



RuleX

The all-in-one **decision intelligence** platform





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The background of the entire image is a photograph of a modern city skyline at sunset. The sky is a mix of orange, yellow, and blue. Several tall, glass-clad skyscrapers are visible, their windows reflecting the light. In the foreground, there are some lower buildings and trees. Overlaid on the right side of the image is a large, dark blue geometric shape composed of several triangles and polygons, creating a sense of depth and modernity.

Rulex was recognized as a **Decision Intelligence Platform** in the 2024 Gartner® *Market Guide for Decision Intelligence Platforms*.

Gartner, Market Guide for Decision Intelligence Platforms, Erick Brethenoux, Pieter den Hamer, David Pidsley, Alys Woodward, Raghvender Bhati, Abed Ajraou, 18 July 2024.

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Rulex Platform, the perfect fit for your business

At Rulex, we believe that people make their best decisions when they can rely on trustworthy data and apply their domain expertise through intuitive technology.

That's why we created **Rulex Platform** – an all-in-one solution for **data management** and **decision intelligence**.

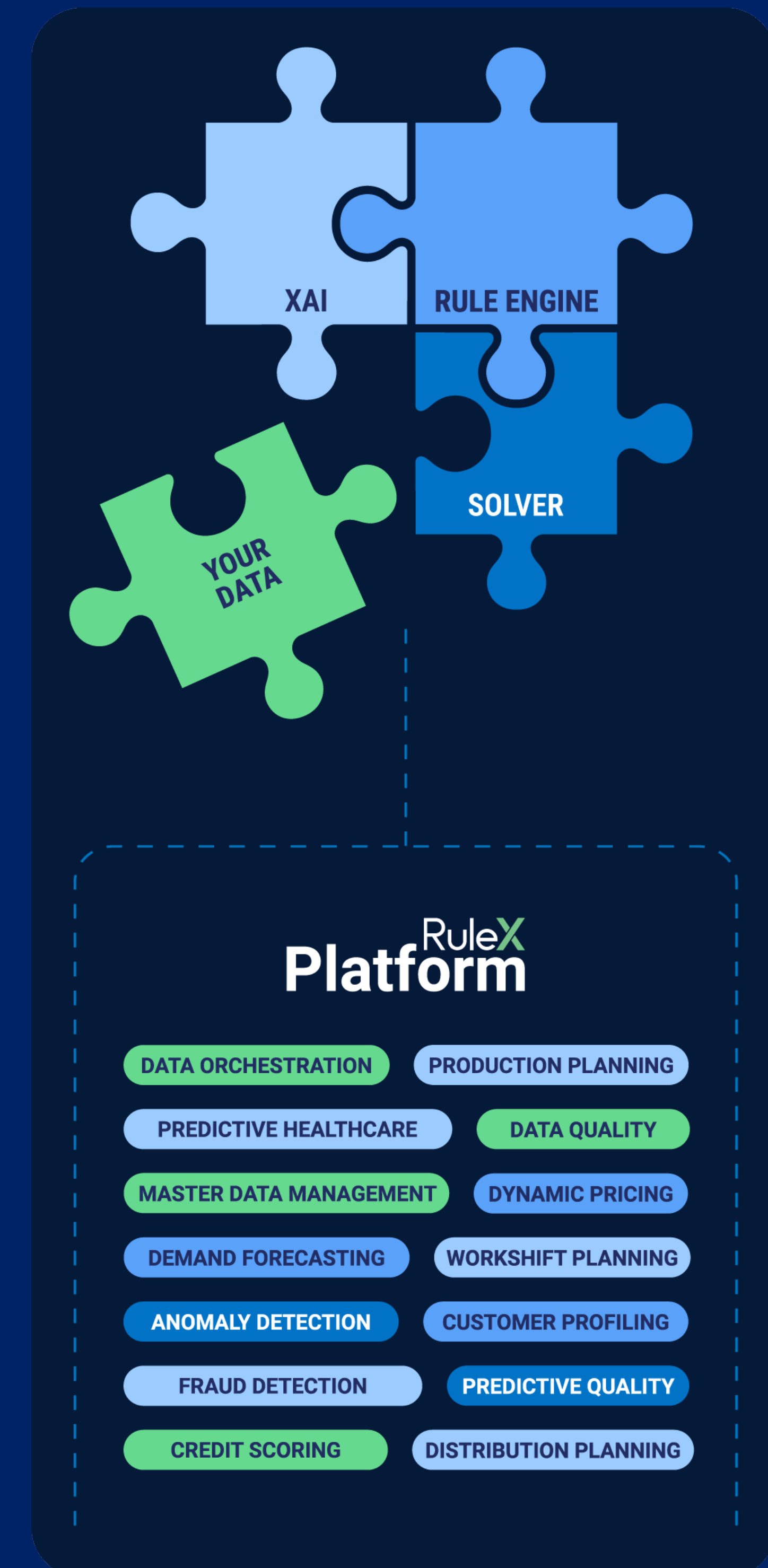
With its intuitive drag-and-drop interface, it empowers users of all technical backgrounds to orchestrate data, improve decision making, and automate processes with confidence and autonomy. Its flexible, modular toolkit makes it easy to **mix and match advanced technologies**, creating tailored solutions that integrate seamlessly into existing systems.

Since 2007, companies and organizations worldwide have trusted Rulex Platform to enable smart, fast, and resilient decisions.

LEARN MORE

Desktop, server, or cloud:

No matter where it is deployed, Rulex Platform provides the same intuitive, user-friendly user experience everywhere.

