



# The Definitive Guide

## to Data Management for Credit Unions



“Knowing member needs is more important than ever. The most successful credit unions utilize the vast amounts of data at their disposal – creating happier members and more transactions.”

**-Tom Davis, President and CEO of Trelance**

## Credit union leaders use data to drive results

In this document, you'll learn how CEOs, CIOs, and CDOs are managing data to improve their organizations in new ways:

- How to gain alignment and achieve quick wins with data initiatives
- How to perform a data management assessment of your entire enterprise
- How to quickly generate insights from a new generation of analytics and predictive modeling tools
- Effective methods to bring data sources together in one place, normalizing them and aggregating them into a central repository
- How to efficiently use people, processes, and technology to maximize data value
- How to manage the full data lifecycle at your enterprise
- Creative solutions that uniquely combine self-service, professional services, and outsourced managed services



## Contributors

With the most extensive data management consulting in the industry, Trellance's team of data experts works alongside credit unions to address the people, processes, and technology at every stage of data program maturity.



### **Merrill Albert, Lead Author**

Merrill Albert is the Data Services Delivery Director for Trellance, where she leads the development and delivery of data management initiatives for credit unions. Merrill has a history of holding senior data roles at organizations, helping them better manage and maximize their data.



### **Nikki Dever, Contributing Author**

Nikki Dever is the Senior Demand Generation Manager at Trellance, the leading data analytics platform and services provider for financial institutions. Throughout her career, Nikki has helped data technology providers to bring actionable insights to life in their client organizations.



### **Kaushal Pandya, Executive Contributor**

Kaushal Pandya is the Chief Data Officer for Trellance, where he specializes in creating data management technology and business solutions that deliver more value from client data.

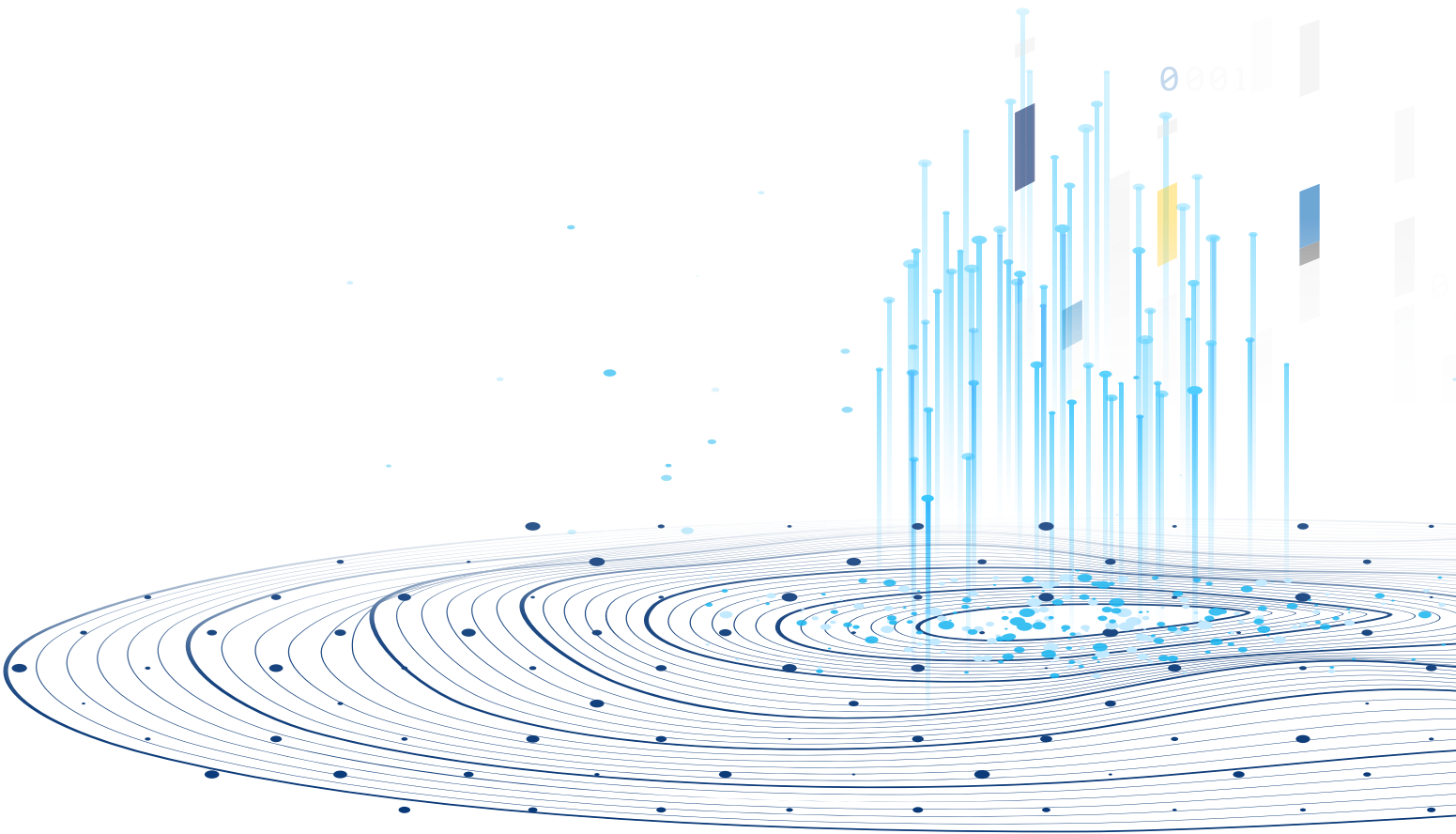


### **Bill Lehman, Executive Contributor**

Bill Lehman is the Senior Vice President of Professional and Managed Services for Trellance. With over 25 years of progressive executive leadership in the credit union industry, Bill leads a highly experienced team that implements data-driven solutions to help clients achieve growth and profitability.

# Contents

Introduction	6
Data Governance	9
Data Architecture	11
Metadata	13
Data Quality	15
Data Lifecycle	17
Data Privacy	19
Analytics	21
Conclusion	25



# Introduction

## From Data to Insights

Your credit union collects data on member behavior, member preferences, and overall member patterns every day. One of the most valuable actions a credit union can take is to empower employees to use raw data well, which leads to better business decisions and promotes future growth. One proven way to accomplish this goal is to apply analytics and knowledge to gain meaningful insights. With these insights, your credit union can:

- Improve member experiences
- Increase product penetration
- Optimize marketing campaigns
- Increase operational efficiency
- Reduce costs

## You Already Have the Data You Need

Every day, credit unions collect data points from their members. Once data is available, mathematical techniques can be applied to help you better understand this data through a process called analytics. For example, the day, month, and year that a member opens a mortgage account is a data point. When you view the data point across your member base to identify a trend, you are using analytics. Taking these analytics and applying your business knowledge to them is called insights.

