sisense

INFUSE ANALYTICS EVERYWHERE

Three Steps to **Infusing Analytics**

Organizations of all kinds increasingly acknowledge that data and analytics play an important part in their growth and success.

According to a 2021 survey of big data and AI executives by strategic advisors NewVantage, 92% of organizations are continuing to increase investment toward being a data-driven organization. They know it's important because when we use data, our businesses perform better. McKinsey Global Institute concludes that companies are 23 times more likely to get new customers, six times more likely to retain existing customers, and 19 times more likely to be profitable when they use insights.

But presently, a significant proportion of organizations are neither making the most of their data nor fully leveraging the power of their analytics. In a report by Harvard Business Review Analytic Services (HBR), less than a quarter (24%) of total respondents rated their organization's effectiveness in using analyzed data above 7/10. That's a concerning finding, considering how important they acknowledge it is and how effective it can be.

These companies and their customers are simply not getting the full value that they could from their data and analytics. Infusing analytics into workflows and embedding analytics into products provide a solution to this problem. In this white paper, we explain why and how.

INDUSTRY REPORTS

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Why companies do not fully leverage analyzed data

Many factors contribute to companies not leveraging their data to the fullest, but typically, they fall into three main groups:

01 They're unable to access the necessary data from across their organization to gain comprehensive insights.

02 They've brought together the necessary data, but interaction with that data is limited. Lack of expertise or engagement with the data means that business users are dependent upon the IT team for answering any new questions. Often the IT team is then overwhelmed with requests for reports and information. This creates a bottleneck within the organization. Reports are no longer timely, and opportunities are missed as a result.

03 The data is there, and users can engage with it, but it is outside of their daily workflows. Instead of leveraging data to inform the next step of day-to-day operations, users are limited to high-level views. Despite the simplification of data visualization that dashboards provide, many nontechnical business users remain uncomfortable with engaging with them and find it cumbersome to step out of their usual workflow to gain insights from them. This discourages a significant proportion from doing so.

Organizations that experience any or all of these scenarios can optimize their data and maximize the impact of analytics by infusing their data within their workflows.

Analytic infusion within workflows means every decision is faster, more accurate, and simpler for every user. As a result, the adoption of analytics increases, user numbers increase, and more decisions become data-driven across the organization. This can have a huge impact on an organization's bottom line.

What is the path to infusion?

Each company has its own path to infused, or embedded, analytics. Sometimes, it can be driven by its customers requesting more data. It can be driven by the product team looking to differentiate and provide more value faster, or it could be driven by IT and engineering looking to maximize operational efficiency.

Usually, when analytics is embedded into one part of a product or within one business unit, it is not long before it gets infused across product features and business units. Accelerating this process requires an end-to-end analytics framework that makes it easier for teams to create a holistic picture of data across their organization and scale out to meet new analytics requests with agility and speed.

Generally, the path to deploying infused analytics has three main steps:

01 Removing access barriers to data and analytics

02 Reducing skillset gaps

03 Driving perpetual innovation (even in the most minor ways)

Let's look at what each involves and how to implement them.

Step 1: Remove access barriers to data and analytics with structured data access and governance

The most pressing issue for any organization is to ensure its people can easily get to the data and analytics that can benefit their performance. In the recent HBR report, 57% of respondents say that non-IT/data analyst employees are occasionally, rarely, or never able to quickly access the data they need, and only 16% say their organization's rank-and-file employees have access to analyzed data. That means a considerable amount of useful and potentially game-changing insights gets overlooked.

Embedding analytics overcomes the accessibility gap because you're no longer asking business users to be data scientists. Instead, you're taking data critical to their operations and putting it exactly where they're making decisions. Ensuring that data is engaging and interactive means you're no longer assuming the questions your end users will be asking. Rather, business users can use data to answer new questions as they arise, increasing operational efficiency. Achieving it requires a threefold approach.

First, connect all data. Second, integrate data security. Then, deploy.

Connect data

Ensure that your data and analytics platform can operate as a single source of truth, whether your data is in-application, on-premises, on the cloud, hybrid, live, or cached. Whether it's big, small, unstructured, or structured, you want to be confident that your platform can access, handle, manage, and analyze it all, wherever it is from and whatever format it takes. Ideally, your platform should be cloud agnostic: able to connect with any cloud computing service or cloud data platform, such as AWS, Snowflake, Microsoft Azure, and Google BigQuery. And your platform must have a wide range of data connectors, like Fivetran, integration with advanced analytics tools such as Amazon SageMaker, and an extensible framework that can scale as your data usage grows.