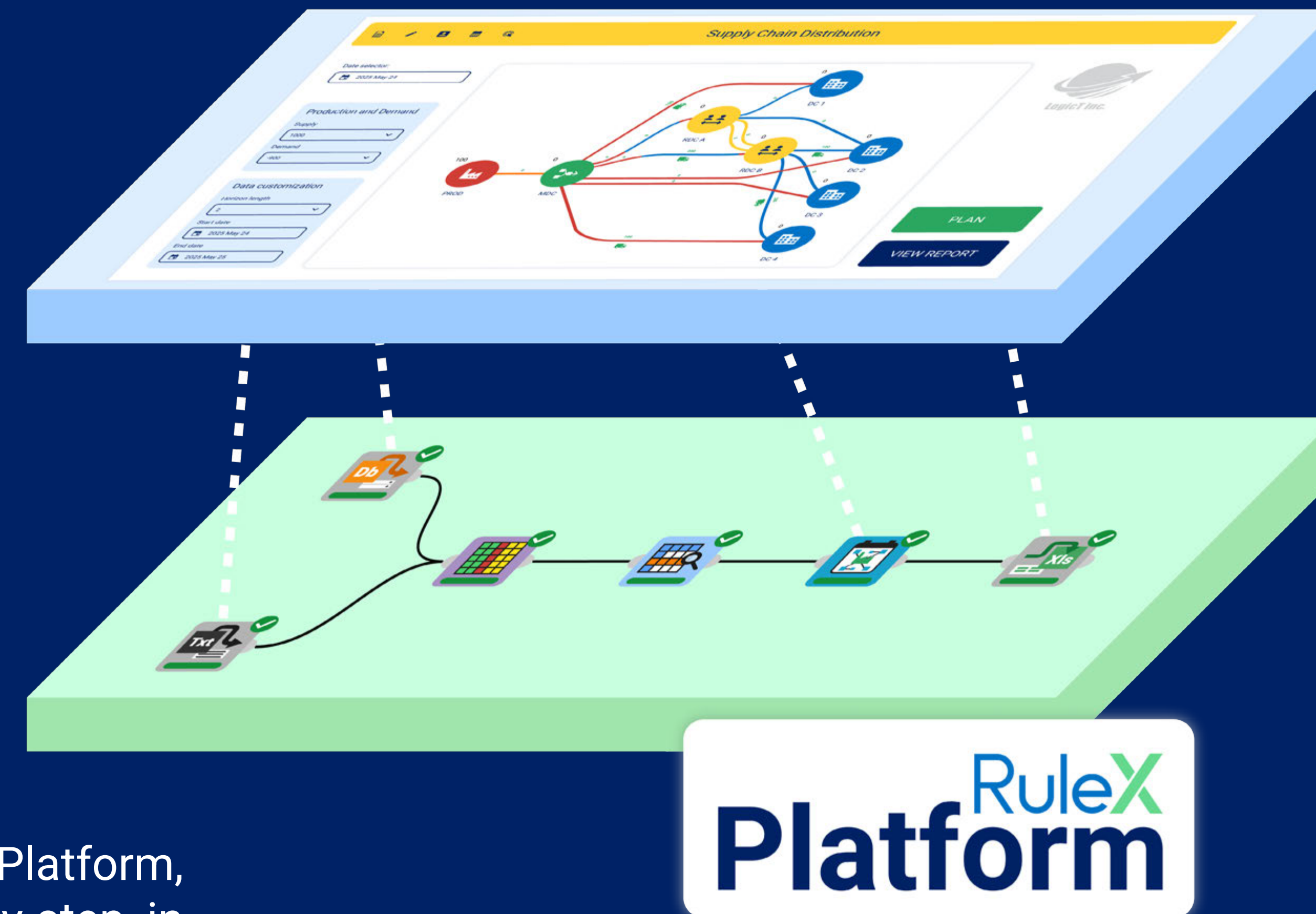


RULEX PLATFORM COMPONENTS

RuleX Factory

RuleX Factory is the heart of RuleX Platform, where **solutions are built** step-by-step in logical flows by simply dragging tasks onto the canvas.

RuleX Factory allows users to ingest, aggregate and improve data, apply the most suitable technology, and automate the process to repeat whenever and however it is needed.



RuleX Studio

As the creative hub of RuleX Platform, **RuleX Studio** allows the design of integrated **dashboards**. By dragging images, shapes, and widgets onto the canvas, users can share and interact with results from underlying RuleX Factory flows.