Let's continue with the simple mortgage example above. Say you observe unfavorable patterns with your mortgage accounts. Using data, you see that mortgage account patterns have worsened and that they are highly correlated with a recession. With this insight, you can decide to adjust interest rates or provide updated terms and incentives that are specific to the dynamics of the recession – helping to reverse the unfavorable trend.

This hypothetical example is a simple one. In reality, the most valuable insights are often derived from multiple data points, which are likely housed in various systems across an entire organization – or multiple organizations. Combining data from your core processor with external reporting systems, like a credit reporting bureau, can give you powerful insights like which members' credit lines you would like to increase. Extending specific members' credit based on your findings can result in an improved member experience, increased consumer spending, and expanded top-of-wallet usage.

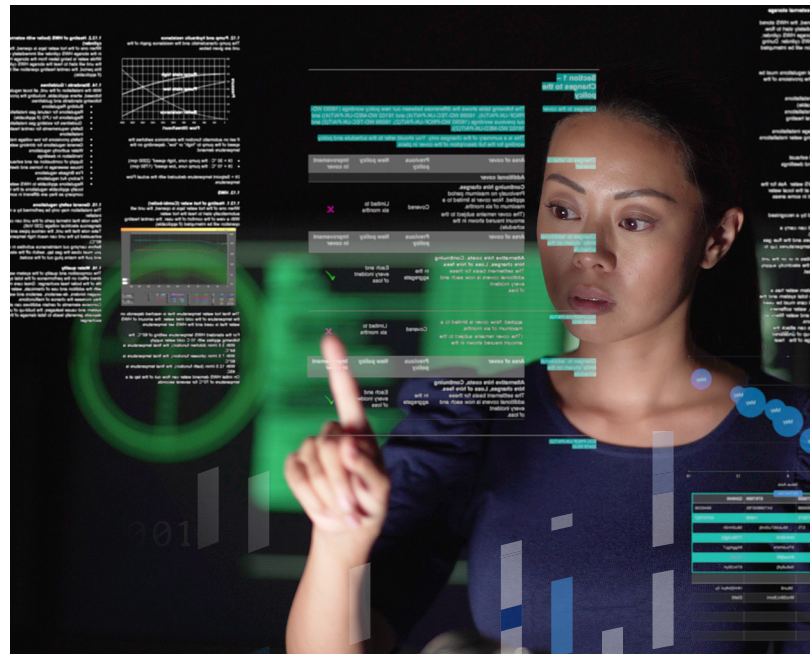


## Building a Foundation for Better Insights

Data is critical to your credit union's ability to gain reliable insights and encourage smarter business decisions. Using effective data practices ensures that your data is accurate, current, and accessible. Improving your data practices can have a significant impact on your credit union's bottom line. According to PwC, companies who fully exploit the potential of data they already have can reduce annual costs by 1/3 and increase incremental revenue by over 30%.<sup>1</sup> Further, according to a ten-year old study by the University of Texas, "if the median Fortune 1000 business... increased the usability of its data by just 10%, it would translate to an increase in \$2.01 billion in total revenue annually."<sup>2</sup> Now, a decade later, the number would likely be even higher.

To achieve results like these, credit unions are building a reliable data management foundation. Using proven techniques and following a structured methodology will help you build this foundation, allowing you to unleash critical business insights.

A disciplined methodology is essential. Implementing data health checks, such as a yearly review process, will ensure that nothing falls through the cracks. Once you have the right foundation, you'll be able to scale programs and deliver more value to your most important stakeholders. This foundation begins by addressing each of the seven disciplines of data management outlined on the following page.



<sup>1</sup> "AI Efforts at Large Companies May Be Hindered by Poor Quality Data." By Angus Loten, Wall Street Journal. March 4, 2019.

<sup>2</sup> "Measuring the Business Impacts of Effective Data," Chapter One of a Three-Part Study. By Anitesh Barua, University of Texas at Austin; Deepa Mani, Indian School of Business; Rajiv Mukherjee, University of Texas at Austin. Page 3. 2010.

## The Data Management Framework

Data management is a framework based on seven interrelated disciplines used by a company to maximize the value of its data. Effective data management allows decision-makers to deliver the right data to the right audiences at the right time.

Using proven data management practices, your credit union can create a powerful data foundation that is accurate, current, and accessible.

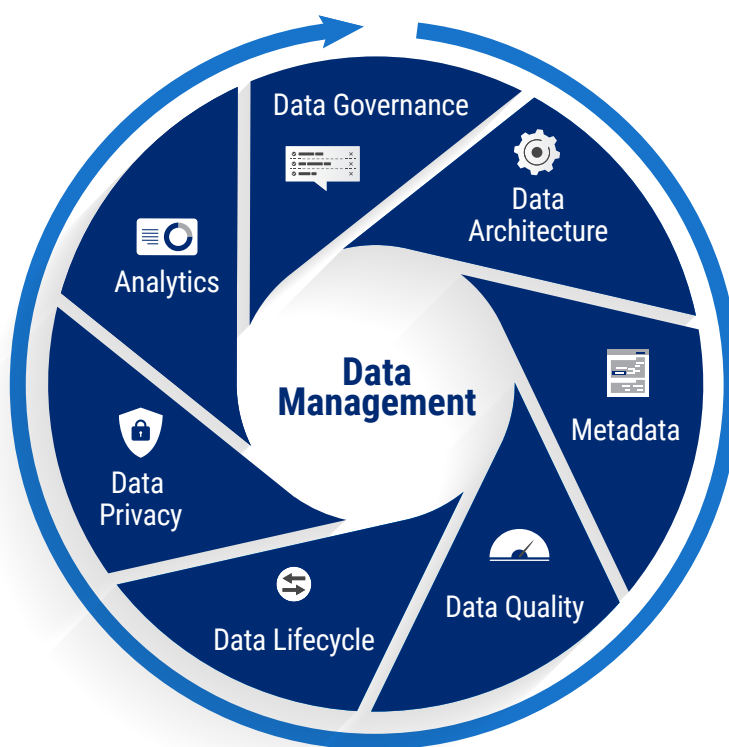
The seven data disciplines below make up a comprehensive data management strategy. Each of the disciplines works together and complements the others.

