# Actionable Insights

## Use Data Analytics and Business Intelligence to Improve Decision-Making

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CUNA
TECHNOLOGY COUNCIL

A white paper from the
CUNA Technology Council

**www.cunacouncils.org**

# Contents

# A Note from the Technology Council Member Resources Committee Chair

Thank you for downloading *Actionable Insights: Using Data Analytics and Business Intelligence for Better Decision Making!*

The Technology Council's Member Resources Committee, which is comprised of fellow Council members, is responsible for producing these white papers. Our Council teamed up with the Finance Council to cover this topic, since it closely affects both areas.

After reading the paper, join the discussion in the Councils Community. We'd like to hear your thoughts, questions, and advice, as well as continue the dialogue on this important topic beyond the white paper itself. *How is your credit union using data to drive decision making?*

Thanks for reading and being a member of the CUNA Technology Council.

Brad Aspgren
Chair, Technology Council Member Resources Committee
SVP-Technology/Innovation
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# Executive Summary

Two functional areas of the credit union tend to take the lead when it comes to data and how to make it actionable: finance and technology. From the basics of ongoing data maintenance to the thought leadership of advanced business intelligence (BI), each element within the data warehouse must be working optimally to allow for data-based decision-making.

This white paper from the CUNA Finance and Technology Councils looks at the continuum of using data analytics and BI—from data discovery, data management using insights for better decision-making and, ultimately, making enhancements to member service. Topics include:

- **Building** a data-minded organization, committed to making sure each element of the data flows together, is maintained appropriately, and is useful and actionable. Ultimately, one of the goals is to make effective strategic and tactical decisions.
- **Forming** an appropriate data management structure that works for your credit union and members.
- **Selecting** the most effective tools and resources to match your credit union's needs.
- **Incorporating** data analytics and BI into credit union planning and the enterprise strategy.
- **Determining** the ultimate goals and results that data analysis and BI strategy will work to achieve.
- **Staffing** appropriately for success—whether through special limited "teams" or an entirely separate department.
- **Collaborating**: to be successful, any team requires cohesion. With a foot each camp—finance and technology—the data/BI team is often considered a unique hybrid. How can credit unions ensure that finance and tech are on the same page strategically?

# Introduction: Starting on the Same Page

Team cohesion begins with a commitment to success and a routine of collaboration, says Bhavesh Shah, director of data management strategy, at $4 billion asset Kinecta Federal Credit Union, Manhattan Beach, CA. The technology team must have a strong partnership with the finance team and commit to a constant feedback loop to ensure that what BI is delivering measures up to the finance team's objectives. The finance team must, in turn, also collaborate with other business teams to drive financial performance based on data solutions.

"BI solutions *should not* be created in silos," he stresses. "Instead, they must always have a purpose that solves a business problem. The BI team should also make suggestions, get executive sponsorship, and pursue ideas that can help the company advance—either in financial performance, member value generation, efficiency improvement, or risk mitigation."

Dan Leclerc, vice president of enterprise analytics at $5 billion asset Ent Credit Union, Colorado Springs, CO, has perspectives from both the finance and technology spheres. He previously served as vice president of finance at Ent, and as chief financial officer at other credit unions. "Even though I report up to the chief information officer at Ent, I'm not a traditional IT person, as my background is more on the finance and accounting side," he explains.

Ent formed a special group to ensure all areas of the credit union are in alignment with a data analytics strategy and that they agree on development priorities. "At Ent, we formed an enterprise analytic steering committee comprised of senior management from finance, lending, IT, marketing, operations, and electronic banking," he describes. "The committee meets monthly, and stays apprised of the landscape around data analytics. To this point, this strategy seems to be effective in keeping all areas focused on the same strategic objectives."

Bill Butler, president/CEO, at $84 million asset Ohio HealthCare Federal Credit Union, Dublin, OH, says that, as CEO, he plays a major role in the effort, too. "I think it's the responsibility of the CEO to gain the insights needed to understand the opportunities available. This mastery by the CEO will sort through the need for both groups to be on the same page."

Ensuring tech and finance are on the same page is both the easiest and the most difficult question to answer, says Michael Lindberg, strategic analytics and member insights manager, at $4.8 billion asset Wings Financial Credit Union, Apple Valley, MN. "In short, if finance and technology are both aligned to corporate strategy, as we find at Wings, then much of the strategic discussion is already complete," he says. "It's the responsibility of each of the leaders of these areas to ensure that they're aligning in a way that supports our organizational strategy and

goals, and that they're working together to help our members succeed."

At Wings Financial, data and analytics function separately from both IT and finance—operating as an independent third party (an internal consulting arm). "We have benefitted greatly from this approach, as it allows us to navigate any complexity (real or perceived) in a way that shows genuine support and encouragement to both finance and IT," says Lindberg. "The data team is not an 'approval gate' for either technology or finance. Instead, we work with both teams to ensure the technology is applied appropriately and securely, and that the data is accurate and balances to the financials that accounting and finance are responsible for. "Both our IT leadership and our finance leadership are represented in our data strategy board," he adds, "which gives them each ownership of being a data-driven organization. And it affords any conversations necessary at the strategic level in the data strategy board meetings."

## Evaluating Team Performance

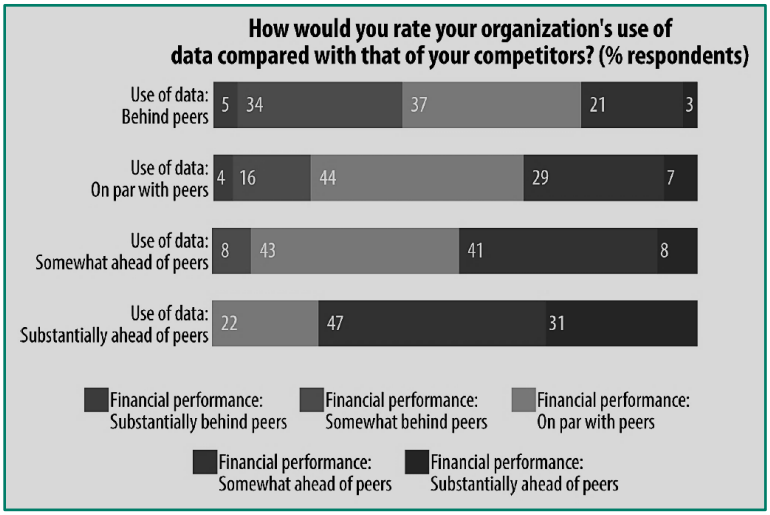
Why is team cohesion around data use so important? And what makes an organization data-driven? The authors of a report from O'Reilly Media Inc., *"Creating a Data-Driven Enterprise With DataOps,"* describe a data-driven organization as "one that understands the importance of data. It possesses a culture of using data to make all business decisions. Note the word *all*. In a data-driven organization, no one comes to a meeting armed only with hunches or intuition. The person with the superior title or largest salary doesn't win the discussion. Facts do. Numbers. Quantitative analyses. Stuff backed up by data."

