Microsoft

Analytics Lessons Learned

How five companies increased their data value with unified analytics solutions

Content

Introduction

Organizations need a modern analytics solution to fuel and uncover previously hidden business insights in order to stay competitive. Businesses, governments, and individuals rely on data analytics to set the right goals and make swift, informed decisions for improvement and optimization.

However, many organizations face several obstacles in extracting timely and accurate insights. Without a single source of truth for their data, they store duplicate copies of the same data and spend excessive time and effort trying to govern, move, and transform it for use. On top of that, many companies have invested in multiple analytics solutions and services from different vendors, which requires their IT teams to manage the complex task of integrating these solutions to work together.

This ad-hoc approach to analytics often results in data silos and disparate solutions. This makes it harder to use AI for predictive analytics, which relies on a comprehensive and timely view of all of the organization's data to be effective. The result is that many organizations find themselves maintaining resource-intensive systems that don't always deliver the best results for decision making. Additionally, running analytics tends to be a highly technical process that only a few skilled personnel can handle. This shuts other teams out of the process and creates a workflow bottleneck.

Integrated cloud analytics platforms like Microsoft Fabric are becoming indispensable in overcoming these challenges. Built on a foundation of software as a service, Fabric provides a unified analytics experience that seamlessly combines Data Engineering, ETL, data science, data warehousing, real-time analytics, and reporting in a single, cloud-based platform. These experiences are built on top of OneLake, an open and governed data lake that eliminates data silos by providing a single source of truth. Fabric also offers self-serve tools designed for non-technical employees, making it easier for more teams to engage with analytics tasks like data visualization and reporting independently.

Through digital transformation and the use of intelligent applications, your organization can:

- Create personalized customer experiences that grow satisfaction and loyalty.
- Improve employee experiences and cultivate a more engaged workforce.
- Drive intelligent operations that enhance productivity and optimize resources.
- Accelerate innovation with products that enable real-time insights.

Additionally, Fabric is purpose-built for AI and predictive analytics. Used together with Azure Databricks—a cloud platform for processing, storing, and modeling datasets—Fabric helps businesses simplify and enhance their journey into the era of AI.

To help you understand how unified cloud analytics can help you and your business, this e-book will cover five different analytics use cases. These are based on practical, real-world scenarios, where global organizations adopted unified analytics solutions to help their teams uncover new insights and explore data in a scalable, secure, and timely manner.

Use case 1

Milliman increases access to data to enable advanced analytics

The company

Global financial services firm Milliman partners with clients in the insurance industry to navigate emerging risks and enhance financial security. This collaboration helps ensure that the millions of people served by Milliman's clients can confidently embrace the present while planning for the future. Insurance companies constantly manage and mitigate risks and ensure stability through economic downturns and disasters. Such events can significantly impact an insurer's financial standing if not accounted for in their financial modeling.

Actuaries play a crucial role in this sector. They're the experts who employ probability, mathematics, and extensive data analysis to comprehend, predict, and project risks. Insurers rely heavily on the expertise and skills of these professionals to maintain smooth operations and keep their businesses solvent.

Business challenges

Managing risk in the life insurance industry is a complex task. Insurers may rely on legacy systems that are often not integrated within modern data infrastructures, which creates challenges in constructing an enterprise data warehouse.

Milliman, found that enabling actuaries to work closely with data and develop models accelerates delivery and enhances quality. However, these data manipulations are highly complex, making it challenging for IT teams to support the needs of actuaries—particularly if they're are dispersed geographically. Moreover, given that actuarial teams are required by law to report accurate information to regulatory bodies and analysts, they require tools capable of analyzing terabytes of data swiftly and reliably.

Requirements

To address these challenges, the company sought to empower its actuaries and clients with a modern data analytics platform. The goal was to amalgamate complex data platform components to create a tailored solution, allowing actuaries to develop custom data pipelines for clients and generate analytics independently of IT intervention. However, developing this type of democratized data platform could have extended the company's team beyond their expertise in actuarial software and contributed to the problem of siloed data. Milliman was already using Microsoft Power BI for analytics and reporting, and the company was keen to use this tool in any new analytics solution.