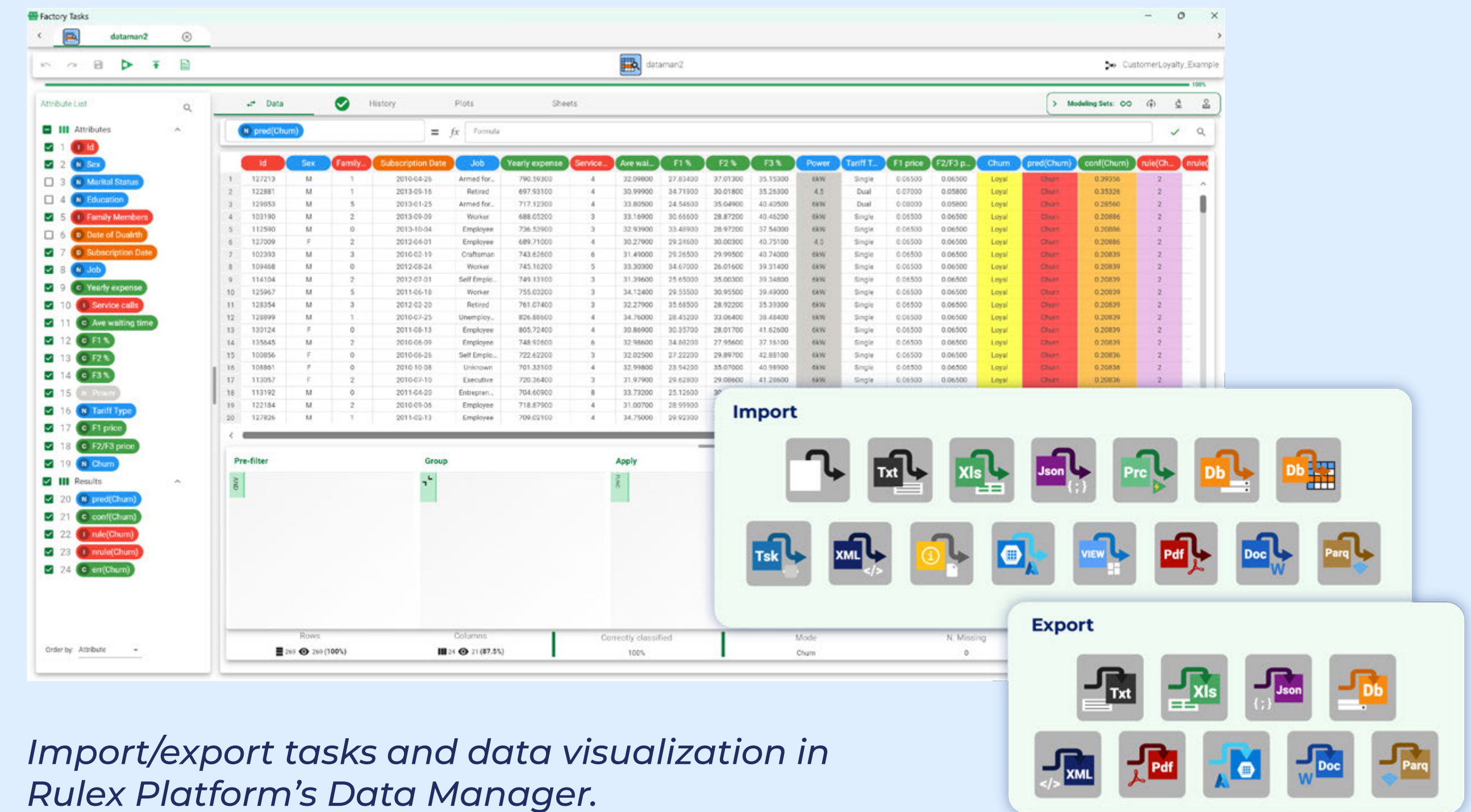
Beyond data visualization, RuleX Studio supports the entry, modification, and elaboration of new information within fully **tailored applications**, providing **custom interfaces** for end users.

The technology behind Rulex Platform

FOR A SOLID DATA FOUNDATION

Data orchestration

Wherever your data lives – laptop files, SAP tables, or cloud storage – Rulex Platform brings it together with **dedicated tasks**. Once imported, data is converted into a **unified table format**, making aggregation, reconciliation, and harmonization a breeze. Analyse your data, refine your insights, then let Rulex Platform take over with **fast processing** that handles 50 million rows of data in under 10 seconds. When you're ready, export the results in any format you need, even as an email attachment.