Why become a data-driven company? Because it pays off, they note. The MIT Center for Digital Business asked 330 companies about their data analytics and business decision-making processes, and found that the more companies characterized themselves as data-driven, the better they performed on objective measures of financial and operational success.

"Specifically, companies in the top third of their industries when it came to making data-driven decisions were, on average, 5% more productive and 6% more profitable than their competitors," notes the O'Reilly report. "This performance difference remained even after accounting for labor, capital, purchased services, and traditional IT investments. It was also statistically significant and reflected in increased stock market prices that could be objectively measured." Another survey, by The Economist Intelligence Unit, showed a clear connection between how a company uses data, and its financial success. Only 11% of companies said their organizations make "substantially" better use of data than their peers. Yet more than 33% of this group fell into the category of "top performing companies." Of the 17% of companies that said they "lagged" their peers in taking advantage of data, not one was a top-performing business.

Any data analytics/BI team is charged with building a data-minded organization, committed to making sure each element in the data set flows together, is maintained appropriately, is useful, and is actionable for strategic and tactical decision-making. How do credit unions measure up on team performance toward becoming data-driven organizations?

### Data Use and Financial Performance




Sources: Economist Intelligence Unit Survey and O'Reilly Media Inc.

Laura Thompson, senior vice president / chief information officer, at $1.6 billion asset Orange County's Credit Union, Santa Ana, CA, says her credit union is definitely on the right path. "This is a large ship to turn, but we're making progress," she describes. "We're trying to build a culture and new skill set to analyze data. We're migrating from a culture of viewing static reports and graphs about the past, to asking questions and using data to get answers. We're also using data to build leads, create targeted campaigns, and create new member segments."

In the past, many of Orange County's managers used reports to manage performance or look at trends. Functional managers didn't always have time to dig deeper or ask questions. So the credit union hired

dedicated BI analysts help managers dig deeper into the data to answer questions.

The enterprise analytics area at Ent also is in the early stages of this process, says Leclerc. "We've built a robust internal data warehouse—aggregating data from our core system, consumer loan origination system, online banking and bill payment systems, credit card and debit card usage, and mortgage servicing systems, and we've begun adding member survey data. We're currently using the data warehouse to help automate internal reporting, which is done manually today. This will free up staff time for more impactful work."

The next phase of Ent's development will be to produce actionable reports for several areas within the organization that can leverage the data to help make informed strategic and business decisions more quickly. During this next phase, the credit union plans to add third-party data to its data warehouse to get 360 degree profiles of members and potential members.

Topline Federal Credit Union in Maple Grove, MN., began building its data warehouse several years ago. "Our first step was to organize the data and document all our sources of data," describes Mick Olson, senior vice president/chief financial officer, at the $452 million asset credit union. "During this phase, we quickly realized the need to fill a knowledge void we had in data analytics, and we hired a data analyst. Once that person was onboard, we were able to define our data sources at a data element level, and we began to research data warehouse options."

Kinecta Federal is also well on the way. Shah says it is an acceptable performance, given the amount of resources allocated to the team. "The challenge has always been prioritizing the various planned and unplanned projects," he says. "We have the needed support from our executive team. And when we must work with vendors, we consistently work into our vendor agreements that we 'must own the data' and insist on an import into our BI platform."

Wings Financial's members' interests and needs are changing, says Lindberg. This is true throughout the financial services industry; transactions that once were primarily paper-based—for example, using cash and checks as payment, opening loans via paper applications, and processing transactions in person or by mail—are now electronic. "The technology has advanced so much that all organizations, large and small, are forced to adapt and change in ways that require 'stretching' for those who prefer things the way they've 'always been done,'" he says.

Wings Financial is fortunate, adds Lindberg, to have a team of senior leaders who see this change and are adapting to best-serve the membership. "As a part of the adaptation, we've seen a marked increase in information requests coming from all areas of the business. Our strategic analytics and member insights team ('data team' for short), is focused on serving the business units, and helping them identify their needs and deliver in a repeatable fashion."

In practice, he describes, each member of the data team takes the lead on building tactics on key areas of focus for BI and analytics. For Wings Financial, these areas are currently:

- consulting services
- data architecture
- data integration
- data presentation
- data governance
- member insights
- data sciences
- data practitioner programs, and
- internship programs.

The manager of the team, along with the credit union's data strategy board, focuses on the strategic alignment and cohesiveness of these practice areas, within the team and throughout the organization.

"From a delivery perspective, we tend to focus on service to the business unit and use enough technology to effectively answer the business need," says Lindberg. "As an example, we *do focus* on data governance, but we *do not* approach governance from a 'single version of the truth' perspective. That approach tends to bury time, effort, and energy into 'master records' that require enforcing across the usage of that record type. We will likely expand in that area when the need arises, but for most of what we're doing, this is unnecessary."

"We tend to limit our governance activities to shared business definitions that have a business unit owner," he adds, "along with any necessary information security governance or overall governance, as guided by our network security and/or enterprise risk teams."

# The Structure of Data Management

Credit unions are organizing their data management efforts in unique ways—based on membership needs, staff expertise, organizational goals, and other factors. Often, the journey is based on a moving target. For example, years ago, at Wings Financial, reporting and BI were spread throughout the organization, says Lindberg, but now, they are specifically focused in three areas: finance, marketing, and information services. "With this structure," he says, "we found that there were inconsistencies in reporting, depending on who was asked, and that many leaders would ask for the same report to be created by each of the primary reporting teams, which led to a great deal of extra effort."

In 2014, the credit union began a process to be more purposeful in the collaboration between these business areas. This led to more efficiency and more alignment in how the organization defines key concepts (for example, "Who is a member?"). On the surface, this might seem intuitive, notes Lindberg, but depending on the core and other systems used it can be complex to define.

A culmination of this collaboration was the formation of Wings Financial's strategic analytics and member insights team, which was seeded by resources from finance, marketing, and information services.