**Data Governance** provides overarching support through stewardship, policies, processes, standards, and adherence to data management leading practices.

**Analytics** transforms data into valuable insights and decision-making capabilities for teams throughout the organization.

**Data Privacy** supports the organization's ability to manage what data can be shared internally and with third parties.

**Data Lifecycle** provides the correct process and flow so that data can maintain its integrity through the data supply chain.



**Data Architecture** provides the infrastructure for the storage, integration, and use of data throughout the organization.

**Metadata** allows leaders to use data more efficiently by providing key information about data attributes.

**Data Quality** allows data to be used for its original purpose and provides organizational confidence when using that data.



# Seven Disciplines of Data Management

## What is Data Governance?

Data governance is the organized management of people, process, and technology supporting an institution's data. The goal is to reinforce all touchpoints with data – acquisition, creation, organization, distribution, and usage. Data governance allows you to build the foundational data upon which you can base your analytics and insights.

Data governance brings together people, process, and technology to get the most value from your credit union's data:

- 1 People:** The data governance team is a cross-functional team that provides timely and accurate information to support business decisions. They are responsible for ensuring that each employee within the credit union, or external organizations, has access to the appropriate data to make informed and timely decisions.
- 2 Process:** Processes are important to understand what tasks need to be performed so they can be consistently completed. Each team should be aware of their necessary tasks and work together to make decisions based on the complete credit union need.
- 3 Technology:** The final piece of the puzzle, technology plays a vital role in supporting data governance. Whether you're looking at data lineage tools, data analytics platforms, or databases, technology needs should be factored in to a data governance plan.

## Why Data Governance Matters

Data governance oversees the maintenance of data assets. A significant benefit of data governance is the consistency it brings to stakeholders, while helping each to achieve their objectives. A structured and repeatable methodology ensures that roles, processes, metrics, and standard documentation is available. This approach gives users confidence in data assets, data usage, and regulatory requirements.

Without data governance, credit union leaders may be using incomplete or inaccurate data to make decisions, resulting in decisions that benefit one area without understanding how other areas are affected. This lack of data transparency can lead to costly oversights, inefficiency, and non-compliance.

## Data Governance in Action

When building a data governance plan, consider the following steps:

- 1 Create an effective charter:** To drive consistency and build a strong data governance methodology, it is imperative to start with a data governance charter. Charters outline how data governance is structured, decisions are made, responsibilities are distributed, meetings are managed, and more. An effective charter sets expectations and helps your organization address its unique needs.
- 2 Build a strong team:** Getting the right people involved develops the data culture and practices within an organization. Data governance initiatives involve collaborative teams that demonstrate decision-making transparency and inclusion. When building a team, consider how important information flows throughout the data lifecycle of a credit union. A single person or department shouldn't make all the decisions. Rather, data governance teams should include business decision-makers and representatives from across the organization.
- 3 Develop the right processes:** Documenting, operationalizing, and enforcing policies or processes provides the structure needed in an organization. As individuals throughout the credit union use data and follow established processes, they will know what to do and how to do it. And as new employees join the credit union, or current employees change roles, they will need to be trained on the right processes to follow. These processes help to maintain data integrity and overall data governance.
- 4 Manage data appropriately:** Treat your data well from the time you initially create or acquire it. Do this well, and you won't have to continually redefine processes or clean up data problems – both of which consume time and attention.
- 5 Find a skilled partner:** An objective, external partner can help you develop the right plans and processes. With a data management consulting practice, a leading data analytics platform, and a results-based professional services team, Trellance helps credit unions with all aspects of data governance.

## What is Data Architecture?

Data architecture explains the context of how a company stores, integrates, and uses data. A data architecture diagram illustrates how data flows through the systems, and supporting metadata documentation details the transformations imposed on the data.

