

## **AUTOMATING FINANCIAL REPORTS FOR CREDIT UNIONS**

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### **Abstract**

*Automated financial reports are essential for credit unions to improve the quality, productivity, and timeliness of financial reporting. For credit unions, many of which were previously operating on manual or semi-automated systems, these problems include human mistakes, data staleness, and time-consuming processes that slow down decision-making and hinder compliance. This paper selects Genisys Credit Union to investigate how automation has turned financial reporting on its head. An automated reporting system of Genisys Credit Union is integrated with the front-end development of Angular and the back-end processing of Go. It helped in bolstering report generation and granting real-time access to the data which otherwise had errors and operational hindrances that came into the pathway of accomplishing the regular businesses of Enhance PT. Leverage points for automation are outlined in a scenario that includes time efficiency, accuracy, compliance, and capacity. It also encouraged stakeholders to obtain timely and accurate information on the financial status needed for improved decision-making and compliance with the regulations. In addition, the analysis looks at potential developments in the automation of financial reporting processes in the coming years, including artificial intelligence and machine learning, together with blockchain and cloud-based solutions. These innovations are another step in the development of methods for improving reporting, which will allow credit unions to remain effective in a constantly changing financial environment. Self-service approaches are suggested for credit unions to strive to implement in order to increase automation. By using sophisticated tools, they can optimize performance, demonstrate reliability to shareholders, and prepare for future development in an uncertain financial context.*

**Keywords;** *Automation, Financial Reports, Credit Unions, Efficiency, Accuracy, Real-time Data, Cost Savings, Integration.*

### **1. Introduction**

Reporting is an essential function for credit unions since it provides the financial information that is needed for decision-making and planning. This report, therefore, gives credit union managers, board members, and regulators the ability to make key decisions such as future investment and policy about the status of the credit union, recognize any problems likely to occur, and check compliance with legalities and requirements, respectively. Such reports may include balance sheets, income statements, and cash flow statements, among other reports, which are very useful in understanding the financial health of the organization. Given that credit unions are governed by a different set of principles to traditional financial institutions and often have a somewhat limited field of activity in terms of the number of members, such reports are invaluable for these organizations. These enable credit unions to balance their financial books, establish goodwill with the members, and come up with long-term strategies for growth.

In this respect, details are vital, and consequently, accuracy and, more importantly, time is of enormous importance. Accounting records must have accurate information, both timely and accurate, to form part of the strategic planning process. For instance, wrong data can cause bad lending approaches or failure to grab investment opportunities. Similarly, delays in generating reports would reduce the organization's ability to make decisions to respond to changes and developments in the market. As a result, credit unions depend mostly on financial reports to make decisions that affect their revenue, members, and

future existence. This means that any deficiencies in the process of reporting may lead to severe outcomes for the business, both internally and when it comes to external reporting and interaction with the supervising authorities.

However, the process of creating these reports has always been a challenge, especially for credit unions that are using manual or semi-automated systems. The historical approach in financial reporting is comprised of manual collection of data from various sources, entering the data into computer spreadsheets, making the data presentable, and then disseminating the information to all the users. This process certainly takes much time and is very likely to involve mistakes being made. All this leads to errors in data entry, formula errors, and problems related to data consistency, which act as a major drawback in the reports. Furthermore, they can be exceptionally costly, including miscalculations on the financial outlook or communication with the regulators that may harm the credit union's reputation and credit.

Delays in time are equally cumbersome, considering that they hinder the implementation of measures aimed at preventing health complications. A particular disadvantage of a manual reporting system is that it can take days or even weeks to produce a report, which is unideal for active businesses. Managers and directors of credit unions, as well as credit union industry regulators, need these reports to aid in their decision-making processes in the relevant times. As time ensues, the data becomes less useful or more irrelevant depending on the sort of decisions that were made with it. Moreover, it creates ineffective reporting, which cause misuse of resources since employees can spend much time preparing the reports rather than doing more important work. Consequently, there has been a growing pressure to automate the process of financial reporting due to the problems that have been associated with the method; this has been an added advantage in terms of handling more errors, effectiveness in the delivery of the reports, and efficiency.

Automated communication refers to the utilization of applications or technology in the production of financial reports and their subsequent preparation and delivery in a more or less fully automated manner. By capturing the data automatically from all systems, aligning it with an appropriate format of the requirement, and setting the timing to generate the reports, credit unions can ensure the reports produced are correct and delivered within the right time. Most of the time, the actual operation involves manual data inputting, which entails keying in large quantities of data that have a high tendency for mistakes and which takes a lot of time for staff; automation removes most of these lengthy and error-prone steps. A real-life example of positive automation implementation is a case that took place at the Genisys Credit Union, where the move towards a computerized reporting system worked wonders in enhancing efficiency and accuracy in the production of financial reports. Angular and Go technologies helped Genisys Credit Union to automate the preparation and delivery of reports, thus minimizing the influences of human errors and providing necessary information to the stakeholders faster. This case study drives home the effectiveness of automating financial reporting, showing its potential to make more accurate work less strenuous and overall organizational speedier.

This article will further elaborate on some of the essential elements of credit unions, including the problems associated with traditional approaches to financial reporting, the impact of automation on those approaches, and the advantages that come from such automation.

## **2. The Problems Faced by Credit Unions in Financial Reporting**

As with many organizations in the global financial landscape, credit unions experience a number of issues affecting their ability to produce effective financial reports. Concerns resulting from manual work, human input, and archaic systems cause major problems and hamper the organization's success.



Figure 1: Challenges Facing Credit Unions

### 2.1 Manual Processes and Time Consumption

Manual processing is one of the most common problems currently faced by credit unions in the field of financial reporting. These processes can take a long time and often are ineffective. Credit unions frequently use Cobol-based back-end systems to enter, organize, and format financial data with the help of spreadsheets or even paper (Tarafdar & Vaidya, 2007). This approach involves keying in data from other departments and is therefore time-consuming, demanding much input from the manual labor of the workers. In some cases, it can take a couple of hours or even days to calculate required figures and arrange them into coherent reports, particularly when a credit union is large and effectively develops the tools.

Additionally, all the required reports are generated manually, which entails a number of time-consuming processes like copying data, making some formula changes, or even cross-checking information from different sources. It is also critical to note that these tasks not only slow the reporting process but also interrupt crucial activities. For instance, let us consider that a credit union has to prepare monthly financial statements and any reports of the end years. This work can be slowed down due to many requirements concerning data entry and formatting. This ends up making the production of each report take longer, thus impeding decision-making processes and the ability of the organization to be quick in responding to changes in financial trends and the market.

### 2.2 Human Errors in Financial Reporting

The third common problem credit unions face when preparing manual financial reports is that they can be riddled with human error. Certainly, the numbers that financial reports contain perform tasks, and, as such, they ought to be highly accurate. However, whenever data is entered by hand, there is always the possibility for error, whether it be clerical, such as typing the wrong number, mathematical errors, or perhaps even misinterpretation of the data being input. Small errors in data entry or calculations can cause noticeable differences in the final report, thus affecting the accuracy of the results.