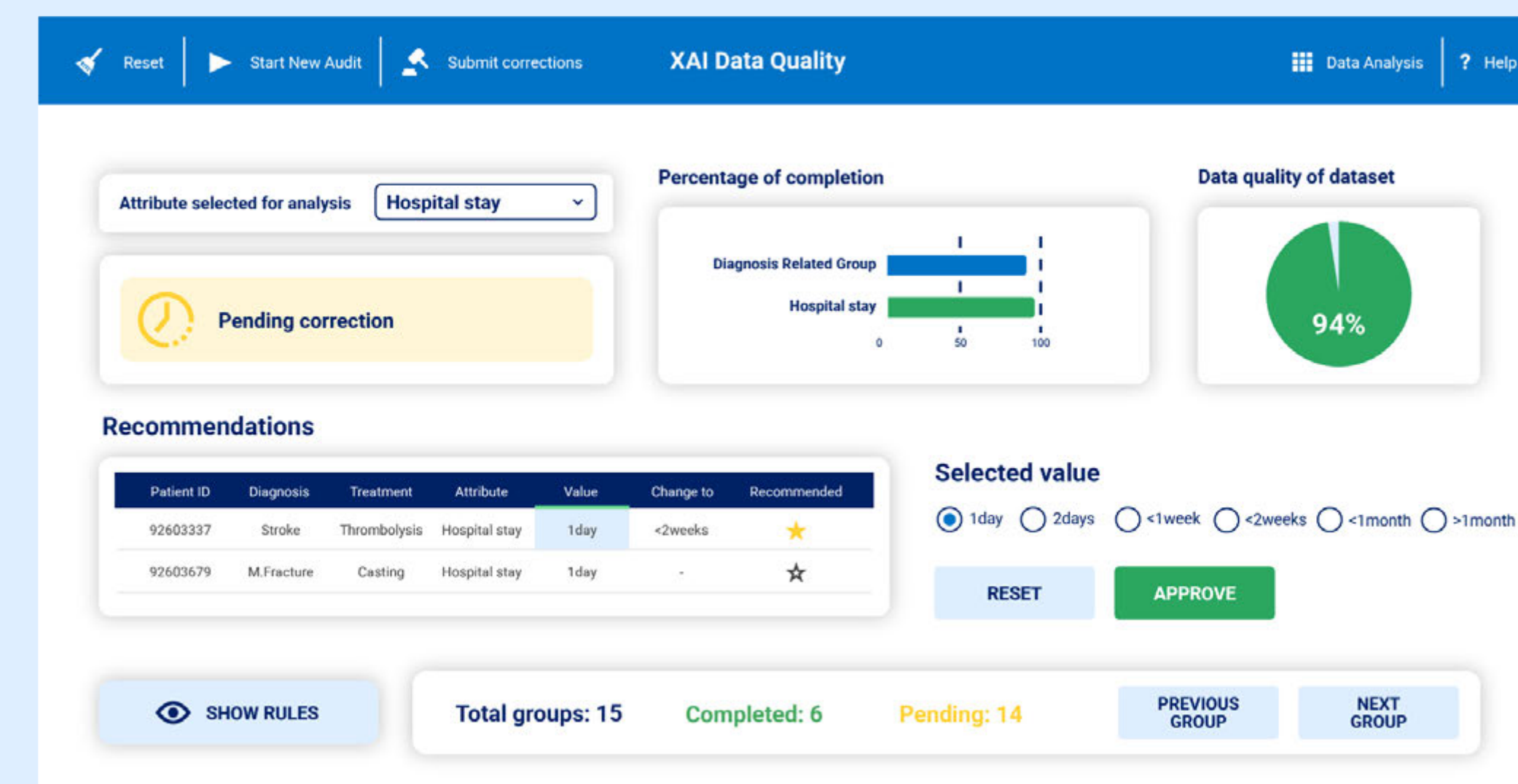


Import/export tasks and data visualization in Rulex Platform's Data Manager.

Data quality

Rulex Platform provides multiple data quality solutions designed to address unique business needs, from **traditional data cleansing** for handling missing values and outliers, syntax errors, duplicates, and fragmented data, to streamlined **rule-based validation**.

For the most elusive logical errors, Rulex applies **augmented data quality** powered by our proprietary eXplainable AI algorithm, which autonomously derives corrective rules from data and suggests corrections that business experts can review, ensuring a continuous improvement loop.



Rulex's augmented data quality delivered through a tailored, interactive interface.

The technology behind Rulex Platform

FOR ANALYSIS, DISCOVERY, AND EXPERIMENTATION

Native eXplainable AI

Rulex's proprietary eXplainable AI provides actionable results that are easy to understand and trust. Unlike black-box models, the algorithm supplies **clear rule-based explanations** for every insight and suggestion, improving decision making, ensuring compliance, and **reducing risk**. What's more, Rulex's XAI maintains high **accuracy** even with limited historical data.



Feature Ranking and confusion matrix (left), plus Interactive dashboards showing model performance and decision logic, with rules colour-coded by class and filterable by attributes (right).

Business rules engine

Rulex provides a powerful tool for **defining and applying business rules to data**. It is designed to allow users to write rules in an **external configuration file**, such as an Excel spreadsheet, using an intuitive syntax. Business experts can test or modify the rules without changing the workflow, keeping them fully in control of the entire process.

if "\$ShipDate" < "\$ExpectedShipDate"
then "Early"

when "\$ShipDate" **is not** None
if "\$ShipDate" < date(2000,1,1)
then "INVALID"

Intuitive business rules defined in Rulex Platform.