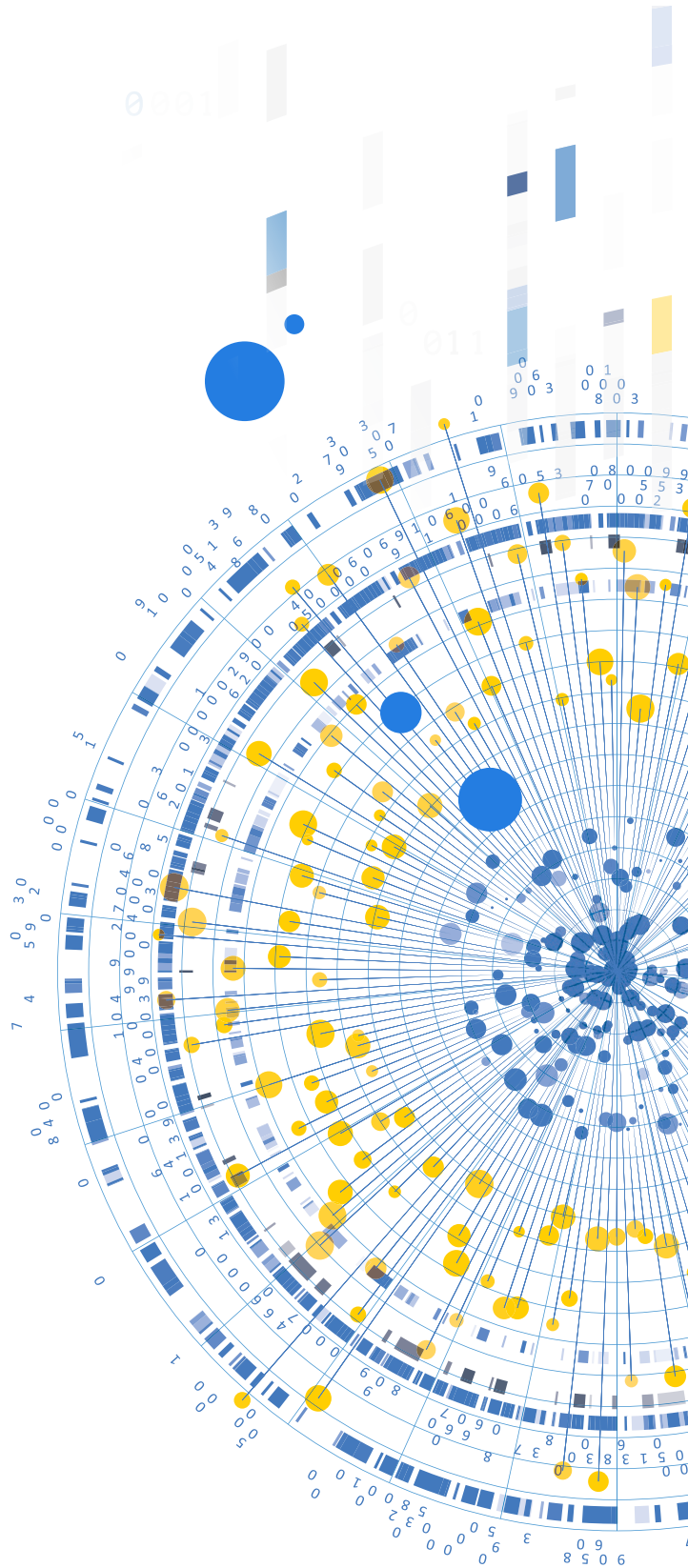
## Why Data Architecture Matters

To manage data properly, it is critical to build a strong data architecture and understand how your credit union is handling, storing, integrating, and using data. For example, if a calculation to generate a total is performed but the calculation is not understood, then you could run the risk of generating poor results due to misunderstood data.

A strong data architecture makes it easier to understand where a report's data originated from and how it has been used. Typically, data can reside in multiple databases at various times in its lifecycle which makes understanding every interaction important. A well-designed data architecture provides the structure needed to find and use data easily.

Another way to think of data architecture is to picture it as a closet in your house, and data as the items inside that closet – when it's organized you can easily open it up and pull out what you need. When it's not, you can spend a lot of time, with added frustration, trying to find an item. And like a full closet, it's easier to keep data organized the moment you acquire it than it is to organize it after it has become cluttered.

A properly designed architecture has a single source of truth (also known as an authoritative data source). The philosophy behind a single source of truth is that there should only be one place to find the data, instead of having to look in multiple, potentially conflicting locations.



## Data Architecture in Action

Best practices for designing and maintaining a solid data architecture include:

### 1 **Organize data properly.**

Eliminating data held individually by departments or applications can help guide proper data organization. Because data is often hard to find, individuals are likely to store it in a location that grants them ease of access – but not share this information across the organization or even the department. This common outcome is how departments end up managing data separately. Attempting to find and correct data sets can become a tedious, time-consuming, and costly process.

### 2 **Eliminate duplicate data.**

Duplicated data is a common problem facing credit unions as they grow and acquire applications with new or unintegrated databases. As an integrated data architecture is designed, having a single source of truth helps to prevent data management problems and inconsistencies that may arise from duplicated data.

### 3 **Manage data as it's received.**

Your data architecture will need to know what data is arriving, when it's coming, if it's overwriting or merging with other data, where it should be stored, and more. For example, if your credit union has a member named Bob Smith with a savings account and a line of credit, you'll want to know if a new insurance policy for a "Bob Smith" is the existing member or a new one. By managing your data as soon as it's received or generated, you'll establish a strong foundation and maintain strong data architecture.

## What is Metadata?

Metadata is commonly referred to as “data about data,” and the job of metadata is to describe, organize, or manage other data. This metadata can be classified into different types that address areas like business processes, operations, or technology. Importantly, it allows credit union professionals to understand where data comes from and how it is used, playing a vital role in an organization’s daily activities. The following three components are important metadata building blocks:

**Definitions:** As part of managing metadata, data elements or fields get defined. For example, a credit union may define what a “loan type code” is and is not, classifying the different types of loans that meet the definition requirements. If a certain term is not defined, it can be understood or used in ways other than intended. By defining terms, you give them shared meaning and influence how they are used.

**Code values:** Letters, numbers, words, or alphanumeric strings that are consistently applied to defined data fields are examples of code values. An example of a code value is something like “loan type code,” which will have a set of values denoting what kind of loan it is (e.g., “MO” for mortgage, “AU” for automotive, etc.)

**Data lineage:** Data lineage, the process of tracing a data path over time, is a form of metadata that details the journey data takes during its lifecycle. This journey includes its origins, how it has been used, and where it has been. Data lineage is like genealogy in that it has parents and grandparents that can be traced over a history.

## Why Metadata Matters

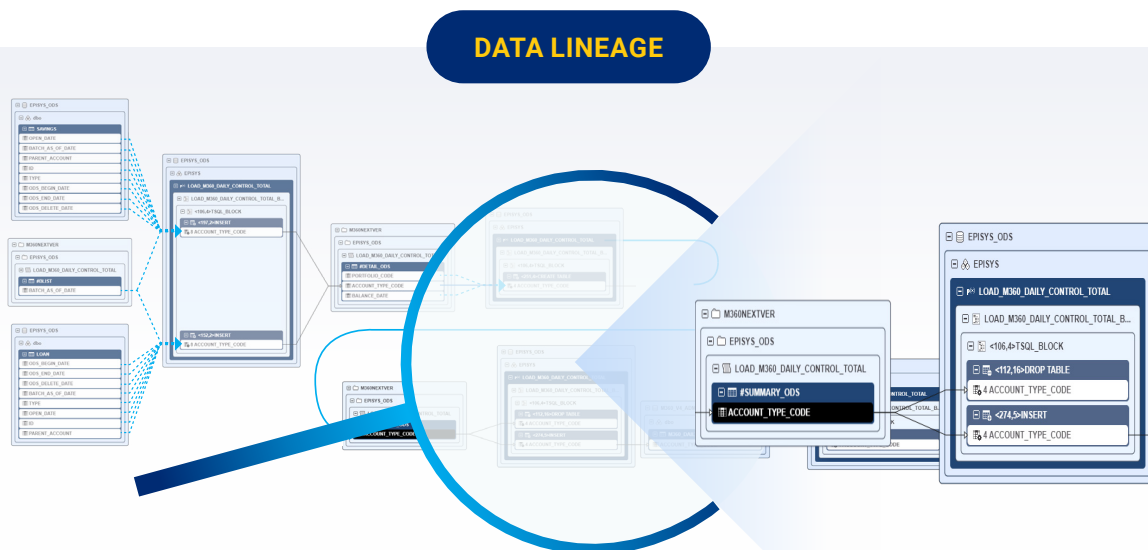
In today’s data-driven world, organizations like credit unions receive and process more data than ever before. Because of the volume, variety, speed, and criticality of data, it is essential to structure this data effectively and gain insights from it. By having properly defined and documented metadata, employees can better discover, organize, or archive data. They can also use the data more effectively. Proper management of metadata reduces the likelihood that an organization will become overwhelmed by its data. These are some of the reasons why metadata matters.