At Ohio HealthCare Federal, data analysis has been a goal for many years, says Butler. "It was always difficult to accomplish, because it required keying data into Excel, parsing data from multiple systems (such as the core and credit card systems), and other clunky work-arounds.

"Fortunately," he adds, "in 2016 our credit union adopted a professional data warehouse delivered by the CUSO OnApproach. We were able to gather data starting in April 2014." The credit union's data warehouse has daily information about:

- **Account** level for all shares, certificates, and loans, including credit cards;
- **Detailed** member information; and
- **Daily** transactions on all share, certificate, and loan accounts, including credit cards.

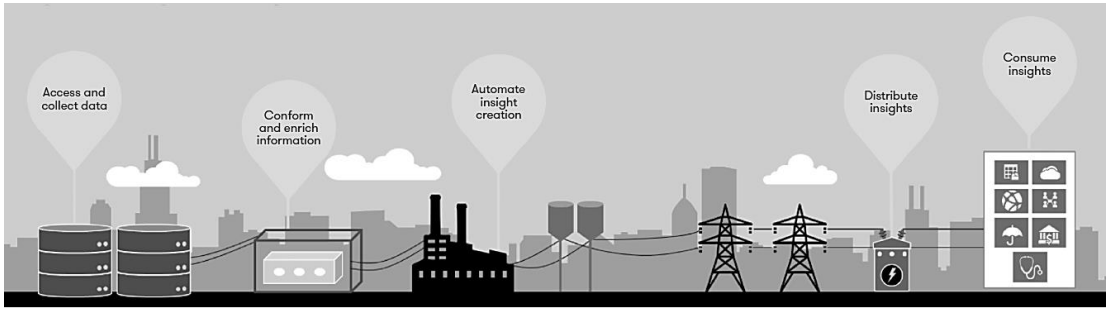
"This is now the foundation of all our BI initiatives," says Butler. "It's a dream come true."

Though the impetus for creating a data strategy can vary from one organization to the next, there are four common drivers, note Srijani Dey and Aleksey Gurevich,in the DXC Technology Company report, *"Defining a Data Strategy."* The four drivers are:

- **Unification** of business and IT perspectives;
- **Enterprise-wide alignment** of vision and guidance on leveraging data as an asset;
- **Definition** of key metrics and success criteria across the enterprise; and
- **Reduction** of technology debt.

"By addressing these drivers in a data strategy, organizations can enable various initiatives at scale, which can yield a utility-like service that provides a 'supply chain of insights,'" describe the authors. "A utility in this context refers to a hardened solution delivered as an end-user-focused service, with the entire supply chain that produces and delivers the insights abstracted from the consumer. It's similar to the way electricity is delivered via a power outlet in the home, with the entire power industry infrastructure abstracted from the consumer.

## Supply Chain of Insights




Source: DXC Technology Co.

"A supply chain of insights is a production-grade workflow for the transformation of data to actionable insights; this workflow encompasses ingestion, analytics, consumption and operationalization," they add. "A data strategy allows companies to abstract the technical and operational complexities from the end user of these utility services, further maturing the target visions for self-service."

Thompson says Orange County's has gone through such a transformation—from having a central data warehouse for consolidating and producing reports (a two-person team) to an Analytics Center of Excellence, with a manager, two SQL programmers, and three BI analysts (some with dedicated areas, dual reporting, in marketing and lending). The credit union also implemented Microsoft Power BI for better visualizations and access to the data.

At the beginning of TopLine Federal's journey, many stand-alone MS Access databases were manually populated, and reporting was manually generated, says Olson. "Also, it lacked a reconciliation process, so most of the data was very difficult to verify," he describes. "Because the data was in disparate databases, it was not only difficult to reconcile, but also was owned by several departments. And in some cases different departments were tracking very similar data points, which was inefficient." (See sidebar, "Single Source of Truth.")

While TopLine Federal has eliminated many of these databases, the data team still finds ad-hoc databases on occasion that departments use because the data doesn't exist in the core or in ancillary systems exactly as they want to see it or for some other legacy reason. The data team is addressing these situations individually. "Our current structure has the manager of data analytics reporting to the CFO, but working very closely with lending, operations, and marketing," says Olson. "We meet weekly to review promotion status and use the data in asset-liability committee meetings to drive pricing for both deposits and loans. The data warehouse is owned by the CFO at our organization, but control and design rest with the entire senior management team."

## Single Source of Truth

*Mick Olson describes TopLine Federal's journey to an updated data management structure:*

"We recognized that our core and various ancillary systems were too disparate to allow us to gain a real understanding of our members and our business without a centralized data warehouse, so we were early adopters of the OnApproach M360 solution. The marketing customer information file (MCIF) systems we'd had in place for marketing aggregated this data on a monthly basis, but they never contained the level of detail, or the near-real-time data, we deemed necessary to attain the level of analytical capability we envisioned for our future.

The M360 platform continues to evolve, and the fact that it runs on an in-house MS SQL Server environment gives us the flexibility to augment it with additional external data, build our own database objects and reporting structures, and connect it to any tool for further analysis and visualization. Once our warehouse was in place, we began to develop reports and dashboards, with a focus on actionable reporting and less focus on static historical reporting and corporate trivia.

We took the approach of first researching, and then implementing, the warehouse—with buy-in from the top level of management—CFO, CEO, and board of directors—and then we began to involve management, once we could demonstrate real-time reporting. Our first reports and dashboards were missing key elements the management team needed to make decisions for pricing and developing promotions.

As we learned more about the data and how it could help us predict participation and response rates, we continued to add new views and we developed a "daily pulse" self-service reporting tool in SQL Server Reporting Services (SSRS) that allows branch staff to view many of their key stats on a daily basis, see how these measure up against their goals, and stay on track each month. These reports run in a web browser and are therefore, easily delivered to a wide audience.

Excel is still the tool people are most familiar with here, but we're now able to create connections with various parameters within a workbook and allow the end user to pull lists or to populate pivot tables with data that meet specific requirements. This way, we can quickly accommodate ad-hoc requests and allow the user to refresh the data at any point in the future, without assistance. We are also improving or replacing many standalone MS Access databases that have been in use for years. Instead of having data silos with complicated and error-prone update procedures, we're able to point these at a central data source and control this "single source of truth" while still allowing departments to use forms and reports they're familiar with, and to add department-specific data elements or comments that they require.