This shows some of the impacts of human error in the preparation of financial report results. When the financial statements are incorrect, the users of the statements, including the boards, regulatory authorities, and investors, will make wrong decisions. For instance, an inaccurate balance sheet or income statement can lead to a wrong estimation of a credit union's financial position, thus leading to wrong investment placement, wrong resource channeling, or failure to meet legal requirements. Additionally, those arising from human factors misrepresentation may cause some credit union stakeholders' distaste and lack of trust in the credit union (Frankel, 2005). Analysts, more especially the regulatory authorities,

demand considerable and exacting accuracy when compiling financial records; thus, any deviation or inaccuracy is likely to attract audits, legal aggression, or charges. Stakeholders are fundamental to building sustainable relationships, and any uncertainty with reports that credit unions prepare and submit would compromise the company's reputation (Brockett & Rezaee, 2012).

### 2.3 Lack of Real-Time Data

The other difficulty creditors' mutual organizations encounter in their financial reporting is inadequate real-time data. In a manual reporting system, data is generally collected from various sources and updated at a fixed interval of time; therefore, the report prepared on the basis of that data may contain irrelevant information at the time it is generated. This delay in updating the data creates a problem for every decision-maker because current financial data is crucial in providing timely decisions. For instance, when a credit union management is considering whether to fund new loans or investments, they are probably working with financial statements that are a few days or even weeks old (Caouette et al., 2011). This could lead to decision-making based on prejudiced assumptions or conditions that are quite far from the current financial realities. In contrast, real-time data enables decision-makers to have an updated presentation of the firm's finances, meaning that any decision made can only be informed by real-time data. The absence of real-time data, therefore, means that credit unions are not able to respond to changes as and when these occur in dynamic financial conditions.

This issue is rather critical, especially where credit unions need accurate reports to fulfill a regulatory need within the required time. Information that is not updated as may be required may lead to delayed compliance reporting and, as a result, penalties or fines. Automated and integrated systems that afford real-time data access could reduce this problem by updating the compiled reports to show the credit union's latest financial position.



Figure 2: Main technological answers to real-time reporting

### 2.4 High Costs and Resource Allocation

Last but not least, the preparation of financial reports manually as a consequence of high costs for credit unions. As a consequence, the time and effort needed to prepare reports using the traditional approach yield considerable costs (Kaplan & Cooper, 1998). These resources have to be devoted to employees charged with data collection, data input into reports, and the conversion of the results to suitable formats. The time that is needed to achieve these objectives can be spent in other ways: on customer support, loan origination, or development of financial business strategies.

Apart from the labor cost implications, the manual reporting system has other inefficiencies that escalate operational costs. For instance, time spent making corrective entries, preparing data from various

departments in-house, and circulating such reports add to overhead time (Farid et al., 2014). Such inefficiencies may even be more impactful for credit unions that are smaller in size and unlikely to invest much in cumbersome reporting. The hefty measures associated with manual reporting also include the likelihood of late or erroneous reports. Should a report be prepared and submitted late or contain erroneous information, the credit union may have to expend more resources on fixing the problem, conducting an investigation, or auditing. Such costs are additional expenses for the use of manual reporting systems to be financed by the organizations.

The problems related to manual financial reporting are huge, from time management to labor costs, from the risk of errors to the use of obsolete data. Credit unions have to resolve these issues to sustain themselves in the market and produce reliable financial reports (Financial Crisis Inquiry Commission, 2011). Automation is a perfect solution to these problems since it helps to eliminate human interference, increase efficiency, and enable real-time information, all of which are vital to credit unions.

**Table 1: Challenges of Manual Financial Reporting and Benefits of Automation for Credit Unions**

<b>Challenge</b>	<b>Description</b>	<b>Benefit of Automation</b>
<b>High Labor Costs</b>	Employees spend significant time on data collection, input, and report formatting.	Reduces labor-intensive tasks, freeing up employees for strategic initiatives like customer support.
<b>Inefficiency in Time Management</b>	Manual processes like corrective entries and interdepartmental data preparation consume excessive time.	Streamlines processes, enabling faster report generation and improving operational efficiency.
<b>Risk of Errors</b>	Human errors in data entry or formatting can lead to inaccuracies and require costly corrections or investigations.	Minimizes errors through automated checks and balances, ensuring higher accuracy in financial reporting.
<b>Late Submissions</b>	Manual preparation often leads to delays, causing late submissions of reports and potential penalties.	Ensures timely reporting through real-time updates and automated workflows.
<b>Obsolete Data Usage</b>	Manual systems may fail to capture the most current data, leading to outdated and unreliable financial reports.	Provides real-time data integration, ensuring up-to-date and reliable reporting.
<b>Resource Drain</b>	Time and financial resources are spent on inefficient processes instead of strategic goals.	Frees up resources for customer service, loan origination, and business strategy development.

### **3. The Solution: Automating Financial Reporting**

#### **3.1 Why Automation is the Key to Solving These Problems**

Applying automation to financial reporting meets several critical issues that credit unions encounter: time consumption, the possibility of errors, and delays in decision-making. It will also reduce the large burden of work for the credit unions that would otherwise be involved in data gathering, preparing, and dissemination in the form of the report in question. Through automation, the reports can be generated and delivered at the same time, and the latest information is given to the stakeholders (Lacity & Willcocks,



2016). This leads to enhanced efficiency in decision-making since some executives and key staff no longer have to rely on conventional reports that have to be prepared and presented traditionally.

Other benefits associated with automation include the ability to produce accurate and timely financial reports. It is extremely vulnerable to human error, which, if introduced, will result in the presentation of wrong or faulty data on the financial statements. Integrated systems allow data to be extracted directly from financial systems, hence minimizing errors emanating from data entry mistakes or flawed calculations (García et al., 2015). In addition, automated systems also have control features that validate whether the entered data is accurate before the report generation. The final benefit concerns the improvement of trust and reliability of financial reporting, which is critical in making internal decisions and for meeting the essential requirements of regulation. Real-time data availability is another advantage that accrues to its automation. The provision of financial reports at the request of those concerned saves time and debt, which might put on hold important decisions that require up-to-date financial information (Berman & Knight, 2013). This real-time capability makes it possible for credit unions to quickly change directions as they need to and adapt to market changes, make financial decisions, and enhance the services they provide to members.



Figure 3: IoT connected with various devices.

### 3.2 How Automation Improves Reporting Efficiency

Automation of financial reporting reduces the operating cost of credit unions when compared to the manual operation of the same process. An automated system simplifies all reporting activities from data acquisition and analysis to report production and dissemination (Tsafnat et al., 2014). This cuts down human time spent by the employees, who are then able to handle more complicated problems that involve more than solving routine tasks. Employees do not waste time searching various sources to gather the necessary materials. Instead, they can use a set of properly prepared and repeated reports that adequately reflect organizational requirements without any interference.