As you create definitions, you may become aware of issues you may not have known about or fully appreciated. For instance, some might use the term “member,” while others use the word “customer.” Some departments might use the two terms interchangeably, while others may use them distinctly. Defining specific data elements reduces confusion and provides employees with a universal reference language. It also creates consistency despite expected changes in personnel, technology, or operations. As your organization changes, you will update definitions, code values, data flows, and associated documentation. You will also ensure that these are consistently applied to various systems.

## Metadata in Action

Tips for designing and maintaining metadata include:

- 1 Define definitions consistently across departments:** Credit union departments that follow an integrated architecture grow together organically, with each department aware of what the other is doing. To help achieve this, ensure that terms are defined consistently across the organization to aid in communication efforts and reconcile data company-wide.
- 2 Ensure metadata is properly documented:** It's not always possible to know what a data element means or where it originated from without clear documentation. And even when data elements are well defined, they may not be documented, or the documentation may be incomplete or incorrect. Proper documentation and training improve organizational alignment and data accuracy.
- 3 Build an inventory of data assets:** Having a place for data assets saves time. It also helps teams take advantage of the resources you have built and stored. Data will be more accessible, especially at times when you need it the most. Once the inventory is built, it is essential to communicate where it is, how to use it, and how to maintain it.
- 4 Understand how data is sourced and used:** Understand your metadata so others can use it to make sound business decisions. Learn how data arrives in the credit union, the transformations it undergoes, where it's displayed, how it's stored, and where it's archived. Doing so will also help you identify problems as they arise, addressing them at the source and fixing them faster. Attempting to fix data later in its lifecycle doesn't fix the problem's source and will lead to repeat incidents.
- 5 Use tools to understand data lineage flows:** Having a documented data lineage allows you to trace any data issues back to the source. If a data issue is discovered, you can locate the point of deviation and correct problems related to the data source. Employees can create a data lineage sequence on their own or use a commercially available tool that visually maps and displays this data's movement from origin to destination. This exercise will tell you how your data mechanically flows so that you can further refine how it should flow (see image below).





## What is Data Quality?

Data quality is the measure of data's condition for its intended use in operations, decision making, and planning. The conditions that measure data quality are based on the following dimensions:

**Accuracy:** The data accurately represents the business value. *Example: Does the member zip code belong to the correct address?*

**Completeness:** All of the appropriate data is readily available, and no data is missing or in an unusable state. *Example: Do all addresses have zip codes?*

**Conformity:** The data is in the necessary format and its values align with those required formats. *Example: Are all zip codes stored in the correct format?*

**Consistency:** There are no conflicting results with the data in the same database or across multiple databases. *Example: Is the zip code correct for all identical addresses?*

**Integrity:** Linked data elements are consistent with each other, preventing a disconnect. *Example: Is the zip code stored with its matching address?*

**Timeliness:** Data is available when expected. *Example: Does the zip code populate when the rest of the address is entered?*

**Uniqueness:** The data is not duplicated or represented in multiple locations. *Example: Is the zip code stored in multiple places?*

Thanks to the increased reliance on data to drive business decisions, there has been a stronger focus on data quality in recent years. Maintaining high-quality data helps credit unions discover and fix data errors as well as determine if their IT systems function correctly.

## Why Data Quality Matters

If data quality is measured by the components listed above and is maintained properly, you should have high-quality data. High-quality data provides many benefits to credit unions, including the ability to provide the necessary information to handle services effectively, promote accountability, and prioritize and utilize resources properly. It also helps credit unions save time, energy, and money by keeping business processes running smoothly. Additionally, high-quality data can lead to better business decisions by increasing the accuracy of analytics applications.

Conversely, low-quality data can cause critical issues for credit unions, including inaccurate analysis, bad information quality, operational errors, improper business decisions, and risk exposure. Examples of the damage that low-quality data can cause credit unions include lost sales opportunities or the failure to meet mandatory compliance regulations.

Because it can impact public-facing materials, data quality can be highly visible to your members – and the stakes are always high when dealing with financial assets and personal information. Small errors can have big consequences, like an incorrect address causing a member's financial information to be sent to the wrong home, compromising their privacy. Even if financial assets are not affected, a commitment to high-quality data helps to keep your credit union maintaining its professionalism and enhancing the member experience. For instance, if a member sees their name misspelled, trust may be eroded as they wonder what other, bigger errors you're missing.

## Data Quality in Action

Tips for building and maintaining high-quality data include:

### 1 Build a data quality culture:

To improve data quality in your credit union, build a culture that respects and promotes high-quality data. This includes encouraging every employee to take the time to review data carefully and speak up if they have doubts about the data or the report – regardless of their experience level or tenure. An additional step you can take is to create a checklist based on the components that measure data quality (listed above), then have employees use it to review data and sign off on it to promote accountability. Because credit unions frequently make decisions based on data, everyone must do their part to ensure reports are correct.

### 2 Eliminate data inconsistencies:

Financial institutions are highly regulated. When the data being reported is not perfect, it can lead to problems with the regulatory body, including steep fines. Potentially just as damaging as a financial penalty is the significant reputational harm that can occur if the enforcement action is made public. By taking the time to eliminate any inconsistencies in the data, you help to keep your credit union in compliance and avoid unnecessary financial or reputational damages.

### 3 Complete a data checkup:

Perform a data checkup to confirm that all of your data is high-quality and accounted for. If part of the data is not reported, it means that some information is missing which may prevent you from taking appropriate actions. For example, a decision made on a subset of the data could be wrong if that subset was missing critical information. Building high-quality data can take time; while you ideally would catch data quality issues when you receive or enter the data, errors might still slip through the cracks. By accepting this outcome and doing regular data checkups, you'll be better prepared to detect problems yourself rather than waiting to hear about them from a member.

## What is Data Lifecycle?

Data lifecycle is the process of checking data quality throughout the series of stages data takes in its life, including its origin, the departments it travels through, and its final destination – either archival or deletion from the credit union. Whenever the lifecycle stage changes, the data involved must be monitored and managed for its data quality.