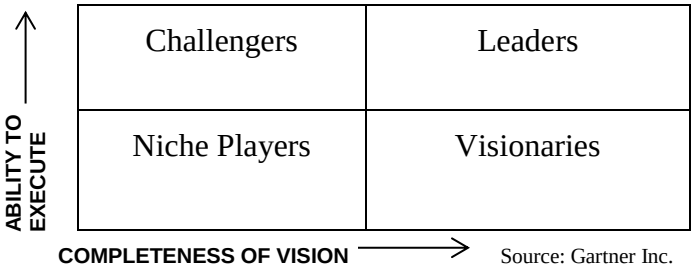
The daily reporting suite we developed gave insight to which products and promotions were most attractive to our members, and after several years of development we're now in the process of rewriting our daily reporting suite to include much more sophisticated visualization. As a result, the impact of promotions and pricing can be seen immediately—to a point where a new initiative, such as deposit or loan pricing, can be monitored daily and adjusted as needed with verifiable data. For example, credit card promotions can now be adjusted to target specific merchant codes by monitoring migration over time based on changes in member behavior triggered by rebates or other incentives."

Ent's current structure encompasses an enterprise analytics team led by a member of the senior management team, with three analysts and a two-person data warehouse team, says Leclerc. "We also have a handful of analysts with the SQL skills necessary to query the data warehouse. These analysts work in several departments, allowing them to provide self-service, on-demand analytics for their respective areas. "A decade ago," he continues, "we didn't have any formal structure for the credit union's data. Any data or reports for business or strategic decisions were generally pulled from our core on an ad-hoc basis." Then, about six years ago, Ent built its first data warehouse to replace an outdated database that finance used to help with monthly reporting. Through this process, the credit union formed a BI team—starting with two employees, then growing to three. Ten months ago, that team of three was split to form the enterprise analytics and data warehouse teams with two internal transfers from the finance area and one outside hire.

Kinecta's data management structure has remained relatively consistent since it was established, says Shah. Currently, the data/BI team includes the positions of data architect, solutions architect, BI developers, and the database administrator. The team reports to the director of data management strategy, who reports to the CIO. Recently, the credit union started a collaboration with a local university to aid with machine learning/artificial intelligence projects.

## Finding Tools and Resources

Gartner Inc. has published "magic quadrant" market research reports for about a decade that rely on proprietary qualitative data analysis to demonstrate market trends. Gartner rates vendors on two criteria: completeness of vision and ability to execute. Based on performance in these areas, vendor component scores lead to vendor positions in one of four quadrants: leaders, challengers, visionaries, and niche players.



Source: Gartner Inc.

Gartner redesigned its magic quadrant for BI and data analytics platforms in 2016, to reflect a shift toward more user-friendly systems. As described in its report, *"Magic Quadrant for Analytics and Business Intelligence Platforms"*: "Modern analytics and business intelligence platforms represent mainstream buying, with deployments increasingly cloud-based. Data and analytics leaders are upgrading traditional solutions, as well as expanding portfolios with new vendors as the market innovates on ease of use and augmented analytics.

### Evaluating Potential Platforms

Gartner defines five main use cases as important in analytics and BI platforms:

- **Agile centralized BI provisioning:** Supports an agile IT-enabled workflow, from data to centrally delivered and managed analytic content, using the self-contained data management capabilities of the platform.
- **Decentralized analytics:** Supports a workflow from data to self-service analytics, including those for individual business units and users.
- **Governed data discovery:** Supports a workflow from data to self-service analytics to system of record, IT-managed content with governance, reusability, and promotability of user-generated content to certified data and analytics content.
- **Original equipment manufacturer or embedded BI:** Supports a workflow from data to embedded BI content in a process or application.
- **Extranet deployment:** Supports a workflow similar to agile-centralized BI provisioning for the external customer or, in the public sector, citizen access to analytic content.

"Initially, much of the growth in the modern analytics and BI market was driven by business users, often through small purchases made by individuals or within business units," adds the report. "As this market has matured, however, IT has increasingly been driving (with the influence of business users) the expansion of these deployments as a way of broadening the reach of self-service analytics, but in a scalable way."

Dresner Advisory Services surveyed data analytics and BI users and shared results in the report, *"Analytics in 2018: Are You Ready?"* The top three features included:

- Range of regression models—from linear, logistic to nonlinear;
- Textbook statistical functions for descriptive statistics; and
- Hierarchical clustering, expectation maximization, k-means, and variants of self-organizing maps.

Credit union data experts agree that each organization will need to research and define its own sweet spot for necessary systems features and capabilities. "Tools and resources are a key consideration in data and analytics," says Lindberg. "The first and foremost thing to understand is that analytics is a computer-intensive process, so it requires robust server resources, particularly CPU and RAM. There are varying ways to accomplish this, both on-premise and through cloud implementations."

Wings Financial uses the Microsoft SQL Server stack for its database management system platform, along with data integration, reporting, and analysis services. "These are critical for our success," says Lindberg, "and we collect a lot of data. Efficient disk input/output is also important because of the volume of data. We use Tableau as our data visualization software, which has proven to be an exceptional investment. All employees have access to dashboards specific to their needs, with most dashboards providing updated analysis daily."