Furthermore, it is also notable that automation speeds up each phase of the reporting process. From an effective area that would have cost several days or even weeks to prepare reports, it only takes minutes to come up with one (Husereau et al., 2013). This saving of time not only boosts efficiency but also offers cues in a credit union's competitiveness through fast, intelligent decision-making. They can provide prompt responses to the analyzed financial data and react to challenges and opportunities without any hesitation.



Figure 4: Business process automation - finance and accounting

### 3.3 Technologies Involved in Automating Financial Reports

Several technologies can be implemented as the means for automating financial reporting in credit unions, and all of them are essential in developing a comprehensive solution.

- **Angular for User Interface:** Angular is an extensive front-end web application development platform that helps construct flexible and user-friendly dashboards for credit union stakeholders (Mayekar et al., 2017). This way, Angular becomes an excellent tool that can let developers develop interfaces that would respond to user interactions, making it easy to retrieve financial reports. Potential uses of these dashboards include presenting balance sheets, income statements, and cash flow reports in summarized and attractive forms. It is this kind of filter or chart or other drill-down feature wherein the users get empowered to get insights into the data in a very efficient manner. Another advantage of using angular is that it is flexible, and credit unions can bend it to fit the needs of the particular organizational structure (Svahn, 2014).
- **Go for Backend Development:** Go (or Golang) is becoming the language of choice for backend development as it offers high performance, is highly scalable, and offers excellent concurrency. When it comes to financial reports, Go is advantageous when it comes to the aspects of server-side computing and when processing huge amounts of data (Liu et al., 2016). This gives developers a chance to write high-performance code that can yield the requirements of data processing in financial reporting systems. Go's strong concurrent programming makes it possible to develop several concurrent processes like fetching data, generating reports, and distributing such reports concurrently without any hindrances to the system. This parallel processing capability is mandatory for addressing the high real-time requirements of financial reporting.
- **Scheduled Report Generation and Distribution:** Another positive attribute of automated financial reporting is the extent to which the generation and distribution of financial reports can be set on an agenda. By adopting schedule tools and incorporating APIs, credit unions can allow report generation at fixed times, which may be daily, weekly, monthly, or quarterly (Gitata, 2017). This ensures that reports are produced and submitted on a regular basis without having to employ someone to do it manually. These reports can also be disseminated through outward mailing or through secure electronic means via email or file transfers to the needed dashboard. Credit unions benefit in terms of time and money in terms of dealing with manual scheduling and distribution of reports, which are made readily available to the stakeholders at the time they require them.

### 3.4 Integration with Existing Systems

Effective automation presupposes credit union integration of the new system into its already existing financial systems. Such systems can consist of standard software programs, such as accounting software, for the purpose of effective and efficient data storage, customer relationship management (CRM) for an overall run of business, and related data for the overall preparation of financial statements. Such automation tools are developed to interface with such systems and retrieve real-time information for use in preparing up-to-date financial statements (Trigo et al., 2014).

One of the most significant difficulties is that automation has to be integrated with old or proprietary systems. However, current automation platforms are designed with integration in mind, utilizing application program interfaces and middleware to fill the data integration gap. By using tools to automate the creation of reports that can work with the necessary data on various platforms, credit unions reduce the chances of inconsistency, which is always present at the time of manual data transfer (Rahim et al., 2017). However, most automated systems benefit from real-time data synchronization. Most of the time, when there are links between the different financial systems, then there are automated updates, and the reports that come out are the most updated ones. This integration makes it possible to reduce problems associated with reporting lag to make the credit unions capable of working in a high-velocity environment, which mainly relies on data. Another benefit of integrated systems is that they eliminate the need to input the same data multiple times, which enhances both the quality and productivity of organizational processes.

Outsourcing financial reporting is a great advantage for credit unions in that it allows them to reduce the time taken to prepare reports, increases the accuracy of data, provides up-to-date information to management, and improves decision-making. Technologies like Angular, Go, and these credit unions can use scheduling tools to establish efficient, flexible systems that can easily interface with established financial solutions (Chang et al., 2010). The end product is a process with far less manual input, far less room for error, and financial information that is seamlessly available to all the stakeholders with the simplest push of a button.

#### **4. The Genisys Credit Union Case Study**

##### **4.1 Overview of Genisys Credit Union and the Need for Automation**

Genisys Credit Union is a very large credit union in Michigan with access to a vast number of members and excellent services for its members. Being a credit union with multiple outlets and a large population of customers, Genisys had problems with its financial reporting (Müller, 2009). As the volume of transactions increased, stakeholders had higher expectations as to the speed of the financial statements preparation, hence the necessity for an automated system.

The Genisys Credit Union's financial reports were prepared and shared through traditional file-sharing methods. These activities included data mining from different financial systems, manually assembling the extracted data into Excel worksheets, and structuring the reports to present to some departments or individuals. Despite being time-consuming, this method was often wrong and provided outdated information to the credit union, hence slow decision-making regarding finances. These mainly consisted of complex manual procedures that could slow down the pace at which the organization can adapt to market changes or the latest regulatory provisions.

Due to these challenges, Genisys noticed the importance of automating its financial reporting solutions. When implementing automation solutions for the generation of reports, the credit union had another expectation apart from improving the efficiency of the organization, and this was the accuracy with which the reports were being generated. Automation also helps release valuable human capital that can then be deployed to other more sophisticated tasks than the authors' reports.



#### 4.2 Challenges Faced by Genisys Credit Union

In this case, Genisys Credit Union encountered several issues while conducting the financial reporting, which affected the implementation of automation. As a result, one of the biggest problems was that the process of report production was rather long. It used to be that companies produced these reports on a monthly or quarterly basis, and since much of this process had been manual, it used to take days to (compile/collect) all the necessary data to produce these reports. This had the effect of denying big decision-makers real-time information, meaning that they made decisions with the wrong numbers in front of them at the wrong time or failed to respond to new financial conditions as and when they arose.

The last general critical challenge was the fact that the manual reporting process contains a lot of human error potential. Financial reports are sophisticated statements that involve the compilation of a huge number of figures from different places (Wahlen et al., 2011). That is so true, as when these reports were compiled manually, even a little mistake in entering the data or formatting could lead to considerable consequences. Sources of inaccuracies in the financial reports are not only damaging to the internal decision-making processes of the organizations. However, they may even result in compliance problems in organizations that have regulatory hurdles, like credit unions. At Genisys Credit Union, errors experienced earlier on their reports had a way of forcing stakeholders to lose trust or required that some time was spent fixing the issues.

Besides these challenges, Genisys also faced real-life issues, such as the absence of real-time data. It was customary to come up with financial reports at the end of each accounting period during the month, which hindered decision-making since the reports were not up to date. It also constrained the possibilities of management and stakeholders to make timely, accurate decisions. Therefore, the management of Genisys realized that it needed to adopt a faster and less error-prone way of reporting that would also produce financial information on the fly if required.