There are typically six data lifecycle stages:



**Data capture:** The stage when new data values are made through data acquisition (i.e., absorbing existing data from an outside organization) or data entry (i.e., the creation of new data in-house).



**Data processing:** During this stage, data undergoes processing for usage (e.g., enrichment, calculations).



**Data transmission:** During the data transmission stage, data undergoes steps to prepare it for the next stages of the data lifecycle and make it easier to transport (e.g., data movement, integration).



**Data usage:** When data has been sufficiently transformed during maintenance, it is ready for data usage. During this stage, the data is applied as information to complete important credit union tasks.



**Data retention:** During this stage, data is removed from active environments and archived in case it's needed again.



**Data disposal:** The final stage of data lifecycle, data disposal is the removal of data that is no longer needed. During data disposal, unnecessary data is removed from a credit union's systems.

## Why Data Lifecycle Matters

Because the amount of data that credit unions possess is significant and growing daily, it is important to understand the data lifecycle to ensure its quality. Benefits of high-quality data include the ability to diagnose data problems and swiftly act when they're uncovered, optimize the usefulness of existing data, and mitigate data errors.

Additionally, proper data lifecycle management can help credit unions utilize their data more efficiently. This saves credit unions time, money, and resources, leading to better business decisions and new member opportunities.

## Data Lifecycle in Action

Tips for understanding the data lifecycle and promoting proper data management include:

- 1 Maintain documentation:**  
Keep data lifecycle documentation to help provide context and trace back any potential data issues to their origin. A problem on a report won't tell you where the error occurred, if it's a problem with how the data is displayed in the report, if the data moved to a different database, or if someone made a mistake entering the data. Having proper documentation regarding the steps to take and regularly checking the data quality helps prevent any significant issues.
- 2 Correct problems at their origin:**  
Whenever issues are corrected, ensure that they are made at the root of the problem to prevent them from continuing. A common misconception with data is that any problems can be remediated as they're discovered. While this thinking is well-intentioned to address the problem quickly, it can inadvertently cause

other complications. For example, suppose an employee notices that a member's address was incorrect in a database and fixes it. In that case, the employee may not realize the incorrect address exists in other databases – allowing the error to continue unnoticed.

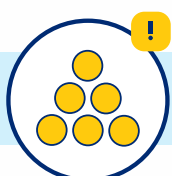
- 3 Promote data lifecycle education:**  
To ensure a strong understanding of the data lifecycle, make continuing education a priority for existing employees and data lifecycle training a part of the onboarding process for new hires. Data moves throughout a credit union, touching multiple departments and systems. It goes through transformations, is displayed in various places, and is eventually stored in numerous locations. By having proper data lifecycle management, your team can have the confidence that you're using correct data and have the required documentation if a problem arises.

## Diagnosing Errors in the Data Lifecycle

Data issues can happen at multiple points in the lifecycle. Maintaining proper data records helps to trace the issue back to its point of origin.



**Was the  
data entered  
correctly?**



**Was it  
calculated  
correctly?**



**Was it  
moved  
correctly?**



**Did it get  
displayed  
correctly?**

## What is Data Privacy?

Data privacy is the protection and continual confidentiality of data that is collected, shared, and used. In a credit union, this data can be any personal information including:



**Name:** Full name, maiden name, or alias



**Personal identification number:** Social security number, taxpayer identification number, credit card numbers, bank accounts, driver's license number, or passport ID



**Contact information:** Physical address, email address, telephone number, or business phone and address information



**Personal characteristics:** Photo images (including a headshot for account verification purposes) or biometric data, including fingerprints, retinal scans, or voice signature



**Other personal information:** Date of birth, age, race, religion, location, demographic information, education, marital status, employment information, financial information, family information, or criminal history

## Why Data Privacy Matters

Data privacy is a popular subject these days, and for good reason – because organizations like credit unions are holding more data than ever, they are increasingly becoming high-value targets for data breaches. Because of these threats, data privacy is a critical cornerstone of credit unions. Strong data privacy practices protect your credit union and its members, ensure a positive customer experience, maintain regulatory compliance, and foster a culture of trust and accountability with your members.

A poor approach to data privacy can result in more than just a loss of trust and accountability – it can cause your credit union to run afoul of privacy laws. As people become more aware of how their personal information is collected and how it could be exposed during a data breach, they want to know what information organizations have. In some cases, they may want it removed. Laws are rapidly catching up to this desire for data privacy and can vary from country to country – or even from state to state.

As these laws grow in importance and visibility, credit unions can expect a significant increase in new laws, many of which are already at various stages of creation or implementation. Failure to understand or comply with these laws can result in financial penalties, loss of members, or reputational damage.

## Data Privacy in Action

Tips for putting data privacy into practice:

- 1 Ensure privacy regulation compliance:** As outlined above, credit unions need to understand and adhere to data privacy regulations like the European Union's General Data Protection Regulation (GDPR) or the California Consumer Protection Act (CCPA). While California's privacy act is already in effect, many more states are actively looking to implement something similar soon. Failure to incorporate adherence to these regulations into your data privacy plan could be damaging. It is also important to note that data privacy regulations are applied based on the current residence of the member, not where your branch is located. For instance, if you only have branches in New York but have a member who lives in California, you must still follow CCPA guidelines.
- 2 Create a data privacy plan:** Preparation is key – document the location of your data now so you can quickly find it later. If a member asks to see what personal information you have about them, most data privacy laws require you to present the requested information within a strict timeline. These timelines offer little room for compromise – if you can't respond by the deadline, you may be found in violation and penalized. Your credit union can save itself a lot of time and stress by creating a plan to quickly locate the data instead of searching through program code and databases.
- 3 Understand how to dispose of data:** It is vital for every credit union employee to understand how to properly dispose of data to adhere to data privacy regulations. If a member asks for "the right to be forgotten," your credit union will be required to prove you deleted the requested data within a tight timeframe. Deleting member data under privacy regulations is more comprehensive than just deleting files. Data and its references often permeate an organization and can be found throughout your data ecosystem – making its removal a complex endeavor.
- 4 Create a culture of data privacy:** It is important to know where data exists and who is allowed to see it. Some data might need to be accessed by multiple people, including internal employees and external consultants – but this doesn't necessarily mean that everyone needs access. Your credit union can foster a culture of strong data privacy and mitigate risk by making personal information only accessible to the people or roles that need to access it. By identifying and cataloging this personal data, you can ensure that it's always viewed by the people who are supposed to access it.