Solution review

Recognizing the importance of a cohesive infrastructure and the desire to maintain Power BI as a focal point, Milliman adopted a gradual approach to implementing Microsoft Fabric. This decision effectively addressed various challenges the company and its clients encountered. For instance, while Milliman already offered Power BI Embedded, integrating Power BI reporting directly against OneLake data has significantly increased data availability and facilitated much faster access. OneLake in Fabric enhances reporting efficiency by removing direct query limitations and offering import mode performance with Direct Lake mode, which provides the ability to analyze and parse large data volumes within OneLake directly in Power BI.

Actuaries can now perform advanced analytics by embedding notebooks alongside Power BI. This integration with GitHub for version control allows for a seamless combination with Milliman's existing actuarial models.

Outcome

Internally, Milliman stands to substantially benefit from using Fabric. Integrating all services around a single data lake within OneLake has helped reduce duplicate data, decreasing latency and costs. Milliman's custom data gateway facilitates data movement between customer storage and its Azure environments. Using OneLake in Fabric, Milliman can share data with clients under a unified security model.

Furthermore, Fabric offers financial advantages, such as paying once for shared capacity across workloads, simplified management, and lower costs. Plus, by using the Data Factory capabilities within Fabric, Milliman can continue to use its current data pipelines while benefiting from new capabilities, avoiding the need for costly migration of complex processes.

As Milliman continues to explore the full range of benefits Fabric offers for its teams and clients, the company's leadership is already looking ahead. Fabric is poised to be a key component in Milliman's data transformation journey with AI to help safeguard people's health and financial well-being globally.

Solutions:

- Microsoft Fabric
- Azure Data Factory
- Azure Synapse Analytics
- Power BI

Results:

- Reduced data duplication
- Faster access to data
- Non-technical users empowered to use advanced analytics

Read the full customer story >

"Microsoft Fabric has the potential to be the vehicle for Milliman Integrate's data transformation and data platform that we can confidently market to our clients."

Tom Peplow, Principal and Senior Director of Technology Strategy for Life Technology Solutions, Milliman

Use case 2

Epiroc adopts AI capabilities to meet the rising demand for quality and consistency

The company

A pioneer in innovation and a market leader, Epiroc has been shaping the construction and mining industries since its inception in 1873. Today, it's a global leader, offering advanced equipment, tools, and services with manufacturing facilities spread across five continents.

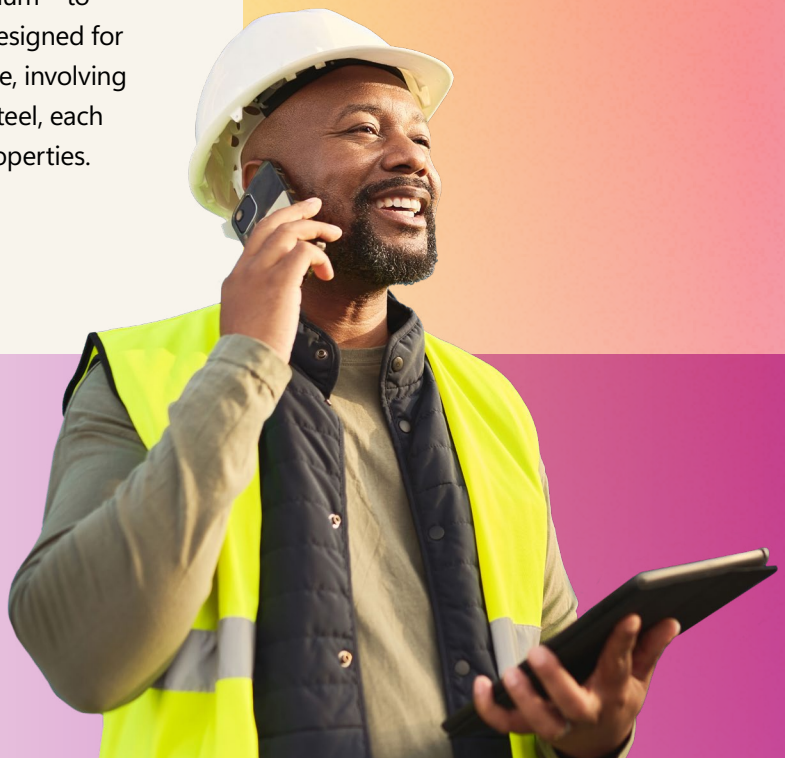
The company's manufacturing process involves sourcing steel for its drill steel and other tools from various locations. This steel undergoes a sophisticated heat treatment process to achieve the necessary strength, hardness, and flexibility. Iron is the main component of steel but is combined with other elements—such as metallurgical coal (carbon), manganese, cobalt, nickel, and chromium—to produce steel with varied properties designed for specific usages. The process is intricate, involving more than 3,500 different grades of steel, each with unique physical and chemical properties.

