

Low-Code Platforms and Business Process Transformation

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Article Information

Article history:

Received Nov 3, 2022

Revised Dec 5, 2022

Accepted Dec 19, 2022



ABSTRACT

Most of the businesses have transformed themselves digitally as per current trend. Many of the digital technologies are integrated with current business process to make the things better. Business has to deal with many other challenges too. In such scenarios low-code platforms have helped the business to build the applications faster and with minimal coding. Low code platforms are technology mechanisms that provide a faster delivery of applications through minimal coding and visual components. It has eliminated the dependencies of traditional computer programming. Since last few years, the interest in these platforms has increased in the business sector. Low Code Development Platforms (LCDP) provides visual environment like drag and drop which make it easy to develop an application in less amount of time compared to traditional development environment. Low code platforms have automated the development of applications suitable to business needs. LCDP platforms are helping development of a project without writing many lines of codes. IT professionals don't need to have specialized knowledge of every technology or tool to assemble new applications which aids in faster development of work. Growing number of businesses have noted the positive outcomes by implementing low code mechanisms and have observed a boost in productivity as it offers application development with minimal coding as a user can develop an application without IT knowledge. Due to this technological solution, businesses can work with a collaborative network. The primary contribution of this study is to present the description of the emergent low-code domain, which is based on a theory-building research through the review of literature and other information from available sources. This research represents the industry aspects and challenges of low code development platforms and also discusses how low-code platforms can facilitate the building of scalable applications with outstanding features. Organizations across every industry are using LCDP to build value driven business solutions. Text alignment should be justified, not more than 200 words in length and one paragraph.

KEYWORDS: Low code development platform, application, platform, digital, business.

1. INTRODUCTION

There are variety of software development techniques have been evolved. The objective is to improve software quality and development productivity. The organisational work pattern has also undergone a significant transformation as a result of digitalization. Business process is optimising the IT system to achieve the business goal in short span of time and with available workforce.

One of the business objectives is to deliver the best value to the customer. To cope with the changing market needs, businesses need to provide quick responses on the development front. Business is looking for quicker and cheaper way to develop the

application. "Low-code" platforms are a new class of software development that has emerged in recent years. The term low-code development platform (LCDP) is now used to refer to the platforms which are helping development of a project without writing many lines of codes.

IT professionals don't need to have specialized knowledge of every technology or tool to assemble new applications. LCDP enables them to create the projects with available ready to use objects. It also enables regular people to create websites or applications that can be tailored on a single platform. It is also for the users who have limited technical knowledge or less time to develop an application.

Salesforce, Wix, WordPress, and Weebly are some of the popular low-code content management systems. Zoho Creator, Visual LANSAs, Retool, GeneXus are also low code platforms which are popularly used. They all offer the functionality in a way that makes it easy to use for creating customizable websites or user interfaces without special assistance. It is possible to develop fit-for-purpose applications using LCDP platforms without special assistance. It also adds customer satisfaction as organizations can deliver rich user experiences.

The majority of the low-code platforms run in the cloud, which also automates most tasks as the programme is being improved. Finding qualified developers is a constant struggle for a business by keeping cost factors into consideration. Low-code solutions require less code development work, so their long-term cost is automatically reduced. According to Statista research, by the year 2027, the low-code platform market is forecasted to reach approximately 65 billion U.S. dollars.

1.1 OBJECTIVES:

This paper is carried out with following objectives.

- To understand the concept of low-code
- To understand how it differs from traditional systems
- To study the features, pros and cons of low-code platforms

2. LOW CODE DEVELOPMENT

A low-code development platform provides an environment that offers a graphic user interface for IT programming, which allows quick code development and less traditional programming work. The flexible platform is effective in facilitating quick setup, management, and deployment as well as efficient coding. It has the tools like drag and drop facility, pre-built templates and intuitive user interface to facilitate development. These building blocks can be used to create workforce by IT professionals.

This technology tends to rapid development of code and assist with speedy setup and deployment. It allows the organization faster code development as there is no need to write code with thousands of lines. It has contributed to IT alignment. It is suitable to the people who do not have much knowledge of coding or who want to develop software in less time. Software professionals can build several applications such as mobile and web based applications with its use.