The technology behind Rulex Platform

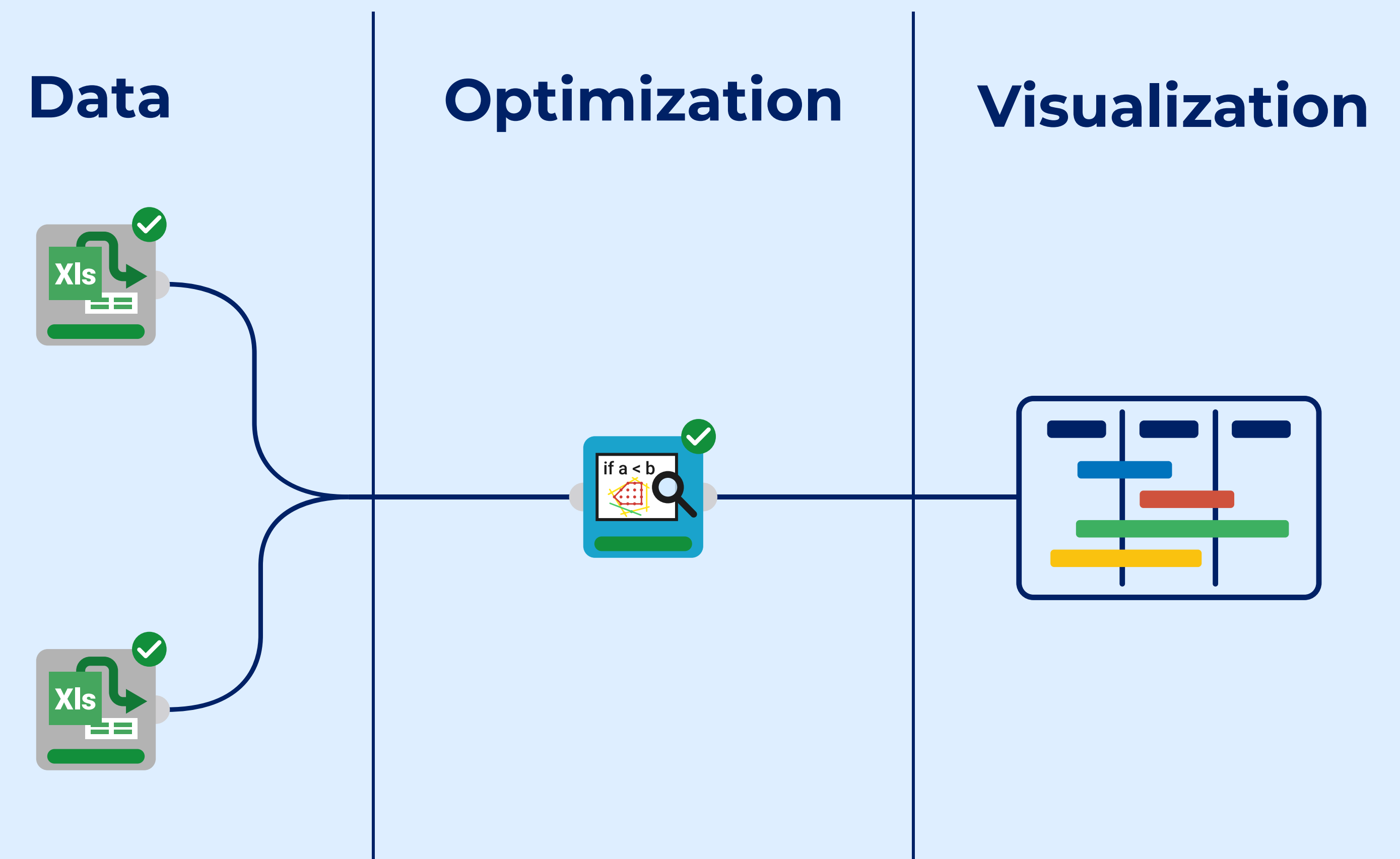
FOR ANALYSIS, DISCOVERY, AND BETTER DECISIONS

Optimization

Rulex's proprietary optimization tool delivers solutions to complex business challenges in a matter of minutes. While handling thousands of variables, the tool requires **no scripts or mathematical formulas**, with **hard and soft constraints** being defined in familiar **spreadsheets** by domain experts.

Scenario simulator

Rulex's *what-if* simulator goes beyond forecasting – it **recommends precise actions** to achieve desired outcomes. Users can **fine-tune analyses** by weighting target attributes and selecting key variables. Results are delivered in plain English, as clear, actionable recommendations that can be manually implemented or automatically executed for seamless decision making.



Scheduling problem solved in Rulex Platform.