## What is Analytics?

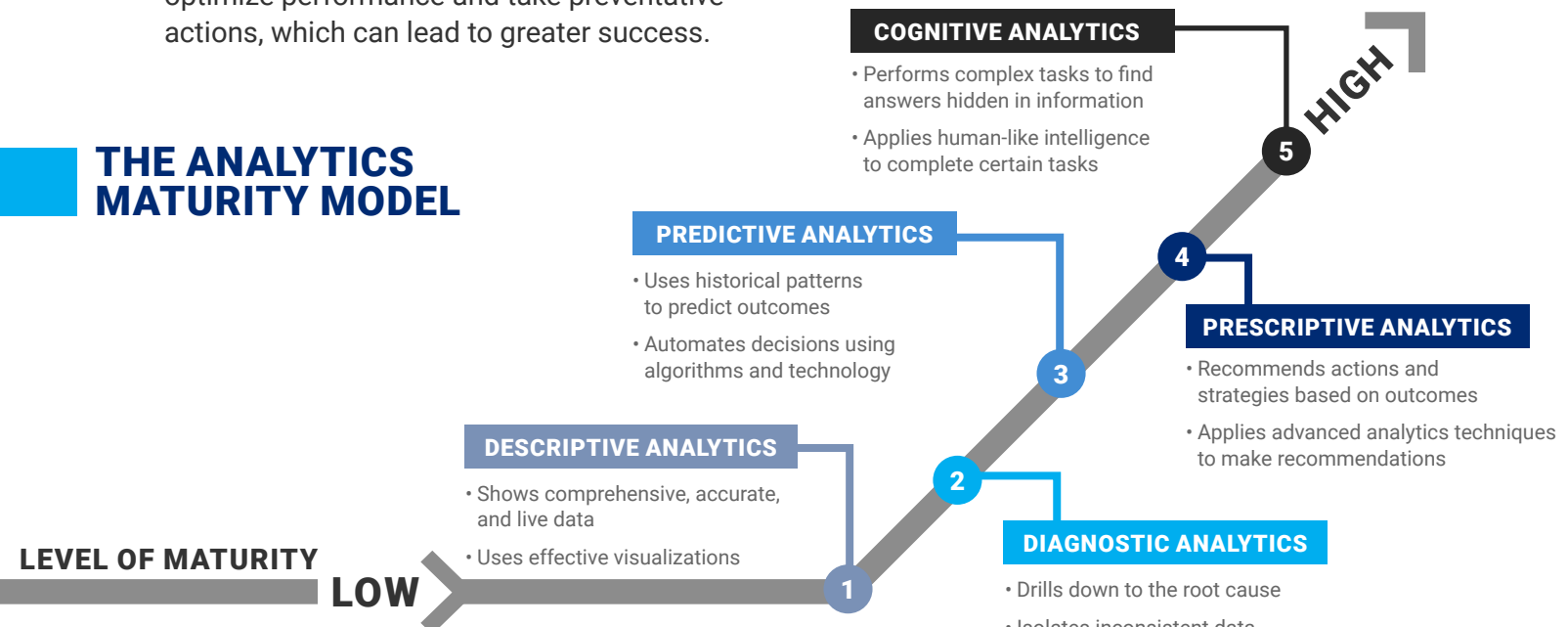
Analytics is a discipline that is focused on helping organizations make better business decisions; it takes data that has already been prepared and puts it into action. The objective of analytics is to apply business knowledge and generate insights, which can then lead to more effective decision-making.

There are five different analytics categories. While related, each of the categories uses data to generate different insights. Technology often plays a major role in the delivery of these insights.

- 1 **Descriptive analytics.** *Descriptive analytics tells you what happened previously.* This type of analytics is used to perform historical analysis and to provide insights into an organization's past performance. These insights should be comprehensive, accurate, and data-based descriptions that reflect actual events.
- 2 **Diagnostic analytics.** *Diagnostic analytics tells you why something happened previously.* To understand why events happened the way they did, credit unions must isolate certain information and identify the root cause. Understanding root causes will help you optimize performance and take preventative actions, which can lead to greater success.

- 3 **Predictive analytics.** *Predictive analytics tells you what may happen in the future.* When analyzing business data, algorithms can be used to identify historical trends and anticipate future trends. When algorithms are automated, so too is the decision-making process. This saves time and frees up resources elsewhere in the organization.
- 4 **Prescriptive analytics.** *Prescriptive analytics helps you know what to do in the future.* This type of analytics advises you on possible outcomes. Based on the data and scenarios analyzed, prescriptive analytics recommends specific actions and strategies. These recommendations are generally made via advanced analytical techniques.
- 5 **Cognitive analytics.** *Cognitive analytics helps you achieve future outcomes.* Cognitive analytics allows you to perform complex tasks and find answers hidden in a large volume of information. A unique aspect of cognitive analytics is the ability to apply human-like intelligence to specific tasks (e.g., understanding not just the words in a text but also the full context). Tools and techniques include natural language, artificial intelligence, machine learning, and deep learning.

## THE ANALYTICS MATURITY MODEL



## Why Analytics Matters

Credit unions now compete in a data-driven world, and they are fortunate to have some of the most valuable data available. Because analytics is often at the center of successful data initiatives, credit unions are now executing strategy in new ways – gaining insights while eliminating guesswork. The science of analytics is thriving in the member finance industry.

Sometimes, credit unions go big on analytics without first investing proper time and attention on the data itself. Many successful analytics projects combine software with data management improvements or consulting services to produce clean data and powerful analytics.

Practically speaking, credit unions can use analytics to improve key performance indicators (KPIs) in a variety of programs and business domains, including:

- ▶ Consumer loan origination
- ▶ Mortgage loan origination
- ▶ Commercial loan origination
- ▶ Mortgage loan servicing
- ▶ General ledger (GL)
- ▶ Payments
- ▶ Digital banking
- ▶ Credit risk/collections

Analytics platforms can also be used to gain a better understanding of trends and opportunities relating to members, branches, operations, dealers, and more. Virtually any combination of business functions and domains can be utilized to create a unique analytics user story.

With the enactment of recent data protection and privacy regulations, analytics platforms play an important role in an organization's overall data management strategy by allowing users to build customized reports and dashboards that address compliance and regulatory needs. Perhaps most importantly, analytics platforms allow users to quickly and conveniently access important data.