Many of our customers approach us with a challenge. They are frustrated with their current inability to get a

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holistic view of how each part of their business impacts another. Some of this may be due to the data being siloed in disparate databases, but more frequently, it is because the business users who understand the critical questions are unable to explore that data on their own. Repetitive sprints of fulfilling one-off analytics requests create bottlenecks in engineering workflows and result in delays in answering impactful

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questions. Sisense connects live to optimized cloud data warehouses with cloud-native services, or uses its high-performance analytics database, the ElastiCube, to bring disparate cached data sources together. Either way, end users can engage with the data in the way they're most comfortable, whether code-free or code-first.

Analytics technology has evolved, and continues to evolve, with the market. For instance, a few years ago, when cloud data warehouses were less frequently found as a part of customers' infrastructure, Sisense leveraged its ElastiCube to help customers create a holistic picture of their data across their organization. Now, as cloud data warehouses are being used by more and more of our customers, these customers increasingly want to fully leverage their optimized data warehouses for real-time analytics. To address this need, innovators like Sisense developed a wide range of live connectors to enable this to happen.

Secure data

Opening data to such wide access inevitably brings with it concerns about security. But if your platform operates as a single source of truth, robust governance of that platform addresses this issue by providing a comprehensive framework for strict and granular governance across the application and data sources. This governance allows users to leverage a shared infrastructure across their business units and customers and enables them to scale with confidence while keeping consumed resources to a minimum. It is a priority for Sisense and is built into our offering.

Now, rather than waiting for IT, users can connect to data in a secure and governed way to access the right data and not just pre-cleaned Excel sheets or tables that are hard to verify accuracy. For the analysts in the business, access wasn't an issue for cloud, on-premises, in app data. They understood the data landscape and knew every byte of data needed to be included.

Deploy data

This readies you to deploy with a continuous integration/continuous delivery (CI/CD) pipeline that can be performed to constantly report on, test, and improve the quality of your deployment using either a DevOps or site reliability engineering approach. With Sisense, for example, our API-first framework supports the capability to manage data connections and governance programmatically — migrating models between development and production environments as a part of CI/CD pipelines.

Step 2: Reduce information and skillset gaps

Having addressed the issues of access, security, and deployment, it's important to encourage adoption; otherwise you will neither get the full value from your analytics, nor optimize your ROI.

User adoption is a common pain point we hear from companies. When business users cannot ask their own questions about the data, it can lead to increased requests to the IT/engineering/data science teams that have the expertise to answer new questions. Such an increase in requests frequently leads to bottlenecks, which business users try to avoid by implementing workarounds — perhaps exporting the underlying data and trying to hack something together in Excel with creative pivot tables. At best, this leads to out-of-date information being leveraged to make critical decisions. At worst, the data is not from existing governance processes and could potentially lead to security issues.

One factor that contributes to these issues is that a lot of BI platforms have a very fixed view of who should interact with data and what that interaction should look like. But we have learned that one size fits nobody. Business users with zero programming experience should be just as successful in asking questions of the data in natural language as developers who are more comfortable in a code-first environment using SQL, Python, or R.

Analyze and explore engaging data, with or without code

Gartner analyst Andrew White predicted that only 20% of analytics projects will deliver business outcomes. We want to ensure that organizations are part of that 20%, and we want to significantly increase that proportion by offering engaging, explorable analytics so that all end users can answer their own complex questions more quickly.

This involves creating a low-code or no-code environment that enables self-service, drag and drop analytics that are usable for even the most nontechnical users. Then, by augmenting analytics with AI and machine learning (ML), users will have the capability to go beyond the dashboard and descriptive data visualizations. They can achieve prescriptive analytics that can make sense of any data with automatic insight and highlight the potential impact of these insights.

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Augmented analysis

With natural language generation, users no longer have to wonder what a visualization is telling them. Instead, we've already identified the key insights and cyclical patterns of the underlying

data so that the end user's next question is more informed. Natural language processing enables business users to ask that next question in plain language. No coding languages or new data models are required. Using features such as Sisense's AI-driven Explanations, end users are not only able to understand trends across their data but what factors are contributing to those trends. The more questions end users can answer on their own, the more data becomes a part of their decision-making process, ultimately moving right past any adoption problems and straight to actionable insights. And for those users with more technical understanding, they should also be able to explore data through rapid ad hoc analysis using SQL, R, or Python.

Plus, augmented analytics have forecasting capabilities that allow users to anticipate upcoming events and allocate resources for them with more confidence. Companies can take that a step further and infuse those insights directly into their end users' workflows, so that they have the right information just when they're making decisions. That's a powerful way of accelerating time to value.

Why infusing analytics accelerates adoption

Infusing analytics within workflows and applications is the fastest way to ensure the adoption of data as a part of the decision-making process. When data is a direct part of making decisions, these decisions are more accurate, better informed, more effective, and made more quickly. When business users can make more informed decisions, it is easier to recognize and measure the ROI and, ultimately, the value of the product.