The technology behind Rulex Platform

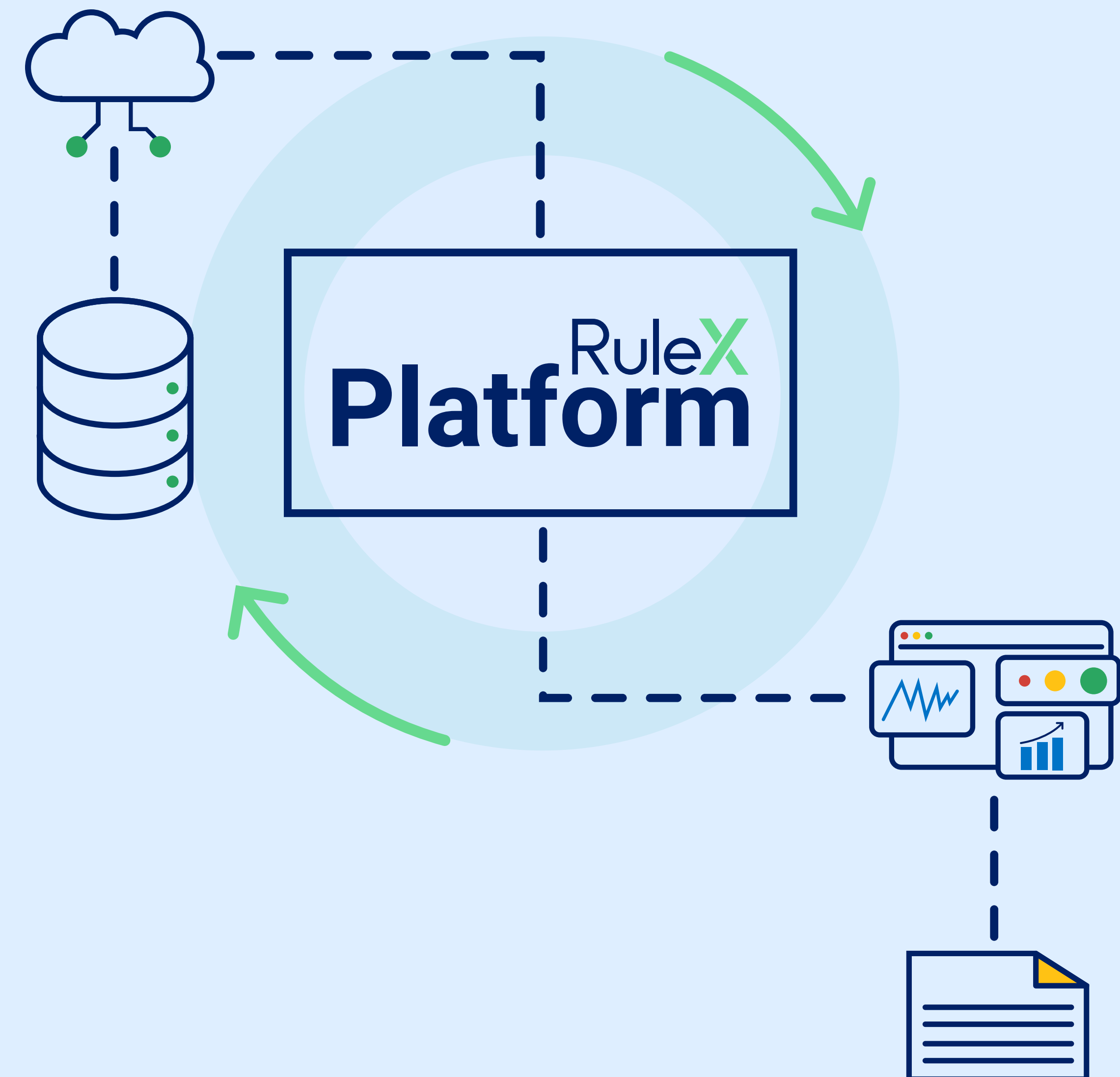
FOR ANALYSIS, DISCOVERY, AND BETTER DECISIONS

Automation

RulexPlatform automates workflows across diverse environments and **integrates with existing tools** like Windows Task Scheduler and enterprise systems. Flexible scripting, real-time **alerts**, and containerized deployment keep processes adaptable, while built-in Git and **REST APIs** enable smooth collaboration between teams. Rulex Platform also streamlines machine learning operations with **AutoML**, automatically selecting the best features, tuning hyperparameters, and comparing algorithms to find the most suitable model for each challenge. Monitoring and tuning tools integrate **human expertise into feedback loops**, enabling continuous model refinement.

LLM integration, GenAI assistant, and more

Rulex continuously evolves with new technologies to meet future demands. **Integration with Large Language Models (LLMs)** enables the extraction and integration of information from unstructured content. The **GenAI Assistant** supports faster, more intuitive access to resources, while also facilitating the definition of rules and constraints – helping users work more efficiently and confidently.





Real-world success

Over the past two decades, Rulex's decision intelligence platform has driven **multimillion-dollar savings** for global organizations across industries – from financial services and life sciences to manufacturing and supply chains.

By combining data and human expertise to make smarter decisions, Rulex has optimized operations, reduced costs, and unlocked new efficiencies at scale. Below are a **few examples of real-world applications** showcasing the impact of Rulex Platform.

Self-healing master data

*Combining XAI with expert
input for continuous rule
refinement*

100%
data accuracy

40%+
planning productivity
improvement

LEARN MORE:

[Rulex's data quality](#)

[Rulex's native eXplainable AI](#)

THE CHALLENGE

Modern supply chains are complex ecosystems characterized by vast networks of factories, distribution centers, and materials. Managing the **immense volume of related master data** demands substantial time and effort, often becoming totally overwhelming for human planners without the right tools.

OUR SOLUTION

Rulex contributed to the planning transformation of an F50 company, by successfully helping them achieve pristine data quality and focus on more strategic work. Each planner had to deal with a network comprising up to 100 factories, 250 distribution centers, and 6000 materials/locations. The solution was **based on Rulex's eXplainable AI (XAI) technology**. Specifically:

- ✓ Rulex's XAI autonomously identified anomalies in the company's data, deriving corrective rules, and suggesting corrections for even the most elusive logical errors.
- ✓ Experts could review and either accept or reject corrections, thus staying in control of the whole process. These corrections were then used to fine-tune the rules, enabling continuous improvement and iterative data healing.
- ✓ Using the optimized ruleset, master data was efficiently corrected and populated, while the transparency inherent in Rulex's AI provided clear logic behind every decision and recommendation, fostering trust and adoption.
- ✓ The company achieved 100% data accuracy, up from a starting point of less than 80%, while improving planning productivity by over 40%, resulting in direct business benefits, such as optimal inventory levels.



Client retention

Timely identifying clients at risk of churn to implement corrective actions

+11%
revenue

-6%
customer
churn rate

LEARN MORE:

[Predicting customer churn – article](#)

[Exploring the AI Act – article](#)

THE CHALLENGE

Customer churn is widespread, with **annual rates reaching up to 30%** in some global markets. Since acquiring new customers costs six to seven times more than retaining existing ones, protecting clients who show signs of declining loyalty is essential. The urgency is highlighted by surveys revealing that **91% of departing customers leave without providing any feedback**.

OUR SOLUTION

By leveraging its **proprietary eXplainable AI (XAI) technology**, Rulex developed a solution for a leading telecom company to detect and prevent potential churn. Specifically:

- ✓ Rulex Platform collected, integrated, and analyzed satisfaction data from the company's energy customers, including personal details (e.g., education level), supply plan terms (e.g. annual expenses), and support service usage (e.g., number of calls, average waiting time).
- ✓ Rulex's proprietary eXplainable AI task generated *if-then* rules from the data, finding correlations in multiple types of profile and classifying each customer as prone to churn or not in the following three months. The transparency of the model showed how each rule and condition influenced the outcome, enabling decision-makers to understand the main factors driving the shift in loyalty.
- ✓ Through a Microsoft Excel interface integrated with Rulex Platform, decision makers could both initiate the churn classification process and automatically generate personalized emails with tailored offers for at-risk customers.
- ✓ The solution enabled targeted, proactive measures to improve customer retention – such as enhanced service and customized offers – resulting in significant time and cost savings.



Hybrid anti-money laundering (AML)

*Combining rule-based XAI
and business knowledge for
fraud detection*

High detection
accuracy, with an

**AUC test
score
of 0.841**

LEARN MORE:

[Rulex's native eXplainable AI](#)

[Rulex's Rule Engine](#)

THE CHALLENGE

Despite regulatory frameworks, the fight against illicit transactions faces major obstacles due to the scale of daily transactions, the high rate of **false positives**, and the **constant evolution of fraud techniques**. Traditional rule-based approaches can be rigid and quickly outdated, while pure machine learning often lacks transparency.