Figure 5: Robotic Process Automation for Credit Unions

#### 4.3 The Automated Solution Implemented

To overcome these difficulties, Genisys Credit Union implemented an automated solution aimed at securing the efficiency of financial reporting. The solution was built using two main technologies: Angular for a script for the front-end and interface and Go (Golang) for the script and server-side calculation. The integration of these two technologies led to the formation of a reliable, expandable, and easy-to-use automated reporting solution.

Angular was chosen due to the versatility of the tool utilized for constructing interactive, single-page web applications. The credit union needed an interface that would be friendly to work with for internal

employees and, at the same time, capable of displaying comprehensive financial information (Medhi et al., 2011). Angular lets developers create a unique dashboard that gathers info from the back-end system and shows it to management in real time and other reports. The interactivity of real-time visuals gave Genisys the correct means to measure financial performance when needed.

From the backend, Go was used because it is fast, efficient, and supports concurrent requests. Scalability is a big factor in a financial institution of Genisys's size because Go could perform and produce a great deal of data much faster than the manual system. Thus, for example, server-side logic performed a real-time extraction of data from Genisys's financial databases, followed by calculations and report formatting. It was through the performance of Go that the overall performance of the system was made to sustain the simultaneous generation of more than two reports as planned.

One of the important tools in the provided automated solution was scheduled report generation. The most efficient feature incorporated in the current system was associated with the scheduling of the creation of financial reports, which could be done on a monthly, quarterly, or annual basis. This kind of scheduling capacity made it possible to develop reports consecutively on time and with less recourse to manual work. Each report was then automatically formatted and verified for the correctness of the statistical data entered and sent to a particular customer if sent through email or loaded on the internal website dashboard. The integration of automatic scheduled report generation freed up the time that would otherwise have been spent manually preparing reports and reduced the margin of error as well (Huang et al., 2015). Since the process of consolidating and preparing its financial statements was fully automated, Genisys guaranteed that they were always ready and that the deliveries were timely.

#### **4.4 Outcome and Results**

After implementing the automated reporting solution, Genisys Credit Union had numerous important benefits in the efficiency and reliability of a financial reporting system. The most obvious advantage that was observed is the minimization of time spent on report generation. Previously, it had often taken days, if not weeks, to generate the required data, prepare these reports, and then disseminate them. Using the automated system, reports were produced instantly, and the desirable data were immediately provided to the key interested parties (Van Renesse et al., 2003). The reader will recall that the time taken to produce various reports has been minimized through the implementation of Genisys's IT innovations. This was important to Genisys's management team in making decisions much faster, partly in response to changing market conditions or even changes in business strategy.

It was also found that the financial reports were more accurate in the period under test. This reduced the number of errors that humans made while compiling the data into the reports. Consequently, stakeholders could rely more on the financial reports to enhance their overall confidence in financial decisions. For example, there was a significant reduction in mistakes that initially had to be remedied, such as in data entry. Hence, the credit union's main focus was on more crucial decision-making processes (Trianni et al., 2016). Besides time and accuracy, the decision-making aspect was greatly enhanced as Genisys was experiencing. Holding timely financial reports means that the managers and stakeholders would be in a position to evaluate the financial performance of credit unions at any given time. Hence, enhancing decision-making included the right time to change the lending policies, investment strategies, and risk management practices, among others. Besides, the automation of the financial reporting helped to internalize the operations of Genisys but also assisted the firm in responding to the dynamics of the business environment, such as alterations in laws or market forces.

Other quantitative measures with respect to time and cost were equally phenomenal. Here, monthly reports production time was cut to less than 70%, while the incidence of errors respectively declined nearly to 'nil.' (Chou et al., 2001). What started with Genisys was that all the time that can be saved and all the

money that can be conserved would be more effectively used in areas that are considered value-added, such as financial analysis. In addition, other stakeholders, the overall managing officers and board of directors, in particular, benefited from improved and faster access to information they required for critical strategic actions and responses. The paper demonstrated that the implementation of financial reporting automation at the Genisys Credit Union offered overall value for the investment made. The credit union's efficiency was raised, the quality and credibility of reports were increased, and decision-making capacity was improved. In this way, Genisys' new system allowed the company to outrun numerous competitors by introducing changes, which is rather a strong and sustainable business model in the sphere of intense financial competition.

**Table 2: Key Outcomes and Benefits of Automated Financial Reporting at Genisys Credit Union**

<b>Outcome</b>	<b>Description</b>	<b>Benefit</b>
<b>Time Savings</b>	Automated reporting reduced report generation time by over 70%.	Enabled faster access to critical data, supporting swift decision-making and operational agility.
<b>Improved Accuracy</b>	Significant reduction in human errors, particularly in data entry and compilation.	Enhanced reliability and credibility of financial reports, boosting stakeholder confidence.
<b>Enhanced Decision-Making</b>	Real-time availability of financial reports allowed managers to evaluate performance and respond to changes promptly.	Supported timely adjustments in lending policies, investment strategies, and risk management practices.
<b>Cost Efficiency</b>	Resources previously spent on manual reporting were reallocated to value-added activities like financial analysis.	Improved resource allocation and operational efficiency, reducing overall costs.
<b>Stakeholder Access</b>	Board members and executives gained faster and improved access to essential financial data.	Facilitated informed strategic decisions and improved organizational responsiveness to market dynamics.
<b>Business Agility</b>	Automation enabled Genisys to adapt quickly to legal, regulatory, and market changes.	Positioned Genisys as a leader in innovation, enhancing competitiveness in a dynamic financial market.

### **5. Benefits of Automating Financial Reports for Credit Unions**

As a strategic and critical best practice, credit unions have shifted their focus towards the automation of financial reporting to support operational efficiency, accuracy, and timely presentation of relevant information to stakeholders. Through the management of automated means, credit unions are capable of reducing their cycles and fixing imperative regular reporting difficulties like delayed timeframe, human errors, and inadequate resources. It is desirable to consider that the application of the automation approach addresses multiple directions, with special attention to time, quality, security, scalability, and cost.

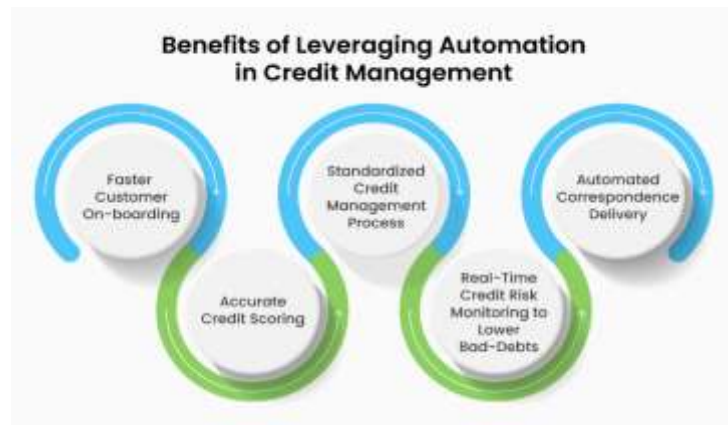


Figure 6: Benefits of Automation in Credit Risk Management

### 5.1 Time Savings and Faster Decision-Making

The most obvious benefit of automating financial reports is time savings, as most routine processes are dispensed with. In traditional reporting systems, credit union staff has to enter, analyze the data, and convert it to a format that is easily understandable and easily accessible, a process that often consumes much time and is very vulnerable to nature. Automation reduces the time required to perform such work through the use of Apr 2016 defined programs and automated algorithms that analyze data (Olson et al., 2016).