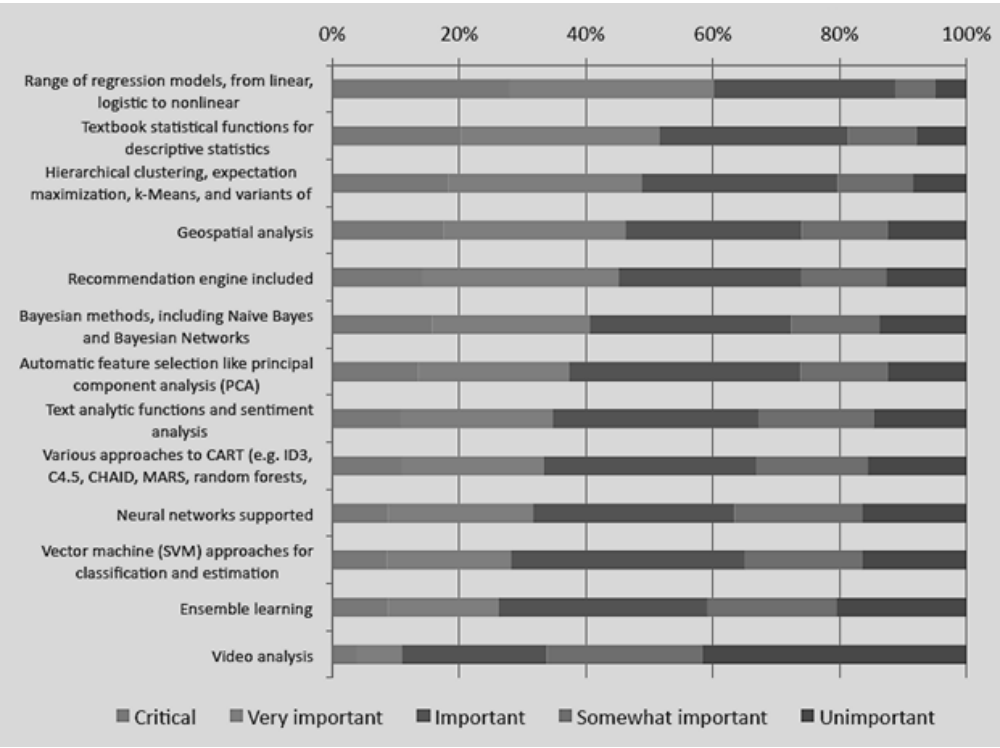
Wings Financial's key data management tools include:

- Microsoft SQL Server
- Microsoft SQL Management Studio
- Microsoft Visual Studio
- Microsoft Visual Studio Team Services (source control)
- Tableau Desktop (for dashboard creation)
- Monarch Report Explorer (for data manipulation)
- Track-It! (task management platform)
- Microsoft Visio (entity relationship diagrams, process flows, etc.)

Orange County's uses an SQL data warehouse, Microsoft Power BI, SQL Programmers, and BI Analysts. "We also recently hired a database administrator to handle the server, storage, and data load processes," says Thompson.

Ent is a Microsoft shop, says Leclerc, so it uses Microsoft SQL Server Management Studio, Microsoft Visual Studio, Microsoft Power BI and an SQL server in-house. At this point, the credit union is not outsourcing—all servers and data analytics/BI staff are in house.

Butler stresses that the data warehouse is just the start. "We were very fortunate to engage an intern from an area university to help us prepare for our adoption of the data warehouse," he explains. "We were then even more fortunate to hire her to be our first ever, data/financial analyst. We had a major resource need and we've a hit a home run on this key




Source: Dresner Advisory Services LLC

component. “We also realized prior to launch that we needed to determine our data analysis tools,” he adds. “This is a critical decision and there are multiple opinions and approaches, so the decision is *not* straight-forward. Our credit union landed on implementing the Microsoft stack of tools—Excel 2016 with the imbedded add-ins of PowerQuery and PowerPivot, as well as PowerBI. This has proven to be a wise choice, in large part because we have deep in-house experience in the Excel environment,” says Butler. “The new database tools in Excel 2016 PowerQuery and PowerPivot are very robust, and yet accessible to the business users that open the data in ways never available before.”

“The resources and tool selection varies based on the breadth of responsibilities of the data/BI team,” says Shah. At Kinecta, the data management/BI team covers areas of data modeling, solution architecture, database management, BI reporting, advanced analytics, and more recently machine learning. Its current tool inventory includes SQL Server (databases, SSAS, SSRS, T-SQL), Microsoft Power BI, Microsoft R Open, RStudio, and H2o.ai. “The selection of tools depends on the long-term data strategy, the overarching solutions you plan to deploy, costs, and manageability,” says Shah. “The tools should cover information management (single version of truth/data warehouse), BI reporting, self-service advanced analytics, machine learning, and predictive analytics.”

Olson says the human factor is a huge part of the equation. “Data expertise is critical because the basic design of the extractions from the core and ancillary systems are the basis of every piece of reporting,” he explains. “It’s very expensive to develop automated queries, and the process of revisiting what data you’re pulling, and rewriting the queries and redesigning the data store, can take a very long time to get them right.

But the systems must back the expertise, he adds. “A well-organized and robust data warehouse is critical from the beginning, because building onto an existing warehouse is difficult and expensive, and in many cases it forces a complete redevelopment of the warehouse. Miscalculating the capacity needed for transaction-level data—and the ability of the data warehouse to *process* that level of data—can be extremely costly in both the development and time lost in getting actionable reporting to the management team.” It’s critical that any organization understand where its data is stored and how it’s organized, he says. But credit unions must also have a clear understanding of procedures to be aware of where weaknesses lie in the data.

For example, says Olson, “if a loan servicer withdraws a loan from one system as part of the process and imports it into a new system, you may think your application volume is twice what it actually is. And unless you eliminate the redundancy, your conclusions about volume and efficiency will be incorrect. It’s also necessary to understand the process to determine profitability and return on investment correctly.”

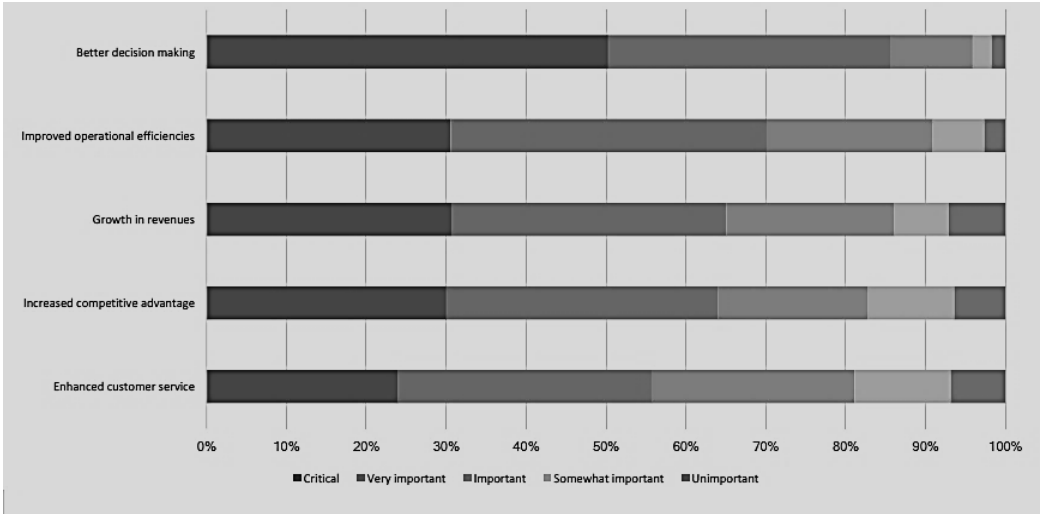
## Plans and Strategies

Part of the process of accessing data and making it actionable is strategically planning for its use, including understanding how data and BI flow into enterprise strategy. Furthermore, leaders who are responsible for enterprise strategy are informed by data, BI, and analytics, notes Lindberg. “At the end of the day, leaders who are engaged in setting and delivering on their strategy will choose to use information resources to help them achieve their goals and focus their strategy.”