OUR SOLUTION

In collaboration with the University of Genoa and a leading bank, Rulex developed a **hybrid method combining eXplainable AI with expert-defined business rules** to maximize fraud detection effectiveness. Specifically:

- ✓ Rulex analyzed 9M+ banking transactions across 28 types and 12 features, including high-risk payment methods and the geographic locations of accounts, in a dataset heavily imbalanced between fraudulent and regular cases.
- ✓ Moving-windows aggregations were applied to capture behavioral patterns over time and generate new attributes. On top of this, to flag suspicious patterns, expert-defined business rules were applied using Rulex's Rule Engine, enabling specialists to write, edit, and refine rules in plain English from an external spreadsheet (e.g., Excel).
- ✓ This enriched dataset, integrating expert knowledge, was then combined with the original data for classification. Rulex's proprietary eXplainable AI algorithm, the Logic Learning Machine, generated transparent *if-then* rules explaining why each transaction was classified as regular, suspicious, or fraudulent.
- ✓ By combining automated analysis with human insight, this hybrid solution outperformed traditional methods, striking a balance between performance and interpretability and achieving an AUC test score of 0.841.



RULE ENGINE

Efficient laboratory analyses

*Speeding up result
evaluation with automated
value flagging*

80%+

increase in efficiency

LEARN MORE:

[Rulex's Rule Engine](#)

[Rulex's data agility](#)

THE CHALLENGE

In traditional diagnostic workflows, it's common to manually review analysis results one by one to confirm the proper functioning of diagnostic machines and the **plausibility of the output values**. This process is time-consuming and resource-intensive.

OUR SOLUTION

Rulex implemented an intelligent automation solution for a leading medical company with diagnostic centers across Europe. The system leveraged both Rulex's **Rule Engine** and Rulex Platform's **integration capabilities**. Specifically:

- ✓ Drawing on their field experience, the medical personnel defined around 100 validation rules in a Microsoft Excel file, using intuitive plain English syntax. Some rules were purely analytical, while others incorporated contextual information (e.g., a glucose level might be acceptable for elderly patients but not for younger ones).
- ✓ These rules were linked to the analysis data using the Rule Engine task, simply by dragging and dropping the rule file and analysis data – whether from a database, local file, or SharePoint. The system then automatically applied the rules at runtime as analysis results were produced.
- ✓ Cases flagged as uncertain, or borderline, were sent for manual review. For all others falling within pre-defined plausible thresholds, medical staff could decide whether to review or automatically approve them – remaining fully in control.
- ✓ The transparent logic made it easy for medical staff to understand, trust, and independently edit or add rules to fine-tune the process. Analysis results could be automatically transferred from the company's own management system to Rulex Platform for validation, before being sent back for patient report generation and printing.
- ✓ The solution integrated seamlessly and transparently with the diagnostic center's management system, without disrupting daily operations. Rulex Platform's flexibility also supported multiple applications through capabilities such as REST APIs.
- ✓ The solution improved efficiency by 80%, increasing revenue and staff morale.

Demand forecasting

Estimating demand to align supply with market needs

<10%
average MAPE

*on monthly predictions
of key products*

LEARN MORE:

[Rulex's AutoML](#)

[Rulex's native eXplainable AI](#)

[The supply chain balancing act: Demand planning and forecasting in action – article](#)

THE CHALLENGE

Accurate demand forecasting requires **responding to fluctuating market conditions** and other factors like seasonal variations. When forecasts miss the mark, the impact can be severe – leading to shortages or surpluses that may disrupt operations and affect service quality.

OUR SOLUTION

Rulex supported a global pharmaceutical company in accurately forecasting sales for several flagship products through an all-in-one solution, which encompassed **data pre-processing, modeling, and forecasting within a single platform**. Specifically:

- ✓ The model incorporated sales data for different products, along with external variables, such as temporal trends, the spread of seasonal viruses, and geographic details. Rulex Platform simplified data import, integration, and cleansing through user-friendly tasks in a no-code interface.
- ✓ Rulex Platform automatically selected the best-fit model and enabled parallel testing and execution of different options. Autoregressive techniques were applied to capture periodic patterns.
- ✓ The solution delivered demand forecasts over a three-month forecasting horizon, both aggregated and month-by-month, with periodic re-runs to incorporate new data. The sliding window method captured the latest trends, improving performance accuracy, as reflected by low Mean Absolute Percentage Error (MAPE) scores.
- ✓ Thanks to Rulex Platform's comprehensive capabilities, the demand forecasts were seamlessly integrated into other operations, such as inventory replenishment and logistics, without the need to switch tools.



OPTIMIZATION

Adaptive deployment planning

Automating deployment for dynamic operations

-75%

time required for replanning

LEARN MORE:

[Rulex's optimization](#)

[Mathematical optimization: how to avoid getting stuck in rabbit holes – article](#)

THE CHALLENGE

Adapting deployment plans **when disruptions occur demands rapid recalculation across a complex network**. Each event triggers significant time loss as planners manually rebuild delivery plans amid constantly shifting variables, increasing the risk of human error and reactive decisions. These challenges directly impact financial performance through missed delivery windows and penalties, costly expedited shipments, and inventory imbalances across warehouses.

OUR SOLUTION

In a solution developed for a global supply chain company, Rulex Platform was used to **dynamically reassign orders to alternative distribution centers** when disruptions occurred, minimizing overall delivery costs while respecting constraints such as requested delivery dates and carrier availability. Specifically:

- ✓ The solution integrated seamlessly with the client's existing ticketing system to reduce deployment friction, while planners retained full control through a tailored, interactive interface.
- ✓ When a ticket was opened, Rulex Platform automatically notified the incident owner, who assessed and potentially escalated the issue in a custom dashboard. The planner was then alerted to review and replan as needed, with notification priorities adapting to the severity of each event for a fast, coordinated response.
- ✓ Detailed PDF reports were automatically generated to quickly share disruption details.
- ✓ Manual planning decisions were largely automated, reducing planner workload and enabling faster, more reliable deployment planning across all sites.