Business challenges

Epiroc faced challenges in maintaining steel quality consistency across its global manufacturing facilities. This consistency is crucial for various tool types and equipment parts, impacting everything from customer satisfaction to waste management and safety. While the company was amassing vast amounts of data at its locations, it lacked an effective method to use this data fully. This gap led to inefficiencies, redundancies, and occasionally, quality issues, resulting in equipment returns from customers. It also hindered the company's ability to gain precise insights into its operations—a key aspect of its continuous improvement and innovation journey.

Requirements

Epiroc aimed for a centralized solution to enable all its manufacturing sites to fine-tune the manufacturing process for optimal quality. This solution would provide a means to identify and address potential issues proactively and could adapt seamlessly as the company expands and evolves. Epiroc recognized the critical role of AI and machine learning in empowering the organization to make informed decisions on a company-wide scale.



Solution review

Epiroc's existing implementation of Microsoft Azure made it a straightforward choice to employ **Azure Machine Learning**, **Azure Data Factory**, and **Azure Databricks** for a solution tailored to their needs for precision and scalability. Collaborating with Sweden's Microsoft Customer Success Team further bolstered Epiroc's confidence. The team provided insights on Azure Machine Learning and offered guidance on setting up an AI factory, ensuring the implementation of best practices.

The AI factory adopted **Microsoft Intelligent Data Platform** services including Azure Machine Learning, **Power BI**, and Azure Data Factory to create a modern data architecture and data lake design that could support data mesh. Epiroc also partnered with Molnbolaget, a Microsoft Cloud Partner Program member, to help the company swiftly set up its secure AI factory on Azure in just 60 hours. Within six weeks, the team was able to develop a modern data architecture and craft machine learning models specifically for the heat treatment process, integrating them into an end-to-end pipeline within the AI factory.

Outcome

With the integration of machine learning models, Epiroc has streamlined the process of establishing critical parameters and rolling out new AI models, making it easier to manage specific variables and control process flows. This has enhanced has enhanced the prediction of steel density, hardness, and flexibility for their rock drilling tools under various conditions, allowing Epiroc to determine optimal tolerance levels more precisely to avoid structural fatigue or failure. The result has been improved quality control in manufacturing across all Epiroc locations worldwide, paving the way for increased productivity and efficiency.

Thanks to this new solution, Epiroc is achieving its consistent steel quality and waste reduction goals. The company has significantly improved material quality using Azure Machine Learning and predictive AI, leading to a 30% decrease in customer rejections and product returns. Fewer rejections mean the company doesn't have to make as many trips back to pick up unwanted deliveries, translating into considerable time and cost savings. Meanwhile, the company's customers are more satisfied knowing that their steel is manufactured with the most consistent, high-quality standards.

Solutions:

- Microsoft Intelligent Data Platform
- Azure Data Factory
- Azure Databricks
- Azure Machine Learning

Results:

- 30% reduction in customer rejections and product returns
- AI factory set up in 60 hours
- Machine learning models created in just six weeks

Read the full customer story >

"Having the ability to analyze all of that data in our production process and our research and design will help us to outperform competition, accelerate innovation, and adapt to the needs and priorities of our customers."

Peter Malmberg, Vice President of Digitization, Epiroc

Use case 3

Jacobs Solutions Inc. streamlines data management to accelerate solutions

The company

Headquartered in Dallas, Jacobs Solutions Inc. is dedicated to building a more connected and sustainable world through its cutting-edge engineering solutions. Jacobs stands out for its innovative approach, covering a broad spectrum of sectors including advanced manufacturing, infrastructure, health, and life sciences. With a global team of over 60,000 employees across 50 countries, the company tackles a wide array of projects from national security and space exploration to urban transit and water management, showcasing its versatility and commitment to diverse fields.