According to Dresner Advisory Services, the top BI objective of surveyed organizations is to improve decision-making. Credit unions are making this a priority, too. Ohio HealthCare Federal has created a group called the Business Intelligence Group (BIG), which attempts to meet weekly, says Butler. Representatives from each business unit are invited—member services, lending, finance/accounting, operations, and marketing. This group identifies projects, determines priorities, and establishes teams for projects. The group also is grappling with the data governance component of the initiative, which he says has been another critical aspect of the team’s progress.

In the past at Orange County's, data management and insights have been more silo-based, with each business unit asking for its own reports and data, says Thompson. However, the data team is trying to become more enterprise-focused.

## Business Intelligence Objectives




Source: Dresner Advisory Services LLC

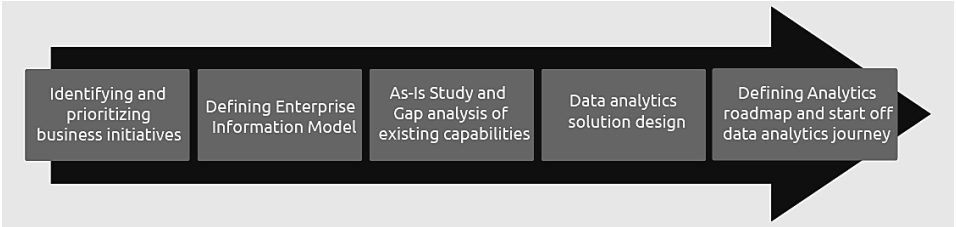
"To build our strategy, we're looking at member pain points to try and focus data use around removing member friction," says Thompson. "At the same time, we're building a data governance foundation to get buy-in from our executives and business units. This will help get a central foundation, resources, and enterprise terms that can be shared across the credit union. Also, by creating data domain owners, the business units become more involved in the *quality* of the data and decision-making process."

"At Wings, we see strategic leaders engaging the data team early on, when working toward creating or altering strategy," says Lindberg, "and during the more frequent conversations on tactics of achieving the goals aligned to the strategy."To support this, Wings Financial's data strategy board includes the CEO, the senior executives representing member experience, lending, finance and information systems, and vice presidents representing marketing, retail delivery, finance, and information services, who are responsible for guiding the strategic direction of data and analytics in the organization. "This also affords them the ownership of data practices within their purview," says Lindberg. "The experience we've seen at Wings proves that engaged leaders can, *and will*, change culture.

"Our analysts work with business leaders to identify specific and customized plans for data adoption within the business unit," he adds. "These plans are aligned to both corporate goals and strategies, and to the leaders' performance goals for the year. All deliverables for a specific business unit are considered for use in other business units, with the data team coming together to discuss and promote ways that information can be applied across business units."

The intent for TopLine is to drive actionable reporting and predictive analytics to grow profitability and member wallet share, says Olson. "Historical reporting is very useful, but it's often not actionable, whereas dashboards that monitor product mix, yield, and concentrations of risk are extremely valuable in driving results toward a target," he explains. "For example, if we want to increase our exposure to longer-term auto loans in B and C paper, we need to monitor results on a daily basis to adjust pricing or other incentives to drive the result. Historical reporting is often delivered too late to make adjustments during periods of peak production."

## The Strategic Journey of Data




Source: Capgemini

Ent is just now developing reports and information with a strategic intent in mind—expanding into new counties and using already-developed reports to track the results of that expansion. "We've been able to easily identify where the growth is coming from and in what products," says Leclerc. "Our cross-functional business development team uses this information to adjust our strategies in support of our member growth goals.

Outside of member growth, we're currently doing some data mining to analyze our indirect members as another strategic opportunity area. We'll use this data to develop an onboarding strategy to convert indirect members into engaged members."

In a Capgemini report for the utilities industry, author Ajay Verma discusses how it can be hard to know where to begin in the data strategy journey. Organizations are challenged to translate large volumes of new data into true, actionable intelligence, and to leverage the information gained from analysis to make decisions resulting in improved business, performance, service reliability and customer relationships. "Developing a roadmap is a key activity to sharpen the executive vision and inspire the organization to adopt a new analytics vision," says Verma. "Once the journey has started, each step will anchor back to benefits of additional insights to improve decisions and actions. Creating these insights does not complete the journey—they need to be monitored in order to fine tune analytical models, business processes, and applications. Regulatory requirements, technology, weather, demographics, and other influences are continuously evolving…. The analytics journey must also continue to evolve."

Data-related technologies—BI and artificial intelligence (AI)—are critical to the enterprise strategy, says Shah. "Several strategic objectives cannot be met without timely and reliable data in a consumable format." At Kinecta Federal, in addition to operational and management reporting, information gleaned from BI and AI is used to build various profitability models, key performance indicators (KPI) and dashboards, advanced analytics, pricing and risk models, machine learning models for product penetration and segmentation (and more, as business cases evolve), process automation, data provisioning for various regulatory agencies, and life-stage and transactional triggers. It's also applied toward a consolidated, dynamic 360° view of the members—to understand their transactions, behaviors, events, and channel preferences. "Integration of social media data will be the next logical step to get the full understanding of our members," says Shah. "All these elements are needed to run an efficient organization and have a true view of profitability."

## Toward the Ultimate Goal

Profitability is key to the success of implementing and promoting a data-driven culture, says Olson, because as credit unions become more effective in offering members attractive products, credit unions become more efficient, too. "Response rates increase and we spend less on marketing promotions and awareness because we're better able to target the message, which lowers our cost of acquisition for loan, deposit, and ancillary products."

Growth, profitability, and service to members are tied together, he says, and they all improve by delivering the products and pricing that are attractive to members. These are the goals of TopLine's data/BI effort. "Our ultimate goal is to provide value to our members," agrees Thompson. In addition, Orange County's is looking to leverage data to provide relevant content and opportunities, and to make more informed decisions.