Large software vendors, including IBM, Microsoft, and Oracle, have begun to incorporate low-code solutions into their product portfolios. (Bock, 2021) These platforms are usually accessible through free or low-cost self-service offerings. They are based on free and freemium models. Most low-code development platforms are available as public cloud services (Sanchis, R., García-Perales, Ó, Fraile, F., & Poler, R., 2020)

3. METHODOLOGY:

This article covers the features of low code platforms including its pros, cons and various aspects to the business. Low code platform can fulfil the requirement of business instantly. The cost of development is even less compared to traditional development. This paper is based on the secondary data available at various sources in context to the subject.

3.1 LCDP COMPONENTS

The components of any low code platform can be categorized into three tiers: application modeler, server side and its functionalities and the other external systems that are integrated with low code platform. The application modeler is concerned with the developing of the application by providing modeling constructs and a graphical interface. It includes various widgets, drag and drop capabilities, authentication and authorization schemes, data model, business logic flaws, connectors and more. The middle tier consists of compliers, code generators, optimizers. It takes the model of an application which is received from the modeler and then perform operations like code generation and optimization for model management (Talesra, K., & G. S., N. 2021)

3.2 COMPARISON OF LOW CODE DEVELOPMENT WITH TRADITIONAL DEVELOPMENT MODEL:

Custom software in traditional programming is prepared as per an individual's requirements. It tends to have a higher cost and takes more time to develop. LCP based applications can provide a close fit to business requirements. Low-code software development uses a visual development methodology as opposed to traditional software development, which focuses on writing thousands of lines of code using programming languages.

LCDP can be implemented quickly, and typically costs much less than systems developed in-house. With drag-and-drop features available, users can usually design and implement their individual or departmental systems in a lesser amount of time. Low-code platforms provide benefits to non-technical developers and professional programmers as well. With traditional software development, a certain environment and programming language must be chosen, but LCDP eliminates this constraint. When using traditional programming, development teams will have to put in a lot of work to make their solution operate outside the constraints it was designed for, whereas with LCPD, they eliminate this problem as low code visual elements with drag and drop functionality are designed to work across different environments. These features have provided LCDP with a certain market advantage compared to the traditional development model.

3.3 ASPECTS OF THE TREND IN INDUSTRY

In the 1970s and 1990s, 4th Generation Programming Language and Rapid Application Development introduced the first technologies that later developed into the low-code of today. The 1985 release of Microsoft Excel marked the beginning of the low-code era. Now among the research community also, the trend toward low code platforms is increasing.

Low-code development is a trend that is supported by a compelling narrative. It is well recognized that the scarcity of qualified software engineers presents a significant challenge for many businesses as they attempt to effectively navigate the digital transition. Additionally, there is the enduring issue of software development projects' frequent inefficiency or complete failure. Vendors and market research companies portray LCPs in ways that relate to these issues and provide solutions.

Low-code enables developers of various skill levels, including professionals, amateurs, subject matter experts, business stakeholders, and decision makers, to produce value-driven corporate business applications.

4. POPULAR LOW CODE PLATFORMS IN INDIA

With low-code systems, you can create applications without requiring skilled programmers with extensive experience in a particular language. Without any prior coding knowledge, anyone who is familiar with the fundamentals of a certain technological platform can create their own programmes.

Companies of all sizes utilize them to meet the rising need for personalized apps that can be modified quickly. Some of the popular low-code platforms include Microsoft PowerApps, Google AppSheet, Sales force, App Builder, and Zoho Creator. These platforms are suitable for large, medium, and small scale businesses. Their deployment is over the cloud, and they allow businesses to develop applications quickly and without the need for expensive and time-consuming custom coding. They give enterprises a means of creating and deploying applications without the need for internal IT staff or pricey consultants. Low code platforms give businesses a method to quickly experiment and iterate on new concepts and apps without having to spend money on labour-intensive coding. It enables companies to distribute programmes on a wide range of hardware and software, including mobile, web, and cloud-based platforms.

4.1 FEATURES OF LOW CODE PLATFORMS:

- **Drag-and-drop interface:** Low-code allows simple drag-and-drop so developers can create applications visually, resulting in faster time-to-launch. It involves no extra effort, coding, or resources.