It is possible to have the financial reports prepared in real-time or on demand, which makes it possible for the users of such information to have access to the latest figures. This does away with the use of waiting for data entry or facilitates the preparation of reports that may sometimes take up to days. Therefore, the above users, like credit union managers, executives, board members, and others, have enhanced the ability to make proper decisions more promptly using updated information concerning their financial position. When it comes to loan decisions, changing interest rates, or any other decision of resource allocation, faster decision-making typically provides increased operational flexibility and responsiveness, which are very important in the financial sector.

### 5.2 Increased Accuracy and Reduced Errors

Financial reports are formal documents that should be very accurate, particularly when they are made to meet legal requirements or be used in decision-making. Most manually compiled reports contain avoidable errors due to various mistakes in data entry, calculations, or presentation format. Such mistakes can mess up the quality of financial data and, in some cases, violate compliance rules or lead to unprofitable business decisions.

Automation makes minimizing errors in measuring and monitoring possible to a very large extent (Parasuraman et al., 1993). The production of reports is precisely streamlined once an automated system has been established. Automation minimizes data input since the data is replicated directly into the system and even offers a means of verifying data that is fed into the system for processing. This is much less room for error when data is extracted from financial systems and databases, which make these reports accurate. Such accuracy is useful not only for improving decision-making but also for meeting industry and regulatory standards and policies. Furthermore, automated systems can alert report writers to any inconsistency or abnormal activities, reducing the chances of missing errors. Such proactive monitoring is very relevant in today's heavily monitored financial industry, where simple errors can cost a lot of money in penalties.

### **5.3 Enhanced Data Security and Compliance**

Security issues are of paramount importance for credit unions because financial data is always regarded as privileged information. Online, conventional procedures for reporting are often conducted through unsecured email or physical transfer of documents, which can put financial information at high risk for theft, misplacement, or hacking. Such issues are well taken care of through automation since the system has stringent data security measures and follows the regulations that are laid down. This means that such automated arrangements of financial reporting are equipped with outstanding encryption, proper data storage, and customer control. These features ensure that any sensitive financial information is protected at each step of the reporting and during distribution. Controlling also becomes easier, as do access logs and audit trails, which are indispensable for monitoring cases of data access or modification by certain users.

Apart from security, compliance is another immense advantage of automating financial reports. CU's are under regulatory laws such as NCUA and GAAP. Reporting can also be automated so that reports produced present information in forms that are compliant with the regulations. It also has the capability of integrated change to address new regulations relative to law or finance, meaning that the report can be modified to reflect changes in law or finance. This means credit unions stay in compliance without additional monitoring work, which cuts down on the paperwork involved.

### **5.4 Scalability and Flexibility**

With the expansion of credit unions, the complexity of reporting expands as well. A manual reporting system often implies an increase in demand with the growth of membership, assets, and services, which overloads resources and increases inefficiency. Automated reporting systems, on the other hand, have several advantages in scalability; hence, credit unions can expand the reporting system as the credit union grows.

Scalability is the feature of the system that requires increasing the amount of information and developing a relatively more complex report as the credit union business expands. It would, therefore, be of great leverage if a credit union is extending credit products and services across to other geographical locations, increasing its membership, or developing new products and services. An automated reporting system can expand with new volumes without necessarily restructuring an entire framework. Furthermore, automation flexibility enables credit unions to design certain reports depending on needs or stakeholders. Reports can be prepared in credit union templates and modified to show particular financial performance or another measurement that the credit union wishes to convey to its boards of directors, auditors, or regulators (Kkwafkwao, 2015). Such an environment would retain adaptability, and the credit union can amend the reporting parameters essential for a business without interfering with the program's functioning.

### **5.5 Cost Savings**

The advanced automation of financial reports can greatly decrease the operational cost of credit unions in regard to the labor and consumption of resources. Typically, within conventional reporting approaches, the staff are required to spend a lot of time and energy in data gathering, reporting, and report dissemination. This kind of effort is very labor intensive and, thereby, can be costly and has low returns if it entails many human hours in repetitive or low value-added work. They do not require the direct services of many people since the automation process is almost a blanket for all procedural tasks leading to a specific report. It not only ensures that staff are able to do more of the higher-level activities but also works toward cutting expenses from labor. The systems' operational expenses may also be lower than those of manually controlled systems because they require relatively little maintenance.

The other location where efficiencies or, in this instance, cost savings are implemented through minimized mistakes. As mentioned earlier, manual operations are prone to errors, which may result in loss



of hefty amounts of money in penalties. The deleterious financial consequences for credit unions mean avoiding human error can prevent these penalties or associated costs in corrections. In addition to keeping stakeholders informed with timely reports, the accurate automated systems also avoid some complications that users typically encounter, such as reports having to be prepared again for different purposes and after additional information has come in.

Automation can also greatly reduce credit unions' overhead expenses since the use of physical paper or files will not be extensive. Automated reports gain due to the features of digital storage, access, and transfer of documents, thereby saving much money that would have been spent on paper and physical files. Automation of financial reporting has numerous advantages for credit unions, including efficiency, accuracy, security, and cost reduction (Bergeron, 2004). By implementing such automated solutions, credit unions can increase their speed and productivity and guarantee compliance with industry regulations while making better decisions and adapting their systems to future requirements. Therefore, automatizing the generation of financial reports will always be among the strategies that will help credit unions to be more efficient in coping with the dynamics of the financial services industry.

## 6. The Technical Implementation of Report Automation

The preparation of the financial reports for credit unions such as Genisys Credit Union in the current digital environment necessitates an effective system architecture that would guarantee the credibility of the data as well as its speed. This part of the research provides a brief description of the technical aspects of the implementation of the automated reporting solution adopted by the organization, including system design, time-based reporting, report delivery, system validation, and improvement.

Table 3: **Technical Aspects of Implementing Automated Financial Reporting Systems**

Technical Aspect	Description	Benefit
<b>System Design</b>	Development of a robust architecture integrating core financial systems, databases, and reporting tools.	Ensures seamless data flow, efficient processing, and reliable report generation.
<b>Time-Based Reporting</b>	Implementation of scheduled reporting features to generate reports at predefined intervals or in real time.	Provides timely access to financial data, supporting proactive decision-making.
<b>Report Delivery</b>	Integration of automated delivery mechanisms, such as email notifications or dashboard access for stakeholders.	Ensures key stakeholders receive accurate and timely information for strategic planning.
<b>System Validation</b>	Establishment of validation processes to verify data integrity and accuracy during report generation.	Enhances trust in the financial reports by minimizing errors and ensuring compliance with reporting standards.
<b>Continuous Improvement</b>	Regular updates and optimization of the system based on feedback, technological advancements, and business needs.	Maintains system relevance, adaptability to regulatory changes, and alignment with organizational goals.

