The ROI of Moving from Spreadsheets to Low-Code/No-Code Data Analytics

The use of spreadsheets is widespread across business operations. Excel is the default tool most of us turn to without really thinking about whether it is the right fit for the task. Project management? Excel. RoAS report? Excel. Capacity planning? Excel. Budgeting and forecasting? Excel.

This is in part because most of us have grown up with Excel. We are proud of our Excel expertise and the sophisticated formulas we know. Excel is the first data analytics tool that business users across finance, marketing, and other functions were exposed to.

It is true that spreadsheets are very convenient and valuable for collecting and crunching small amounts of data. However, as the data gets large, spreadsheets quickly become unwieldy. Their performance slows down and they start crashing more often, errors are introduced frequently with all the manual copy pasting and tricky formula coverage.

The costly fragility of using spreadsheets for complex, large scale projects is evident through plenty of real-world examples, be it the **$6 billion loss** at JP Morgan Chase, the London Olympics committee selling **10,000 tickets for non-existent seats**, MI5 **bugging one thousand wrong phone numbers**, or TransAlta **losing $24 million**. No business, no matter how secure or how sophisticated, is impervious to the inevitability of costly, reputation-damaging errors.

There is no doubt that an overreliance on spreadsheets can expose businesses to unacceptable levels of risk. So, what's the alternative? Low-code/no-code data analytics platforms are increasingly gaining popularity for enterprise-scale insights as they enable businesses to work reliably with large amounts of data, automate manual processes, and perform advanced analyses beyond data wrangling, all while mitigating the typical spreadsheet challenges.

While you might not be able to replace spreadsheets entirely, it is important to have an assortment of modern tools in your toolbelt to be able to use the best possible technology that is relevant to your scenario and get the most out of your data and time.

Shifting the Mindset from Rows and Columns to Visual Workflows
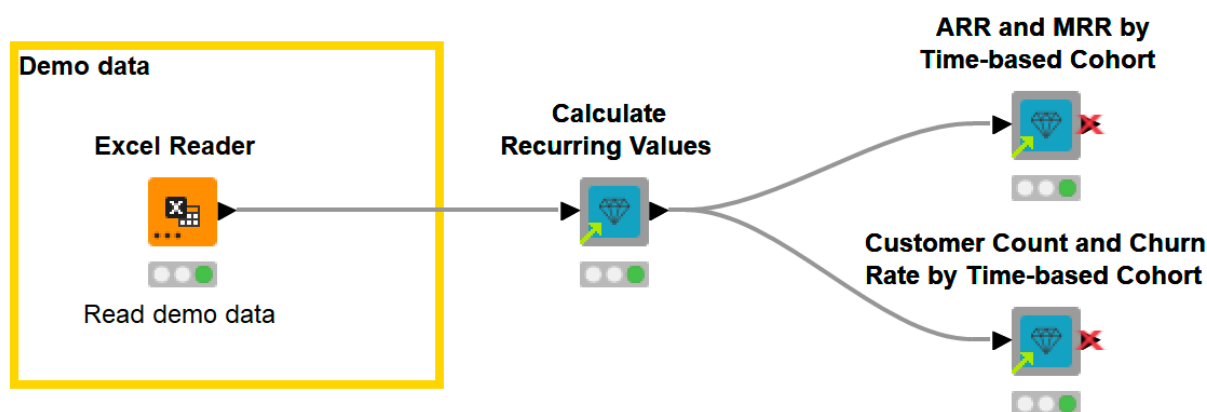
The key characteristic of a low-code/no-code data analytics platform is the workflow. Instead of sifting through menus or typing out formulas as you would in Excel, you drag and drop nodes to create an easy-to-follow visual workflow.

In Excel, it can be hard to decipher formulas that sometimes extend over multiple rows. There is also always the danger of your formulas breaking when you accidentally hit the wrong key. A change in a single cell can trigger a chain reaction that alters the output of your worksheet entirely. The worst part is that the analysis can continue being used for a long time before someone figures out something went wrong. There is no debugging tool or testing frame to inspect whether all cells keep working as expected.

In a visual workflow, on the other hand, arrows take you from node to node; explanatory notes can be inserted underneath each step of the process and longer annotations can be added around multiple nodes.

You can easily view each step of the analysis process to quickly spot, and correct errors, without the need to start the analysis from scratch.

A workflow also allows all stakeholders to follow the process you have created, even those with a non-technical background. The inherent visual documentation of workflows provides transparency, easier sharing and re-application of processes throughout the team. Additionally, with a low-code/no-code data analytics platform like KNIME, they can centrally set access permissions at the data, node, and workflow level, so users can either reuse a pre-built workflow or build on it further, all without any loss of security or data integrity.

Moreover, low-code/no-code platforms let you perform far more advanced analysis on your data than the limited number of operations that you can perform in Excel.