Business challenges

As a global solutions provider with a diverse clientele, Jacobs encounters the significant challenge of ensuring certainty in all its projects and programs. One of the initial hurdles the company faced was the dispersion of project data across various platforms, including APIs, data lakes, network storage, and databases. This fragmentation made it challenging to quickly and efficiently develop dashboards and reports, as developers had to merge numerous complex and time-consuming steps.

Requirements

Jacobs recognized the need to shift its strategy from starting from scratch to adopting a streamlined, scalable, end-to-end platform to fast-track the development of its solutions. As an existing enterprise customer of Microsoft and an active user of Azure, it was a logical step for Jacobs to explore Power BI and the broader Microsoft Intelligent Data Platform.

Solution review

The company's leadership not only recognized the scalability of Power BI, but they also saw an opportunity with Power BI Embedded to revolutionize its customer solutions, allowing them to develop valuable self-service BI solutions.

This led to the creation of Alluvial, Jacobs's new end-to-end platform, which marked a pivotal shift in the company's approach to data and AI. More than just a tool, Alluvial is a strategic initiative placing data and AI at the heart of Jacobs's operations—transforming solution delivery.

Jacobs used Microsoft Fabric to provide the scalability and power needed for Alluvial. Operating on a robust lakehouse architecture, the platform uses Fabric for seamless data management and advanced AI, with each project using OneLake and Synapse Data Engineering.

Using OneLake also helped Jacobs enhance its capability to handle large semi-structured data, while Azure Synapse Analytics helps simplify data materialization, whether it's on-premises or cloud-based.

Outcome

Jacobs has successfully used Alluvial to create an impressive range of client solutions. This includes everything from financial analytics and performance metrics to harnessing real-time IoT data.
The combination of Alluvial and Fabric has proven highly effective, allowing Jacobs to offer a diverse array of solutions to meet the unique needs of their clients.

For example, the Financial Planning and Accounting team has developed a competitive analysis dashboard within Jacobs. This tool combines market data and insights from both Jacobs and its peers, enabling users to comment on data and contribute to collective intelligence. This approach aids analysts and stakeholders in making more informed predictions, shifting their focus from merely gathering metrics to making data-driven decisions.

Alluvial is crucial in managing and delivering global insights for massive infrastructure projects. A notable feature of Alluvial is SIFT (Software for Intelligent Filtering and Transformation), which integrates design data into a Power BI data model. This enables the creation of an immersive 3D view with Power BI controls, offering a visual representation of the project's vision. This level of support and innovation is what makes Alluvial an invaluable asset to Jacobs and its diverse range of clients.

Solutions:

- Microsoft Fabric
- Azure Data Lake
- Azure Synapse Analytics
- OneLake
- Power BI

Results:

- Improved ability to tailor solutions for customers
- Greater access to collective intelligence
- Reduced IT overhead

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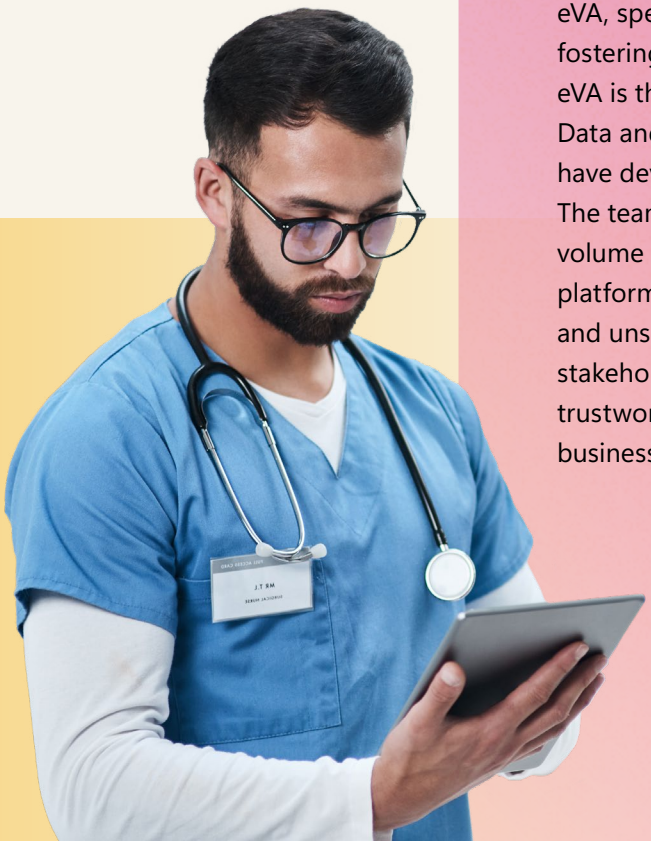
Use case 4