### 6.1 System Architecture Overview

The component structure of the automated reporting solution provides a high capacity for dealing with the volumes of financial data and establishing favorable conditions of its scalability, speed, and flexible amendment. Based on the analysis of the components of the credit union's system, it is possible to identify the main elements that will be implemented: a graphical user interface based on the Angular framework, a server in Go (Golang), and data storage. The merging of these constituents creates the framework of the automated reporting solution. Angular is applied to develop the front end of the application to offer credit union stakeholders a convenient dashboard to interact with it. This capability facilitates monitoring of report generation and also affords users the opportunity to see reports once these are produced. Angular's components have allowed for full and modular ownership of the dashboard, which in turn presents a highly reusable structure with the capability of being updated and expanded. Angular's strong app environment provides data binding and compatibility with RESTful APIs required to retrieve data from the back-end server (Soni, 2017).

The back-end is written in Go, which is a statically typed, compiled language that has demonstrated high performance and scalability. Adding to the above advantage, Go is simple and comes with concurrency; hence, it is suitable for building server-side logic that would enable automated financial reporting. The back-end, which is developed in Go, deals with the process of calculations connected with data analysis, the preparation of reports, and the management of task scheduling. This one communicates with the database to read financial information and works this information to generate neat reports. Go comes with goroutines that make the system work in parallel; for instance, in processing reports at once, efficiency is ensured. There is also an RDBMS database in the system that will store all the financial data it collects and process effectively (Trofimov et al., 2016). It works in parallel with the front end and back end so that data can be easily retrieved and fed to the report engine. The use of RESTful APIs where Angular and Go are involved guarantees the front-end interoperability with the back-end, meaning users can initiate report generation, check the status, and view the results of the report.

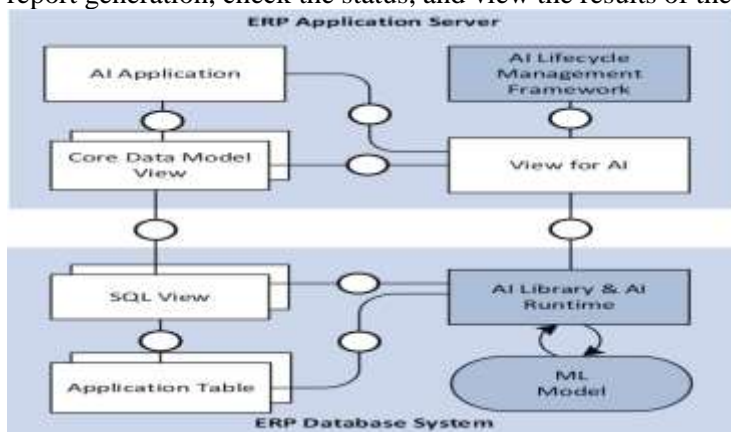


Figure 7: Solution Architecture

## 6.2 Scheduled Report Generation Process

The other advantage of the automated reporting system is that the system is capable of producing the report at a designated time. This is done by using the scheduling tools, including the Cron jobs, or using Go's native time packages. These tools enable the credit union to prepare reports on a daily, weekly, or monthly basis, depending on the needs of the credit union. In this case, one gets to plan the report-generating processes to happen in certain instances and thereby reduce the chances of manual errors.

The steps in producing the report begin with extracting the financial data from the database. Go-based scripts access a database for the most current transactional information, account balances, income, and expense statements, among other financial indicators. Afterward, the data is sorted based on templates that provide the different structures and formats of the reports to be generated. These templates include things like the total amount of assets, total liabilities, profit margins, and other financial returns that ought to be featured in the report. Data formatting remains one of the most essential activities when considering the automation of a system (Debreceeny & Gray, 2001). To formulate the information into a readable structure, the system takes advantage of libraries in Go. This involves preparing the table, chart, and graph that will assist in presenting the financial data. For instance, gopdf or xlsx Go libraries can be used to create a PDF or Excel file that is perfect for direct distribution. These reports are then saved in the system in a temporary folder ready for forwarding or downloading.

### **6.3 Report Distribution Mechanism**

This is a process in the automation system since the distribution mechanism has to ensure that the reports get into the right hands at the right time and in a secure manner. After this, the reports have to be automatically sent out to different stakeholders, including financial officers, board of directors, department managers, and directors. The automatic system of delivering reports includes email services and dashboard integration.

Emailing is achieved through the Go programming language, which comes equipped with libraries such as net/SMTP that enable the system to send network mail with attachments. These single emails contain the above-generated financial reports in either PDF or Excel format so that the stakeholders receive current information right in their mailboxes. These reports are often delivered on a regular basis, like at the end of a month or the end of a quarter, depending on the credit union reports required.

Besides means of distribution through email, it is also possible that the system has a web interface in the form of a dashboard where certain reports can be accessed by specified personnel. This enables the user to download the most recent report or view the report in an augmented manner. The front-end dashboard is also linked to the back-end API to show the user the current real-time updates on the status of the reports generated and distributed (Kumar & Belwal, 2017). The ability to manage user roles and permissions is also available in the dashboard, and authorized users are not allowed to access financial information. Users receive a notification if a report is ready for access via the system without needing direct human intervention. Such notifications can be in the form of an email or using an in-app notification system to ensure users have instant data relating to their financial position.

### **6.4 Testing and Optimization**

Verification and tuning are the critical phases of perfecting the system to guarantee that the credit union receives a maximally convenient and efficient automated reporting solution. The system is subjected to various tests, including unit testing, integration testing, and performance tests. It is a solid way of checking specific units of the system and verifying the functionality of each component. For instance, tests are created to ensure that the database is accessed appropriately, that reports are returned as per the template designed, and that the distribution mechanism works efficiently. Go's standard library also has options for script and unit testing, primarily to help find problems during the development phase.

Integration testing checks the appropriateness of integration to coordinate all the facets of the product as a single product. This included checking how the front end communicates with the back end, how the database fits into the equation, and how the various scheduling tools work. For instance, the system has to be tested to check whether some of the reports are produced at the right time and whether or not the stakeholders receive them on time (Perrini & Tencati, 2006). Improving the performance of the activity is

very vital to achieving the desired performance of the system in accommodating large amounts of data and other simultaneous activities such as report generation. Cache, balancing of loads, and optimal query database are also used to ensure that the system can work effectively on the heaviest traffic. Furthermore, the Go-based back-end is concurrent-safe, which means that report-generating processes are efficient and do not interfere with other system processes.

Each aspect of the automated reporting system for credit unions consists of the front-end development using Angular, the back-end server-side programming using Go, and lastly, the scheduling and reporting distribution techniques that are required for efficient operation. By conducting a series of tests and fine-tuning the system, it is ensured that the system fulfills the requirement of high-stress financial reporting and is as accurate and precise as necessary.