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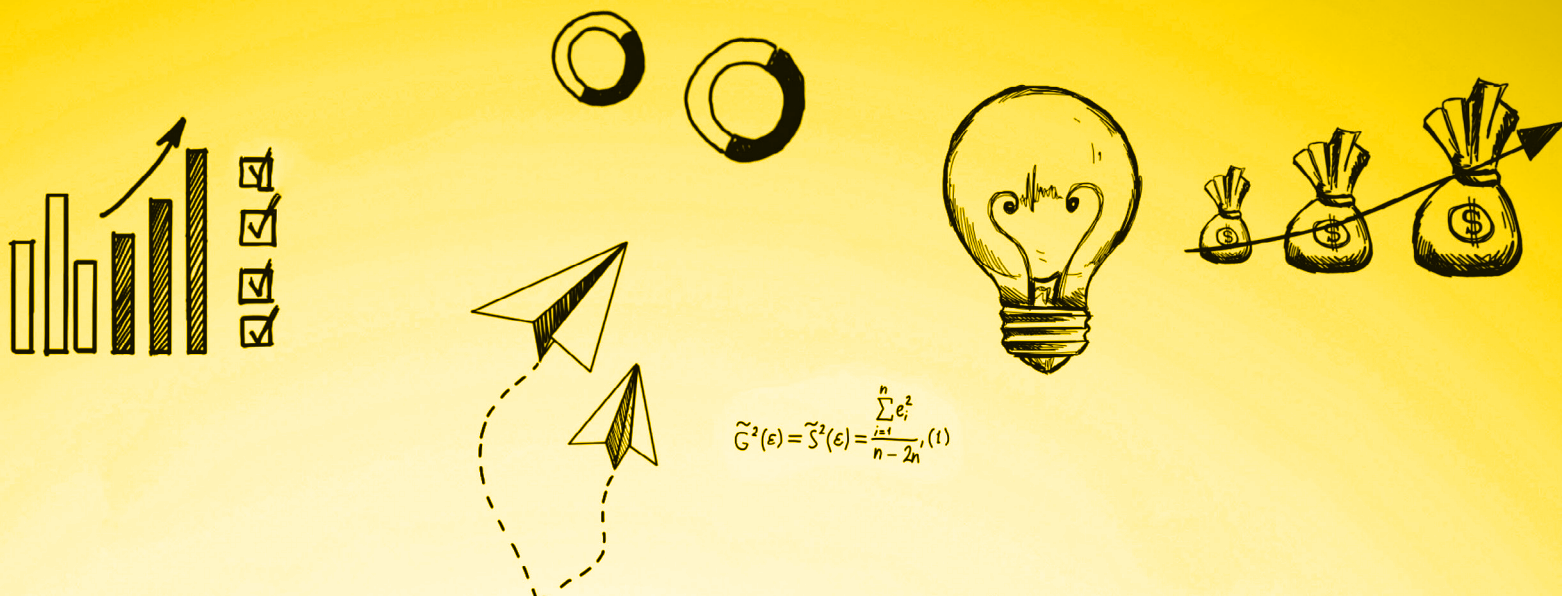
Repeatability Takes You from Data Crunching to Value

In Excel you're constantly defining a process for how you work with data. You clean it, you filter it, etc. What you're left with, however, is just a table, and no historical record of what happened to that table. You've lost your process, and the next time, you have to repeat it. A low-code/no-code data analytics platform gives you both - the process that you've set and the resulting table. This shift from thinking only about the table, to both, the process and the table, opens up a world of efficiency.

For instance, most analysts spend a majority of their time preparing data in spreadsheets in the same format over and over again for weekly, monthly, or quarterly reporting. Even when the type of report varies, there are still steps that they have to repeat in their data analysis every single time - pulling data from the same sources, cleaning the data in the same way, exporting the data to tools like Tableau. It's time-consuming and manual but indispensable for most business functions.

With a low-code/no-code data analytics platform, you simply build your logic through a workflow and run or rerun it whenever you want to without rebuilding the whole analysis. Or you can schedule it to run at the frequency you need and automatically email a report to stakeholders. The workflow pulls the necessary data and gives you the report without requiring you to go through tedious data cleansing and wrangling each time.

Let's say you want to build a revenue report each quarter.

While the sales department might use Salesforce, the finance team maintains figures in Excel on Sharepoint or GoogleDrive. Accessing and comparing data across sources and formats is a real pain. A single visual workflow can automate accessing and merging the different data sources and formats.

When the sales division reports a deal worth $1 million in Salesforce and finance raises a hand to say well actually it's $999,999 in Excel, you can have all the relevant data sources adjusted automatically using a simple "Adjustment" node in the workflow. The node calculates how much is needed to make the other data sources correct. You can configure it to write the report to a specific database, an Excel file, or to a location in the cloud, or send it as an email.