- **Mobility:** mobile devices like cell phones and tablets are used extensively. Applications with cross-platform functionality are accepted widely.
- **Security:** Today's low code platforms have all the necessary security certifications in place, and proven experience with large-scale initiatives.
- **Scalability:** Low-code platforms optimise developer productivity and boost agility, enabling enterprises to launch new apps more quickly as well as modify current ones more quickly in response to user input or market changes.
- **Pre-built templates:** low code platforms provide pre built templates that can just be dragged and dropped wherever required. It makes the development work quicker.
- **Cross-platform accessibility:** Low code platforms provide cross-platform accessibility. So the deployment of new apps is possible quickly, as per customer demands.
- **Less investment:** LCDP provides faster development in less time. Businesses can get the job done with minimal investment compared to a traditional pattern.

4.2 CHALLENGES THE BUSINESS IS FACING

- **Lack of network:** IT developers have a lot of work. It is difficult for them to meet the various demands of custom applications.
- **Budget:** This could be a problem because not everyone has enough money to create a custom application.
- **Need for skill:** non-technical users may not have enough skill to develop the system.
- **Integration:** in some cases, there may be difficulty integrating the front-end and back-end.
- **Constrained performance:** A business could not receive the precise capabilities they require, and customization may vary between platforms.

5. REASONS FOR USING LOW CODE PLATFORM

In the context of development, the two main goals of any organization are to increase productivity and reduce costs. LCP is intended to achieve these objectives. This is a requirement for any company involved in the development of software or services. If we compare the classical integrated software development, it is able to achieve the goal in the right direction. The organizations that are able to adopt this new technology are able to achieve the benefits at their core.

Low-code development platform plays very important role as technology based solutions are having ever changing nature and nowadays mobile based apps are much in demand. Low-code platforms

have made application development quite simple by using features like drag-and-drop functionality and visual guidance in place of a heavy reliance on programming. It has eliminated the dependencies of traditional computer programming, as one can create an application even with little core programming knowledge. Low code is an option where you may interact with the system on what to develop, and the system will create the application for you. Low code platforms provide faster delivery of applications as there is minimal coding and more use of visual components. It provides drag and drop features that speed up the application development process. Its strongest point is that non-technical users can also develop the application without special assistance. LCDP includes a pre-built user interface. It also reduces the dependency on having a strong technical team, which helps reduce the IT backlog and increases responsiveness. The rapid application development enables the business to achieve the goals in prescribed time frame and increases productivity on the business side.

According to straits research, LCDP market size is projected to reach USD 148.5 Billion by 2030 growing at a CAGR of 27.8%. Low code platforms are affordable; non-technical staff can use the servers without specialized help, resulting in significant ownership cost reductions.

6. MANAGEMENT PERSPECTIVE FOR THE LOW CODE PLATFORMS

LC model provides several benefits but it also has some challenges. If a developer has created some application and he leaves the company, then it is difficult to support that system. LC may help to solve such situation. Developers and user can work in collaboration in which 80% of the part will be developed by user and remaining support may be provided via developer. Cloud bases architecture in context to low code platform is available which offers a continuous support and secure and scalable data. Based on the requirement and functionality provided, a suitable low code platform is to be chosen.

7. CONCLUSION

Organizations can either invest more amounts in traditional programming or can go with LCD platform for application development. Either organization can go with hybrid approach. The IT sector faces a pressure to develop the software applications in limited time and as per user's expectations. They can use traditional method or high code for complex things and can use low code for straightforward things to make the application manageable. As the demand for various applications have increased, there is a requirement to manage it quickly which is a priority for the business. The number of low code platforms is increasing and it has brought revolution in the industry. LCDP can be useful for different purposes.

Although, it is difficult to find a suitable one for your business. For some business, if not deployed properly, issues such a lack of flexibility and integration may arise. As per the need of the business, appropriate platform should be chosen. They allow business users or software developers to deliver a variety of applications in less amount of time. It has automated many steps of development which is accessible to the users with little or no technical assistance. LCDP has elevated the application development method from textual to visual model. Professional developers may generate applications more quickly and affordably with the aid of digital transformation.

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