ZEISS Group breaks down data silos to become data driven

The company

Since its inception in 1846, ZEISS Group has consistently pushed the boundaries of what's possible, dedicating itself to pioneering innovative optical solutions. This Germany-based company has significantly contributed to various sectors, including automotive, mechanical engineering, biomedical research, and medical technology.

The heart of the company's mission is to enhance the clarity and quality of vision for millions of people. This includes helping prevent car accidents with advanced optics in automotive parts and developing lenses for medical devices and mirrors for the semiconductor industry. Its array of products and digital services fuels the imagination and drives innovation among its diverse customer base.



Business challenges

Recognizing the rapid evolution of technology and customer needs, ZEISS Group identified a pressing requirement for a modern analytics solution to keep pace with its innovative product development and digital services. To sharpen its edge in optics innovation, the company needed to streamline its analytics processes and provide internal teams with seamless access to data to enable smarter, customer-focused decision making.

A key aspect of this strategy was sharing information across various teams while ensuring a secure, role-specific environment. Faced with the challenge of utilizing its extensive and diverse data more effectively, ZEISS Group sought to overcome the limitations posed by increasing data silos and work from a unified data source for all its analytics workflows.

Requirements

When ZEISS Group considered various solutions, it prioritized enhancing AI usage while focusing on certain key technical goals. These included advancing its enterprise DATA Analytics platform, eVA, speeding up its complete data lifecycle, and fostering business growth through AI and analytics. eVA is the Data Mesh platform that ZEISS Group's Data and Analytics Platform and Engineering team have developed in collaboration with Microsoft. The team aimed to incorporate a substantial volume of relevant ZEISS Group data into this platform, including structured, semi-structured, and unstructured formats. This would enable stakeholders to obtain smarter, quicker, and more trustworthy insights, turning data into significant business value.

Solution review

ZEISS Group has a longstanding partnership with Microsoft, using a range of Microsoft technologies such as Microsoft 365, Power BI, and Azure Synapse Analytics for data connectivity and analysis.

Building on this familiarity with Azure analytics tools, the company eagerly participated in the private preview of Microsoft Fabric to help enhance its AI capabilities and integrate various services like Azure Data Factory, Azure Synapse Analytics, and Power BI. The company quickly recognized that Fabric was a natural next step in its data mesh journey, offering a comprehensive analytics solution on one platform.

Outcome

Using Fabric has allowed ZEISS Group to amalgamate all its business data, in any format, eliminating the need for data duplication and additional infrastructure maintenance. As ZEISS Group continues to develop eVA and expand its use of Fabric, the platform's potential for transforming large and complex data transformations is becoming increasingly evident. With a focus on data sharing, eVA, powered by Fabric on Azure, is set to provide a robust and trusted analytics solution, facilitating data accessibility across the company's various business units. This integration enables ZEISS Group to drive use-case-specific analytics, streamlining the creation of new data products and services that align closely with customer needs.

Solutions:

- Microsoft Fabric
- Azure Data Factory
- Azure Data Lake Storage
- Azure Synapse Analytics
- Power BI

Results:

- Improved ability to share data
- Elimination of duplicate data
- Self-service analytics capabilities

Read the full customer story >

"Microsoft Fabric helps fuel our company's collective imagination. It will allow us to be smarter and insight-driven when creating and enhancing our data products, while also increasing the speed with which we can bring these offerings to our stakeholders."