Shah says Kinecta Federal is transitioning toward a member-centric design—where decisions are made based on data and tracked for performance management and improvement. The goal is to exploit data and see how data can help better serve the members, provide personalized experience and offerings, make their financial lives better, and manage risk.

Building deeper relationships with members is a common theme among the goals of data analytics/BI professionals and their credit unions. McKinsey & Company outlines four steps to effectively activate an organization's data toward this ultimate goal in its report, *"Analytics Comes of Age."* The four steps are:

1. **Data foundation:** Build a rich view of the customer. Just as a recipe does not come together until all the ingredients are combined, it is only when data is connected that it becomes ready to use.
2. **Decisioning:** Mine the data to act on the signals. Effective decisioning is based on repeated testing that validates and refines hypotheses and outcomes.
3. **Design:** Craft the right offers, messages, and experiences at speed. Understanding your customers and how to engage them counts for little without the content to actually deliver to them.
4. **Distribution:** Deliver experiences across platforms. Not all data-activation efforts are created equal. McKinsey & Co. recommends using a case-driven approach, maintaining a backlog of tests ranked by opportunity, quantifying the impact of each potential use case, and balancing it with the level of effort required to implement it.

Getting data monetization right requires significant effort, but it's becoming critical for staying ahead of traditional competitors and new disruptors, notes McKinsey & Co.

Butler says Ohio HealthCare Federal has attained numerous actionable results through its data analysis and BI strategy, including:

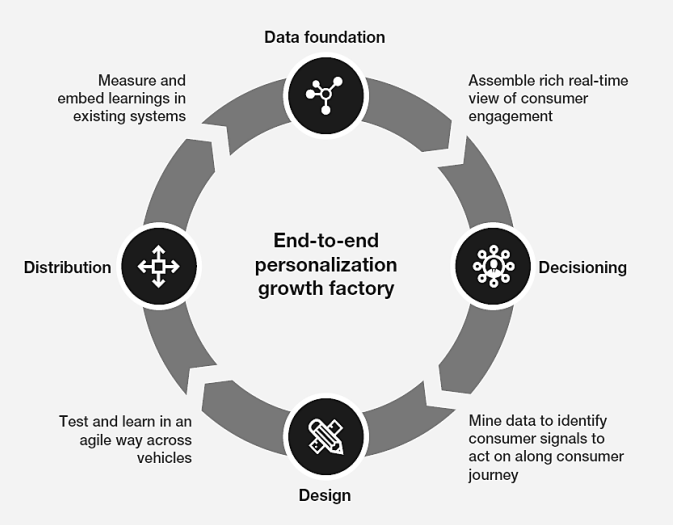
- Basic automation of member interactions;
- Development of loan officer KPIs;
- Understanding direct deposit activities by large employer groups; and
- Diving deep into member transaction mining for debit and credit purchases, ACH debits, and credits at a member and merchant level.

"This is a very exciting and, hopefully, rewarding endeavor to become more aware of our members through their transaction behaviors," says Butler. "We're making great progress, but we're on a steep learning curve and we have a long way to go."

"Our goal for analytics and the rest of the organization is to help our members' financial dreams come true," says Lindberg. "From a results standpoint, we aim at providing our members the ability to interact quickly, easily, and thoroughly, using whatever means they choose. And we desire to maintain the credit union difference—showing our members that we care for them, have their best interests in mind, and can help them through their life journeys, no matter what they have in front of them." Data play a big role in helping Wings Financial position products and services, understand membership behavior, and differentiate the credit union from the other financial institutions focused on profiting from the relationship, he adds. "We see data helping each area of business in better serving our members—in a way that's beneficial both to the individual member interacting with us in the moment, and the membership as a whole. On an individual basis, we should be able to continuously improve personalized messaging and product offerings relevant to individual needs."

Growth is a data analytics driver for Ent, says Leclerc. "At an organizational level, two of our strategic goals are around increasing credit union membership and deposits. We also want 'engaged members,' not just single-product members." Because of this, Ent's BI strategy going forward will be to leverage the data it has to drive strategic and tactical plans to achieve its goals. "As our enterprise analytics area matures, the organization will be more reliant on data analysis, and will use the data to support, or *drive*, key decisions," says Leclerc. "Another benefit is that business information will be widely available to all, rather than siloed within various systems. By making information available to all, there will be a higher level of knowledge across all areas of the organization. This will allow employees to be more aware and to make decisions that compliment other areas. As the old saying goes, 'knowledge is power.'"

### Building Deeper 1-to-1 Relationships




Source: McKinsey & Company

## Staffing the Data Machine

When it comes to the people who manage the data, each credit union has a unique organizational reporting and collaborating structure.

Data analytics often exists in the finance area, notes Olson, but must be supported by IT, because data security and resources from IT are indispensable. "Wherever the responsibility for data analytics resides, there must be an open door for all other areas to access the data and analytical resources without having to ask permission from a data gatekeeper," he says. "Access to ad-hoc data and data analysts that can generate reporting and draw conclusions from the data are imperative to gain buy-in from the entire management staff. "Without access," he adds, "various departments of the organization will seek out their own answers by reinstituting disparate databases or even Excel spreadsheets that are often manually maintained. This reintroduces data integrity concerns and inefficiency, which act to erase the gains sought in a 'single point of truth' initiative. Also, the ability for the entire management staff to influence what data are needed

in reporting and dashboards is equally as important to maintaining buy-in and support for the data warehouse."

There's no ideal answer to the ideal "space" for this team on the organizational chart, says Shah. It depends on the size of the organization and its BI/AI maturity level. "The BI team can start as part of a business, but as the maturity improves, it's best for BI teams to be differentiated from business or IT application development teams, as the responsibilities are very different," he explains. "BI teams' focus usually is on data management, business cases, strategy, data governance, analytics, and machine learning. A good BI team, though, needs an understanding of both business strategy and processes, and technology. And there's also an overlap with marketing. So the enterprise leaders must ensure that roles and responsibilities are understood and that the goals have a shared commitment across all parties."