Cross-functional optimization

Hassle-free problem solving with no formulas or scripts

3x

faster planning

LEARN MORE:

[Rulex's Optimization](#)

[Mathematical optimization: how to avoid getting stuck in rabbit holes – article](#)

THE CHALLENGE

Efficiently optimizing any single process is a challenge on its own, but **simultaneously addressing multiple interconnected areas** often goes beyond the reach of conventional tools. For example, in the supply chain, work shift scheduling must balance production needs with employee rest periods, technical skills, and availability.

OUR SOLUTION

Rulex developed an easy-to-handle workflow for a Fortune 50 company to synchronize production, packaging, and work shift planning. The solution introduced an **efficient and scalable approach** to optimization within a single Rulex Platform flow. Specifically:

- ✓ Objectives, multiple constraints, and values were defined in an offline Excel file using a simple syntax, avoiding the need for complex and time-consuming mathematical formulas.
- ✓ Constraints and the data to be optimized were simply dragged and dropped onto the canvas and connected to the optimization task.
- ✓ The optimization task enabled the final configuration of the solution, such as which constraints were 'hard' (e.g., all batches must be scheduled) or 'soft' constraints (e.g., certain products should be assigned to the most suitable machines or employees).
- ✓ The result was generated in minutes, requiring no scripting, outperforming manual methods both in time and accuracy.
- ✓ The whole solution design process, from the drawing board to a production-ready deployment, took less than three months.

Predictive machine maintenance

Providing timely instructions to avoid machine breakdowns

90%+

accuracy in
breakdown
predictions

THE CHALLENGE

Unexpected breakdowns and equipment failures represent a serious problem for manufacturers, negatively impacting operations and revenue. This issue is particularly critical for large, **complex machines**.

OUR SOLUTION

Rulex designed a predictive maintenance solution for an international manufacturer to help them **investigate the condition of their trenchers and suggest preventive actions**. Specifically:

- ✓ The solution integrated historical data on machine breakdowns, sensor measurements from the trenchers, and machine-monitored flags.
- ✓ Alarms potentially leading to failures were identified across various types, such as those due to software bugs, operating hours, or engine oil pressure.
- ✓ Using Rulex's proprietary eXplainable AI technology, intelligible rules were generated from this data, enabling the accurate prediction of potential equipment breakdowns, along with the underlying reasons. The system achieved an impressive accuracy rate of over 90%.
- ✓ Once the user-controllable variables were set, the Rule-Based Control task generated timely instructions on how to pre-emptively avoid breakdowns by tweaking certain parameters, such as lowering the engine speed of a specific machine.
- ✓ The provided instructions were easy to understand, and could be followed directly by operators without IT intervention.

LEARN MORE:

[Rulex's Rule-Based Control](#)



Water distribution network optimization

Reducing energy consumption by following generated action plans

-5%
energy consumption

High service quality (QoS)
maintained

LEARN MORE:

[Case study's paper](#)

[Rulex's Rule-Based Control](#)

THE CHALLENGE

Optimizing water distribution systems in large cities involves **complex networks with interconnected nodes**, hidden variables, and numerous operational constraints. This task typically requires specialized expertise to fine-tune every aspect, including the allocation of power to pumps to meet fluctuating water demands.

OUR SOLUTION

Rulex developed a solution to optimize the water distribution system of a major Italian city, striking a balance between efficiency and computational time **without costly real-world experiments**. Specifically:

- ✓ Using a machine learning approach, the solution analyzed historical data from 27 pumping stations, including values on the flow, energy consumption, pressure, and pump inverter speed. This process generated 146 *if-then* rules regarding system performance.
- ✓ The extracted rule-based model was used to generate controls that adjusted the status of the pumps to match the desired network status.
- ✓ Rulex's native eXplainable AI technology illustrated the cause-effect relationship of predictions on water demands (e.g., system malfunctions due to the number of pump switches turned on in a specific area).
- ✓ Forecasting was scheduled to run every 15 minutes, providing near real-time decision support to the water main operators through a clear action plan.
- ✓ The proposed controls led to immediate improvements, measured by performance KPIs, and overall performance optimization over time.



TRAINING & SUPPORT

Thanks to its intuitive graphical interface and online training platform, Rulex enables citizen developers to autonomously develop and maintain solutions, without writing a single line of code. And if support is needed, Rulex data scientists and solution architects are ready to help, alongside enterprise-grade 24/7 customer service.



Find **support for every project**, from installation and billing to flow development, on our customer portal.

Rulex Services operates around the clock, providing **dedicated assistance** while constantly working to enhance Rulex Platform with **innovative new features**, ensuring an up-to-date and efficient user experience.



Join a vibrant, **totally free space** where everyone is welcome to share ideas, get support, and find inspiration.

Rulex Community offers **forums** for sparking **new discussions** with peers, as well as a **variety of resources**, including videos and webinars, ready-to-use flows, basic courses, and insightful articles written by our experts.



Explore over **100 interactive, self-paced certified courses** designed to help everyone quickly get up to speed with Rulex Platform.

Start from **learning paths** covering essential operations such as importing and pre-processing data, then move on to hands-on AI and optimization scenarios to put your knowledge into action.

WHAT THEY SAY ABOUT US



RuleX Platform

"RuleX is, put simply, the best decision intelligence platform that I have been involved with on the market."

★★★★★

Manager, Supply Chain - Miscellaneous

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Manager, Supply Chain in the Miscellaneous Industry gives RuleX Platform 5/5 Rating in Gartner Peer Insights™ Decision Intelligence Platforms Market.
Read the full review here: <https://gtnr.io/Mk3Si0m8K>

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