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Step 3: Promote innovation

With the skills and information gap now filled, analytics become a dynamic engine for innovation, which is critical to the strategic goals of our customers. In the same way that organizations strive to make data-backed decisions internally, their customers seek to leverage their products to make informed decisions. Increasingly, organizations recognize that they have valuable data and are looking for ways to infuse that data into their product offering, so that their customers see value with each interaction and have confidence in the product offering. Achieving this involves embedding visualizations directly into applications; infusing actionable intelligence at the right place and the right time, every time; and empowering users to take action directly from the application, based on the insights they can glean from analytics. Such an integrated analytics experience automates multiple steps in a workflow that not only helps identify and create differentiated products and accelerate new product offerings, but also helps drive deeper customer engagement. Furthermore, this experience can be delivered with a customized look and feel to make it an attractive additional offering that businesses can provide their customers to make their products stickier and increase customer retention.

Embedding analytics within a product offering like this allows organizations to create a unique data experience for their customers. This product differentiation can be critical for establishing a market presence and becoming an industry leader. With Sisense's extensible and approachable framework, product teams can deliver that differentiation with minimal resources from their side, freeing up teams to focus on core product features instead of maintaining supplementary tools.

The best strategy for adopting infused analytics: Vendor partnership

Companies that are successful at infusing analytics use data to answer questions that impact their daily workflows. Data is not just being used

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to explain why something happened in the past; it is now an active part of the decision-making process. So, embedding analytics is undoubtedly one of the most valuable moves that organizations can make to drive growth and build a successful future. Nevertheless, we recognize that it is a big decision that requires careful thought and research, particularly in terms of whether to build it yourself or buy it from an expert vendor.

Doug Henschen, Vice President and Principal Analyst at Constellation Research, warns that, given today's drive to out-innovate the competition, there's almost always pressure to get to market quickly. Embedded analytics speed development by providing in-built functions that will work seamlessly with the rest of your application.

Mindful that everything from infrastructure to operating systems to desktop and mobile browsers will evolve, Henschen recommends that organizations buy their embedded analytics solution, rather than build it themselves. In his report on next-generation embedded analytics, he concedes that, if the list of potential embedded projects is short and the requirements are very simple, organizations could consider custom development without the benefit of an analytics platform. However, he advises that they should carefully weigh the functionality needed, development time, skill requirements, and ongoing upgrade and maintenance requirements that this places on any development team. Working with a vendor removes all those issues. It avoids the need to build data management, data query and data visualization features from scratch, and the embedded analytics vendor will maintain and upgrade these features. Plus, the choice to embed analytics enables organizations and their developers to focus on the most differentiating aspects of their software or service: the functionalities that are unique to their business.

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Doing this successfully requires a special relationship with a provider, and therefore the choice of vendor is crucial. Organizations must be confident that their analytics platform is more than just a provider and a tool. It is essential that an analytics provider truly understands why and how analytics can best benefit its customers, so that customers can trust them. To that end, an analytics provider should be a strategic partner whose growing impact goes hand in hand with the customer's growth.

The Sisense difference

Sisense's extensible framework makes it easy for analytics to complement existing workflows and give organizations a foundation to continuously build upon. Infusing analytics into an application isn't really a destination; it's more of a process. As our customers' products evolve, and as the needs of their customers change, the underlying analytics framework needs to be flexible enough to be a part of that evolution. Sisense makes it easy for end users to focus on the development of their core product, by leveraging our BI framework as a tool for innovation and product differentiation at scale.

That means development teams do not need to start from scratch each time there is a new product request. In practice, our customers can start by using iFrames to embed analytics within their applications. Then, using Sisense's Usage Analytics, they can track how their customers interact with the data. With a better understanding of which data is most important to customers, they may begin to leverage either our Embed SDK or move beyond iFrames entirely with our Sisense JavaScript Library. With our Embed SDK, Sisense customers can start to blur the lines between their own application and embedded analytics. With the Sisense JavaScript Library, customers can retain all of the interconnectivity and engagement that users have come to expect from Sisense while creating a completely customized experience for their end users.

Sisense even allows for a bidirectional flow of information. Parameters from the source application can impact the way analytics are delivered in the application. Likewise, as users engage with different subsets of data, those subsets can be passed along as data payloads to the application to jump-start the next steps in the workflow.

How embedding analytics helps make everything come up roses

Bloom & Wild delights customers and streamlines operational performance

Bloom & Wild is Europe's largest and fastest-growing online flower delivery and gifting platform.

In the floristry business, inventory, namely flowers, must be picked and packed at the perfect time, with reliable, calculated forecasting to minimize waste. To maximize operational efficiency throughout the company, Bloom & Wild turned to Sisense to supercharge its data analysis.

