? After considering privacy, security, and regulatory features and capabilities the low-code, no-code platform’s application authoring, data connectivity, and scalability should be considered. Low-code, no-code platforms are designed to offer the broadest set of components and tools for building applications. Does the platform’s authoring capabilities provide enough support for your industry? Many agencies and regulated industries send and receive data across new and legacy systems in a myriad of file formats and databases. Does the platform’s data connectivity features support the data sources in my industry?

Conclusion

Today’s low-code, no-code platforms are providing a compelling alternative to writing custom applications, but many solutions are developed for the widest range of problem domains and many are not adequate for heavily regulated industries. Experienced companies like Qlarant are using their experiences and best practices to build innovative and market demanding platforms like RIViR which are designed to securely handle sensitive data while providing the flexibility and toolsets for business analysts and subject matter experts to build custom applications without writing code. Leading platforms like RIViR go beyond others by providing a single, unified user experience for end-users.

Visit Qlarant.com and learn more about the RIViR platform. You can read case studies, watch videos, and schedule a demo.