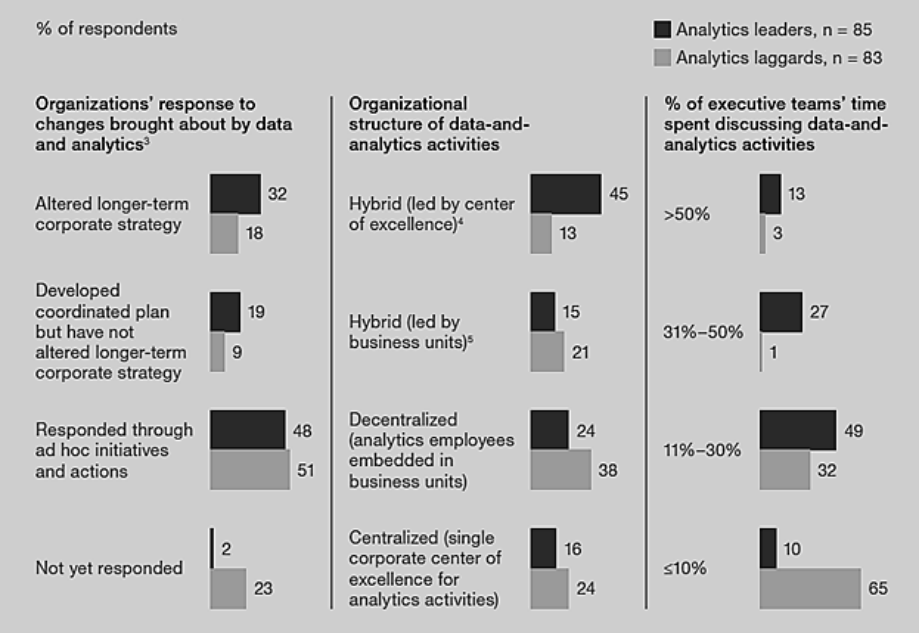
Analytics leaders, notes McKinsey & Co., differ from other companies in their data and analytics strategy, structure, and executive attention. Leaders tend to respond to changes through ad hoc initiatives and actions, and by altering longer-term corporate strategy. Their organizational structure tends to be a hybrid, but led by a "center of excellence." In true analytics leader organizations, a good portion of the organizations' executive time is spent discussing data and analytics activities.

Successful data and analytics programs require real commitment from business leaders, notes McKinsey & Co., along with a consistent message from senior leaders on the importance and priority of these efforts. "Overall, respondents report that senior management involvement in data and analytics activities is the number-one contributor to reaching their objectives. Respondents at analytics leader organizations are five times more likely than those at analytics laggards to say their executive teams spend more than 20% of their time at high-level meetings discussing their data-and-analytics activities."

For credit unions, the member focus plays a critical role, too, notes Thompson. "I don't know that I could pick one ideal space on the organizational chart for the analytics team, as it depends on the leadership in certain areas. But it has to revolve around the members. It should be seen as an enterprise endeavor and support all areas of the credit union. Ours is under the technology umbrella, which works well for us."

Leclerc feels the data team should function independently of other areas to allow the team to focus on all aspects of the organization. "A BI team, ideally, should be comprised with knowledge of all areas of the credit union," he explains. "Due to the technical aspects of data mining and data warehousing, there needs to be an IT influence within the team, but that doesn't mean the area has to, or should, reside in IT. We're seeing other large companies creating a 'chief data officer' role—whose sole purpose is to manage and drive the data and data analytics of the company."

## Analytics Leaders: Teams & Talent




Source: McKinsey & Company

Butler has a unique perspective among data/BI professionals. "I think I might be biased," he explains, "because I grew up in the finance side of credit unions. I believe firmly that if a credit union approaches this opportunity by leading with the finance group, it will have greater success." "In the not-so-distant past, data analytics required expensive environments and required expertise that most credit unions couldn't access," he adds. "This would be considered the 'legacy model' solution, where IT delivered the end product to the business users." "The new model is quite different," he adds, "because the data analytics tools are much easier, and can be implemented and embraced at the business user level without a high reliance on IT (the data warehouse foundation can be a key element for success). This would be considered 'self-

service BI,' which the finance group will find accessible and valuable."

Wings Financial leaders are still evaluating where the data team should reside in the organizational structure, says Lindberg. "Our discussions have generally focused on IT, finance, or member experience/operations. Because there's a reasonable argument for each of these business lines to own the data team, Wings Financial has opted to treat BI and analytics as an internal consulting team, which currently reports through IT, but is guided via our data strategy board." The data strategy board includes most of the credit union's senior executives and several key business units' vice presidents. This group helps direct the strategy of BI and analytics within the organization, says Lindberg, and is also responsible for guiding their business units in using data to better serve the members. "Our strategic analytics and member insights team currently has three main roles on the team—manager, data analytics business systems analyst, and data scientist," he says. "In addition to these roles we also have data science interns and an internal data practitioner program."

The analysts function like "solutions architects," says Lindberg, and have assigned relationships with a set of business units. Their responsibilities to these business units are to ideate, define, build, deliver, and adopt information solutions. "This relationship with the business unit leaders is key to the success of the data program at Wings," he says, "and the ability to quickly iterate through ideas with the business leaders helps build and reinforce trust in the solutions provided."

The team data scientist is responsible for helping the analysts—and, by extension, the organization—understand where advanced analytics applies in their business units. This is more of a specialty area that spends less time with the business leaders. The data team works as an "internal consulting" team, which allows them to work very closely with the business leadership in ensuring that information deliverables serve the membership and business units' needs. "The data team is then able to discuss, strategize, and deliver foundational elements that better serve the organization in ways that are specifically meaningful to the business unit and membership," he says. "We've found great success in this approach," adds Lindberg, "as it allows the data team to respond with agility, and allows for the senior leaders to each feel an ownership stake in the data team and information deliverables. Regardless of where the team actually falls in the hierarchy, it's critical that the team is allowed to function freely across department lines and deliver value where most needed."

## Conclusion: Data is an Organizational Asset

Each credit union must find its way to the best data approach for its unique needs. One principle is universal: data are indispensable and critical tools for the modern credit union.

"An organization must define the roles each department has in developing and using its data, and equality in ownership must be defined and supported by the most senior levels of management to maintain strategic alliance," says Olson. "Communication, education, and equal access to data are critically important to ensure all stakeholders are using the actionable data on a regular basis. The consistent use of the analytical outputs—by all members of management and staff—is the true test of the value of data analytics."

Shah agrees. "It's critical that building a data-minded organization must be a top-down approach, with support of the CEO, CIO, various business teams, and the board. Decisions should be made based on data. And outcomes should be measurable, so course correction is possible at the right time. "The data strategy should be in close alignment with the company's strategic plan," he adds, "and data should be treated as an organizational asset—as it can be the biggest differentiator and a competitive advantage factor."

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