Bloom & Wild quickly expanded the number of users on the platform from four to close to 60. Now, nearly everyone at the company accesses Sisense regularly. The operations team uses Sisense to track stock levels and successful deliveries and to anticipate future delivery orders and match the supply required. The marketing team tracks email performance, website traffic, and inbound customer traffic. The finance team also tracks its core metrics through Sisense, while the development team keeps an eye on performance related to changes it makes to the website. And the customer delight team examines customer queries to constantly improve its service. The ability to combine and track multiple data sources intuitively fits perfectly for Bloom & Wild's wide range of uses.

Infusing Sisense as a part of its critical operations has allowed Bloom & Wild to have confidence in how it allocates resources for flower deliveries, especially on what it anticipates will be the busiest days of the year, like Valentine's Day and Mother's Day. Teams leverage real-time data to make agile decisions as they handle ever-changing conditions, such as those caused by a massive unseasonal snowstorm during Mother's Day 2018 in the U.K. Analytics enabled employees to track delivery data in a real-time Sisense dashboard and use those insights to take immediate action that ensured every mother received her flowers.

Bloom & Wild also embeds its analytics dashboards to share with suppliers. This enables the company to automatically give suppliers a view into its system and explain what deliveries look like for the weeks ahead. For Bloom & Wild, having the right information, at the right time, means all the difference for its bottom line.

SaaS application upgrade

CTSI-Global tracks shipping trends and empowers customers

CTSI-Global is the world's largest privately held freight bill audit and payment services provider and a leading global provider of BI, transportation management systems, and supply chain consulting services.

The company processes millions of freight invoices each day, amounting to billions of records for thousands of users across customers worldwide. That's a considerable volume of data containing a significant amount of inherent value. No surprise, therefore, that its customers are interested in reporting and analyzing it, and to satisfy this interest, it offers white-labeled Sisense embedded in its SaaS applications as its analytics offering.

CTSI-Global's industry-leading business intelligence solution enables clients to consume insights from out-of-the-box analytics and empowers end users to build their own metrics on their centralized data. Every new client at CTSI-Global now subscribes to its embedded analytics offering.

CTSI-Global's success has been built on agile growth, involving continuous iteration and expansion. The company went to market quickly, in just two months, and has continued to develop, refine, and improve its offering over time as it incorporated learnings from the field. It scaled as needed by tracking and monitoring resource utilization and usage analytics, driven by Sisense architecture to support growing customer needs seamlessly.

The company then empowered clients with a self-service solution, letting them build and design their own dashboards, reaching time-to-value faster. CTSI-Global helped clients close the insights-to-action gap by embedding white-labeled Sisense analytics using iFrames within its client applications. It provided this key point of differentiation by leveraging Sisense to support agile dashboard development without the need for predefined queries or pre-aggregated views; ad hoc data exploration in all directions; data model reuse across use cases; and an overall ease of use that empowers even nontechnical users.

This exemplifies what success looks like with infused analytics. CTSI-Global created product differentiation by infusing analytics within its workflows and embedding analytics within its product.

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Infused analytics have enabled the company to stand out and become a market leader, ultimately increasing its win rate by 50%.

It typifies how fast infused analytics can be rolled out to market, and the power of partnership. Just one person at CTSI-Global was responsible for the initial implementation of Sisense in its platform. Subsequently, the company deployed Sisense analytics to 9,000 users. This continues to scale with ease, and now it is widely used throughout the company and by customers. Such fast and widespread adoption testifies to the capabilities of the Sisense framework and the partnership with the Sisense support team that advances, streamlines, and assures CTSI-Global's success.

Why infused analytics accelerate growth

Infused analytics can turbocharge a company's growth. Dashboards will always have a place and be useful, but infusion complements product development and innovation so naturally that companies will be unable to avoid it. In general, adding analytics to products is a surefire way of achieving some level of differentiation and creating new revenue streams.

Sisense's extensible framework means that companies can deliver that product differentiation faster, by customizing how data and analytics complement the existing workflows of their applications at scale. Our BI framework supports companies' core product innovation, ultimately minimizing any technical debt, rather than being yet another product that engineering teams need to maintain. And, with a focus on true strategic partnership, Sisense backs every customer with a team, including a dedicated customer success manager, that collaborates to ensure customers' success by infusing actionable analytics into their applications.

As organizations try to make it easier for their end users to recognize measurable value from their product offerings, infused analytics allow them to deliver a customized experience quickly and at scale. Furthermore, infused analytics enable them to continue to iterate on their implementation, building upon their existing foundations so that they can innovate and scale up for future success.

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NEXT STEP

See Sisense Demo