Daniel Gruner, Head of Business Data Enablement, ZEISS Group

Use case 5

Belfius improves deployment time for machine learning features

The company

Providing an array of banking and insurance products, Belfius caters to a diverse clientele, including retail customers, small and medium-sized enterprises, public institutions, non-profit organizations, and large corporations. Customer satisfaction is paramount, which is reflected in the company's dedication to offering products and solutions that thoughtfully consider and balance the needs of all stakeholders. Belfius is focused on immediate gains and committed to creating lasting value for its customers, the company, and the wider community and environment.

Business challenges

The company's data scientists often duplicated efforts without a comprehensive view of its features, rewriting the same code for different data models. The lack of versioning control and a search function further compounded the issue, extending the coding process and making it difficult for the bank to respond to new opportunities swiftly. Belfius wanted to establish consistency across its operational models and training processes by implementing a uniform feature pipeline that could be used effectively in both areas.

Requirements

Belfius saw the limitations of its systems and understood it needed a more harmonized platform for scaling its AI and machine learning capabilities. The bank had already been using AI tools to assess risk and detect unusual behaviors.

Additionally, Belfius had begun transitioning critical functions to the cloud, driven by a desire to meet the evolving needs of its customers. The company wanted to build a cloud-based infrastructure that could facilitate the dynamic application of AI and machine learning while adhering to the strict privacy, security, and compliance standards that are essential in the financial industry.

Solution review

Belfius used the Microsoft Intelligent Data Platform to achieve its goal, incorporating Azure Machine Learning, Azure Synapse Analytics, and Azure Databricks. As an early adopter, Belfius tapped into the Azure Machine Learning managed feature store—then in public preview—to streamline the operationalization of machine learning features across the entire operations workflow.

The managed feature store significantly enhances agility in model building, allowing users to discover and repurpose features so they don't have to start from scratch each time. It also fosters faster experimentation through the support of local development and testing of new features. Ensuring consistent feature definitions across the organization increases the reliability of machine learning models and facilitates versioning—a vision Belfius had from the start. With the ability to reuse features and the system-managed materialization and monitoring, the feature store also offers a cost-saving advantage.

Outcome

Belfius has identified two primary applications for its innovative solution—enhancing fraud detection and strengthening anti-money laundering efforts. For fraud detection, the online feature store enables fast access to essential data for calculating fraud risk scores. With the future implementation of real-time scoring via the online feature store, the insurance arm anticipates detecting fraudulent claims in mere minutes. Belfius is also set on developing more models to boost efficiency further, adhere to rigorous regulatory demands, and provide a more personalized service to customers.

Every year, Belfius Bank scrutinizes hundreds of millions of transactions to identify potential money laundering activities, generating alerts for suspicious transactions. Machine learning models are then employed to evaluate these alerts, assigning risk scores that allow analysts to prioritize high-risk alerts while automatically dismissing false positives.

Solutions:

- Microsoft Intelligent Data Platform
- Azure Databricks
- Azure Machine Learning
- Azure Synapse Analytics

Results:

- Enhanced collaboration between data scientists
- Elimination of complexity with setting up and managing features
- Ability to focus on creating new features instead of waiting for data engineering

Read the full customer story >

"We want our data scientists to focus on creating transformative features rather than waiting for data engineering. We're excited to provide them best practices and standardized processes across the company on our new corporate data platform."

Thibaut Roelandt, Lead Engineer for the Central AI Team, Belfius

Next steps

Epiroc, Jacobs, Milliman, ZEISS Group, and Belfius are just a few of the many businesses that have launched their unified analytics journeys. Today, more organizations recognize the benefits of leaning into integrated analytics to sharpen their competitive edge and foster growth.

Empowering teams with integrated, democratized analytics tools—and using a single source of truth for data—is critical to ensure they can collaborate, discover, and innovate using data analytics. Fabric offers a comprehensive analytics platform service that enables businesses to maximize their collective intelligence and increase the value of their data. Plus, when used with Azure Databricks, organizations get an added lift to their AI and machine learning capabilities, delivering even more value to insights and accelerating business value from data.

Step into the world of integrated analytics

Try Fabric for free >

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