## Analytics in Action

As you build your analytics plan, consider how you will visualize and interact with your data. Visualization is the science of transforming data into illustrated representations, like dynamic charts, graphs, and infographics. These visualizations help bring data to life, making it easier for information to be understood and shared. Data visualizations also help credit unions understand member behavior, address risks, make data more memorable to stakeholders, improve insights, and make faster and better business decisions.

Insights from analytics can also help your organization during uncertain economic times. Active use of analytics helps your organization stay competitive and better serve members. For these reasons, many credit unions have recently implemented an analytics solution or are in the process of evaluating when and how to introduce one.

As you evaluate, select, and implement an analytics solution, consider the following steps:

### 1 Ensure your data is complete.

Accurate analytics cannot be performed when critical data is missing or needs to be extrapolated. Similarly, if there are inconsistencies or errors with the data, the analytics produced will likely be incorrect. Addressing these prior to having data analysts or data scientists tackle the project is essential.

When data is missing, data scientists end up less focused on generating insights and more focused on investigating data problems. This can lead to frustration, opportunity costs, and project delays. Resolving missing or incomplete data issues allows you to maximize the value of a data scientist.

### 2 Properly manage your data.

Starting the analytics process with useful data is imperative, as analytics will be unable to fix mismanaged or substandard data. To prevent poor data, first adopt proper data management procedures. You will need to make the appropriate investments in the people and processes as you build a strong infrastructure. Thereafter, you can generate insights and make business decisions.



Configurable dashboard  
for lending executives;  
Trellance M360

### 3 Invest in the right business intelligence (BI) tools.

Analytics is a sophisticated science; it takes the right talent and tools to be successful. Credit union leaders who utilize analytics need to be able to interpret the facts and apply business knowledge as they move their organization forward. This is accomplished with business intelligence tools and visualizations.

Data project leaders should evaluate BI tools based on business objectives, vendor reputation, quality and quantity of vendor staff, return on investment, total cost of ownership, and features (e.g., core and ancillary connectors, normalization abilities, and scalability).

### 4 Generate insights from analytics.

Developing analytics is just an initial step; organizations must also apply business knowledge to the analytics to gain insights. Having the talent to create these insights helps you maximize the effectiveness of decisions. Data scientists, for example, can play this role. These professionals have a special expertise that combines technical and business knowledge. Depending on your goals and budget, data analysts using an analytics platform, or project consultants, may help you achieve similar outcomes.

### 5 Use your data to plan the future.

Your credit union's data can tell a story of the past, and that has value. However, it's more valuable to have it tell a story of the future. Too often, organizations become more focused on generating insights about the past than they do about using predictive analytics to inform the future. Use analytics to focus on future risks and opportunities.



# Conclusion

Your credit union holds the data keys to understand members, operate efficiently, and stay competitive. The principles and practices contained in this *Definitive Guide to Data Management for Credit Unions* are being used by many of the most effective organizations in all industries. In this new era, successful CEOs, CIOs, and CDOs are actively using data to improve their organizations in new ways – saving time, aligning teams, and increasing revenue. And integrating the seven disciplines of data management throughout your organization will strengthen your people, processes, and technology. Through gap assessments, consulting engagements, and data science solutions, Trellance can help you get started or take the next important step.

## Data Management Action List

- Create an effective charter
- Develop the right processes
- Find a skilled data partner
- Organize data properly
- Eliminate duplicate or inconsistent data
- Ensure metadata is properly documented
- Build an inventory of data assets
- Understand how data is sourced and used
- Use tools to understand data lineage flows
- Build a data management culture
- Complete a data cleanup
- Maintain documentation
- Correct problems at their origin
- Ensure privacy regulation compliance
- Understand how to dispose of data
- Invest in the right business intelligence (BI) tools
- Generate insights from analytics
- Use your data to plan the future

## Taking Data to the Next Level

An easy way to get started with data management is to have Trellance conduct a gap assessment for your organization. Trellance consultants assess your current practices, your goals, and any gaps between them. They also lead data management consulting engagements that help you achieve goals within each of the seven disciplines.

### Steps in a Data Management Gap Assessment



Determine your organization's data management maturity by diagnosing your current state. With a defined checklist and a structured methodology, consultants will examine several areas and produce a data management maturity score.



Once you know how well your organization performs in various data management areas, you can use your current score to set a target for where you would like to get to. This target helps the organization understand how it needs to mature.



With both a current state and a target state defined, you'll quickly see the gap that exists. To close the gap and make improvements, document the issues and identify the steps you need to take to move from the current state to the target state.



Create an action and resource plan to close gaps and improve program performance. Build a timeline that addresses both short-term and long-term needs, with prioritized actions that bridge the gap and mature your data management processes.



# Four Areas in Which Trellance Can Help

Trellance is the leading provider of business analytics, data science, and predictive modeling for credit unions. With Trellance solutions, credit unions unlock the power of data and make better business decisions at every step in the data management journey. Improve business processes with data management solutions and services, turn past and present data into actionable insights, or predict and influence future events. Data is the currency of a brighter future, and Trellance will help you get there.



Attribution Prediction Model;  
Predictive Modeling Suite

## Trellance Business Analytics Portfolio

### 1 Data Management

- M360 Data Platform – cloud and on-prem
- Ironsafe (data extraction)
- Householding (member marketing)
- Data Management Consulting

### 2 Descriptive Analytics

- CUCompare (benchmarking)
- Optics (business intelligence)
- M360 dashboards (Power BI, Tableau, SSRS)
- Invoice Audit Program
- Visualization training
- Custom data visualizations

### 3 Predictive Analytics

- Predictive Analytics Suite (product propensity, attrition prediction, risk score, engagement scoring)
- Custom model development and training

### 4 Prescriptive Analytics

- Card Portfolio Growth Solutions
- Credit Line Increase Program
- New Account Acquisition Program
- Targeted Usage Program
- Auto Refinance
- Custom downstream system integrations (e.g., marketing automation tools, messaging platform etc.)

# Get Started Today with Trellance

Trellance's data management and business analytics solutions, together with the patented common data model of its signature M360 product, are used by credit unions to find actionable insights, improve member experience, and achieve portfolio growth. Founded in 1989, Trellance is headquartered in Tampa, Fla. and serves a growing client base that represents more than \$1B in assets.

To get started, email [products@trellance.com](mailto:products@trellance.com)

■ Visit [Trellance.com](https://trellance.com) to learn more