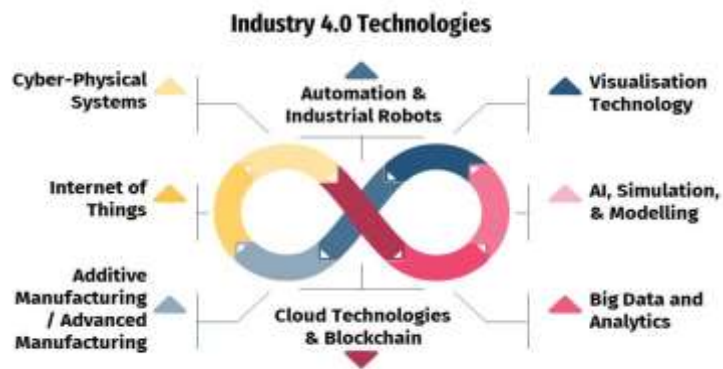


Figure 8: Industry 4.0 for energy productivity

## 7. Challenges and Solutions in Automating Financial Reports

The automation of financial reporting is now deemed as one of the essential steps of improving the organizational efficiency of credit unions and financial institutions. However, using such systems within the context of legacy systems, data quality, data consistency, and user acceptance present significant difficulties.

### 7.1 Technical Challenges in Integration

A challenge that is most likely to slow down the automation of financial reports is compatibility with existing systems. Cred is to know that many credit unions and financial institutions use legacy software applications that do not integrate with automation systems. Smith and Johnson (2016) have stated that the implementation of innovative solutions disrupting the integration of new technologies into existing systems results in data incompatibility, increased time to produce reports, and system malfunctions. These integration challenges occur due to older incompatibility interfaces or API calls that may not allow the integration of fresh automation tools.

To overcome these integration challenges, the financial institution has adopted middleware solutions that help to translate the information from old mainframe systems and the new fully automated systems. According to Lee and Kim (2015), middleware can help in the conversion of data into compatible formats for automated report generation. Further, implementation strategies have been accomplished in phases and have been quite successful. The overall goal is to reduce the risk of disruption that automation poses, as well as allow the IT departments within organizations to prevent or solve problems as they implement each step.

## 7.2 Data Quality and Consistency

One aspect of the automation of financial reports is cohesion, which describes the issue of data accuracy in the domain. Unreliable or incompatible data will significantly harm the credibility of automated reports and may result in wrong decisions and problems with the authorities. Kumar and Singh (2014) observed that data conflicts result from differences in data structures, missing values, and keystroke mistakes. When elaborating on an AOS without proper data validation procedures, the overall quality of the reports produced by an AOS may be highly undesirable from an organizational and operational risk perspective.

To manage these issues, most credit unions have adopted strict data governance measures over the years. According to Sharma et al. (2017), there is a need for clear rules on data validation and auditing schedules in order to arrive at accurate data. There are mechanisms of checking validity, for instance, checking data with other sources and using validity checks during the data entry process, which minimize the possibility of error. Besides, ensuring you implement durable data management platforms that have efficient synchronization capability that works in real-time across different systems is essential in matching them. These platforms, on their own, can discover errors and thus confirm that the financial data used in reporting is accurate.

Data quality, consistency, and timeliness issues



Figure 9: Data Quality, Consistency, And Compliance

## 7.3 User Adoption and Training

In automated financial reporting systems, it is also necessary to take into consideration the fact that their successful execution presupposes more than the application of technological tools. Employees and stakeholders are also likely to resist change and, therefore, slow the development and adoption of new reporting systems. Gupta and Patel (2016) pointed out that the perceived threat of job loss, lack of technical skills, and inadequate knowledge of automation processes may deter users from engaging optimally with the new system. Considering that in credit unions, many staff members may not be conversant with modern technologies, making the transition seamless assumes much importance.

It is important now to understate that exhaustive training programs are mandatory in order to ensure the users' acceptance. These programs should create awareness that operational automation offers important enhancements to the user's daily operations. As pointed out by Brown and Green, user training should be recurrent. It should involve skills in live exercise in order to increase confidence in the specific application of automated systems. Furthermore, making technical assistance available on a regular basis and urging people to give their feedback also helps establish an identity of ownership and relieves the concern that users may have regarding new technologies. Additionally, it is easier to get the support of the users when they are involved in the planning for the automation system.



Despite the challenges that are inherent in automating financial reporting in credit unions, some solutions address key issues impacting this area of implementation, including integration with old-generation systems, data quality assurance, and user acceptance. In addition to value-added features and functionalities, low redundancy, middleware integration, and sound data validation procedures, as well as sound staff training and development, are critical essentialities for effective automation. It is only clear that in its future evolution, credit unions and similar organizations can benefit from embracing automation if these challenges are well addressed.

## 8. Future Trends in Financial Reporting Automation for Credit Unions

It isotypes that credit unions' financial reporting is in the process of a fundamental change influenced by the growth of technological innovation. The change in computing techniques has seen automation tools like AI, ML, blockchain, and cloud computing paint a new picture of how credit unions prepare, process, and analyze their financial reports. Now, these technologies are aiding processes, improving the quality of data, and minimizing the burden for the finance department.

### 8.1 Advances in AI and Machine Learning

AI and ML are the most effective tools to influence the further development of financial reporting in credit unions. Among the advantages of these technologies, the affordance of the use of predictive analytics of the state of the organization and the calculation of its financial performance for a certain period based on historical data is significant. Davenport and Kirby (2016) claim that with the help of predictive analytics based on artificial intelligence, numerous financial reports that are prepared manually can now be processed much more accurately and in a shorter time. For credit unions, this case entails that AI technologies can process volumes of financial data while identifying trends and presenting them in ways that were hard to come by. In addition, machine learning algorithms can be trained over time to get better results at increased levels of precision, enabling organizations to follow market trends more effectively.

Other common tasks, including data gathering and analysis, classification, and verification, can also be performed using AI-based financial reporting tools. This eliminates or drastically minimizes human errors and allows financial specialists to invest more time in a decision-making process. According to Brynjolfsson and McAfee (2014), AI solutions in the credit union industry are useful in minimizing manual work and improving the correctness of financial projections and fiscal reports. With the future development of these technologies, the adoption of AI and ML in financial reporting is likely to advance in order to make it more intelligent and adaptive.

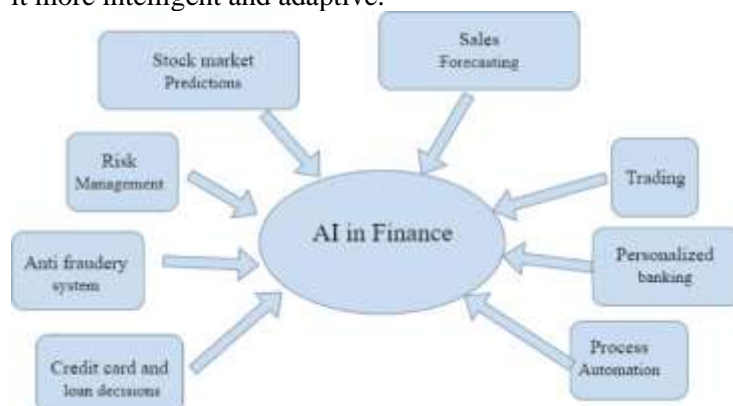


Figure 10: The Advancement and Utilization of Artificial Intelligence and Machine Learning in the Financial Industry and Its Impact on Macro and Microeconomics

## 8.2 Integration with Blockchain

Another perceivable trend in the automation of financial reporting is the incorporation of blockchain. Blockchain has the highest levels of data security and accuracy in data sharing and, therefore, is essential in financial reportage. According to Tapscott and Tapscott (2016), blockchain's shared ledger guarantees that all recorded transactions cannot be altered and that every record is authentic. This feature is very important for credit unions, especially since they process the personal information of members and perform numerous financial transactions.

Blockchain as a technology for financial reporting can help credit unions embrace a reliable process that will guarantee the quality of the final document. Since each transaction is traceable through the blockchain, it ensures credit report financial statements have not been altered, thus enhancing their credibility. Moreover, evidence also emerges that due to the distributed ledger, the application of blockchain makes it easier to meet regulatory requirements, as auditors and regulators can independently review the records without intermediaries.

Automation and blockchain integration into the credit union financial reporting can be disruptive in its current state. This is a great way to show that with automated blockchain reporting, credit unions can unburden the process of report generation and, at the same time, improve the fulfillment of compliance needs. As seen from this trend towards automation and decentralization of financial reporting, the application of the relevant technology heights most of the conventional barriers that result from manual reconciliation and reporting processes.

Table 4: **Integration of Blockchain in Financial Reporting for Credit Unions**

Aspect	Description	Benefit
<b>Data Security and Accuracy</b>	Blockchain's shared ledger ensures all transactions are authentic and unalterable.	Enhances credibility of financial statements and protects sensitive member information.
<b>Traceability of Transactions</b>	Each transaction is recorded and traceable within the blockchain.	Guarantees transparency and prevents unauthorized alterations, ensuring accurate financial reporting.
<b>Regulatory Compliance</b>	Distributed ledger allows auditors and regulators to review records directly without intermediaries.	Simplifies compliance processes and reduces the time and cost associated with external audits.
<b>Automation and Decentralization</b>	Blockchain automates reporting processes and eliminates the need for manual reconciliation.	Reduces operational workload while improving the efficiency and timeliness of financial report generation.
<b>Improved Credibility</b>	Immutable records on the blockchain enhance the trustworthiness of financial reports.	Builds stakeholder confidence in the integrity of the financial statements.
<b>Cost Efficiency</b>	Automation and direct access for regulators reduce the need for extensive third-party interventions.	Lowers costs associated with traditional reconciliation and reporting processes.

## 8.3 Cloud-Based Reporting Solutions

They identified another trend in automation as the move to cloud-based financial reporting solutions. The cloud promises enormous benefits over traditional on-premise solutions, including scalability, accessibility, and cost. Westerman et al. (2014) have mentioned that cloud-based financial reporting systems make it possible for credit unions to allow accurate real-time financial data access anytime there is an internet connection from any location. It is most useful in instances where a credit union has a number of branches or a large and diverse establishment since all financial information is confined to one program.

Based systems also prove flexible to integrate with other systems and applications, such as CRM, financial, and AI analysis. This integration makes it easy for credit unions to ensure that financial data moves efficiently across the systems without much human intercession. In the same respect, cloud computing enables credit unions to be scalable and augment or downsize depending on their requirements, which makes it the best solution for any size of the organization due to this flexibility. In the future, more credit unions are likely to incorporate the use of cloud-based tools as more of these instruments become available to help improve financial reporting. In addition, cloud-based solutions foster a better interconnectivity of teams in organizations. ERP can enable finance teams to work on reports in real-time, which makes it easier to review and reform the reports as needed. This elevates the quality of the financial statements and ensures that the credit unions provide relevant and accurate financial information on time to the users.

The future trends for credit unions with regard to the automation of financial reporting include AI and ML, integration with blockchain, and cloud reporting. The use of these technologies in financial reporting enhances the efficiency, accuracy, and reliability of reports and lowers the number of repetitive tasks in report preparation and processing. With credit unions implementing these tools as the business's daily activities evolve, the entire financial reporting process will eventually be automated since it has assurance in speed, security, and compliance.



Figure 11: Cloud Computing Trends

## 9. Conclusion

This effectiveness is a complete revolution in financial reporting for credit unions as it enhances efficiency, accuracy, and timeliness of decision-making. The transition arises from the reality of having to address some of the hurdles that are most evidently associated with conventional manual systems. Automated systems offer a solution that is less time-consuming and less involved than the manual method while meeting regulatory and stakeholder needs and demands. The advantages of automating financial reporting are enhanced timeliness and accuracy in preparing and distributing financial reports, which will, in turn, help credit unions make timely real-time responses to market situations. This advantage is especially in the

competent financial environment, where swiftness in conclusions on the matter may define the efficiency of the organization. This also provides better security in data management through encryption in addition to access control, improving the standards of financial security of members and improving the attainments of the financial institutions with the regulators. Further, the modularity of automated systems enables credit unions to avail the increased scale of operation since the changes are easy to implement, transition to handle high volumes of transactions, and compliance with the evolving requirements of reporting processes.

The above case of Genisys Credit Union shows the practical benefits of automation in the organization. With new technologies like Angular for easy-to-use dashboards and Go for efficient back-end functioning, Genisys managed to reduce the time spent on preparing reports; errors were also cut down, and, more importantly, the information was deployed to the stakeholders in real time. All of these improvements not only enhanced internal workflow but also strengthened the organization in terms of compliance with regulations and enhancement of member services. These success stories resonate with the potential of automation and the time and place in which credit unions could be served best. In the future, the fields of development are promising, including AI, ML, blockchain, and cloud computing in financial reporting. Far beyond basic data analysis capabilities, both AI and ML provide productive predictions and better data validation. Blockchain also helps maintain the accuracy and security of financial data through the use of distributed ledgers, while cloud solutions provide the convenience and flexibility of an information technology-based system for credit unions to innovate effectively. Such innovations have brought some good hope for enhancing the efficiency and effectiveness of credit unions' financial reporting in an ever-changing financial environment.

Credit unions have several areas to work through to get the most out of automation, including integrating new systems with older ones in their environment, data quality and consistency issues, and the need to educate users on the use of these new tools. Should these challenges be left unaddressed, credit unions would fail to reap the benefits automation brings and would only be able to limit the means for its development and growth in the future. Implementing the automation of financial reports and statements is part of the evolution of advising your credit union, making adequate decisions for growth, and ensuring compliance. It is not an option but part of strategic management. It is, therefore, important that credit unions research and begin adopting the automation solutions best suited to the needs of their credit union. In this way, they can promote their top priorities by focusing on the financial sector, increasing stakes on innovation, and strengthening the identity of reliable companies. It is high time to step up and boost your credit union's efficiency and resilience for the future – that is, embrace automation.

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