Schedule the workflow to run, say once a week, and all new figures are adjusted automatically.
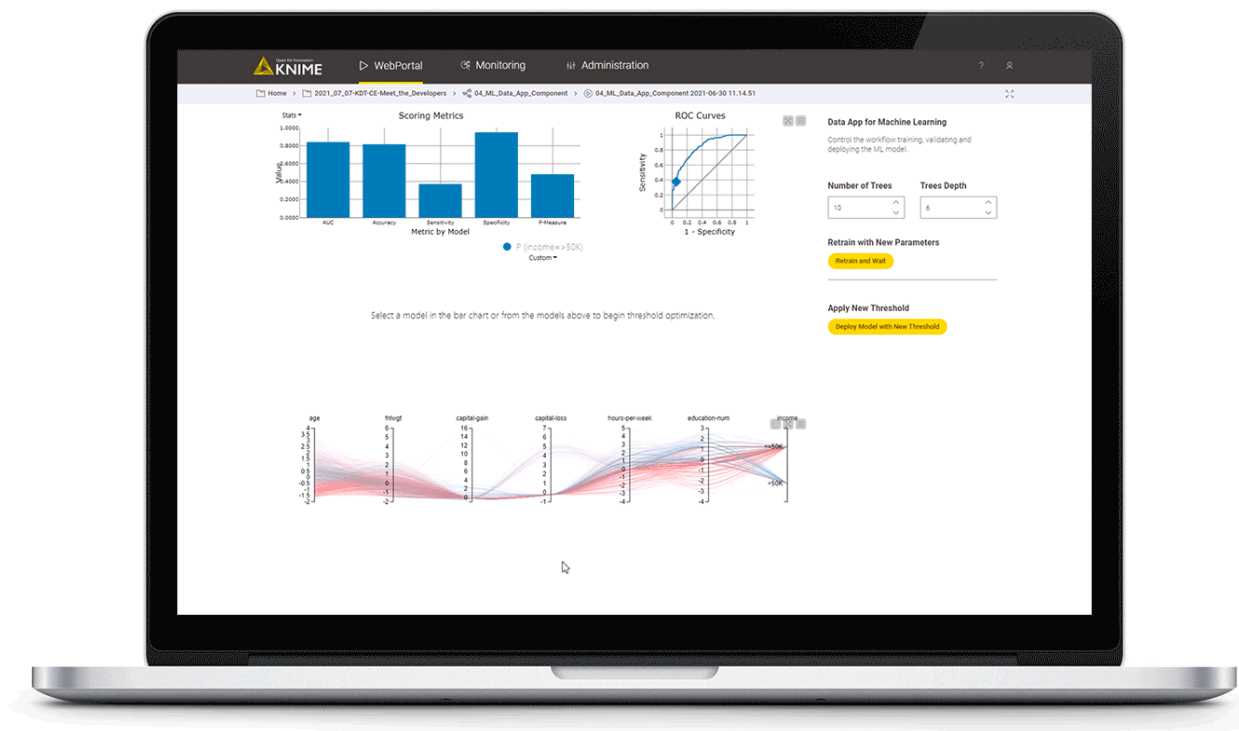
What's more, with the right low-code/no-code data analytics platform, you can make your workflow available as an interactive data app to your stakeholders. They can access and download reports as required (no need to request reports by email) and interact with the data app to query different figures, for example, or filter the output for closer inspection.

By liberating you from the painstaking steps that spreadsheets require, low-code/no-code data analytics platforms let you focus on the big picture and deliver business value in time.

# Operating at Scale with Security and Auditability

With Excel's 1 million row limit, scalability often becomes a concern when you are dealing with large datasets, not to mention the sudden slowing down of data processing until ultimately the spreadsheet crashes. Excel simply doesn't have enough memory to load larger datasets. This often means that teams settle for doing the analysis on just a subset of the data at a time.

Low-code/no-code data analytics platforms are designed specifically to handle this heavy lifting of data. They let you scale and grow your analyses with your data without any limitations. Even as your workflows become longer and more complex, their ability to process vast amounts of data does not decline as most such platforms let you carry out data processing on a separate server.

Another indispensable aspect of scalability is security and auditability. Data analytics platforms like KNIME provide extensive access control, user rights management, encryption, auditing functionality, auto-documentation, and logging features at a granular level to help you mitigate risks around security, privacy, and compliance. Features such as backward compatibility and rollback around workflows also help you avoid unintended changes and errors.

Low-code/no-code data analytics platforms also provide an opportunity to empower and upskill people across the organization by letting them do more with data - far beyond what they can do with spreadsheets. They advance basic data understanding in the enterprise and make transparent the use of the most complex technologies — including notoriously nebulous machine learning capabilities. They are key to scaling the function of data science in the modern enterprise and powering data-driven decisions so that Ph.D.s or folks with 10+ years of experience in data mining are not the only ones who can derive insights from data.
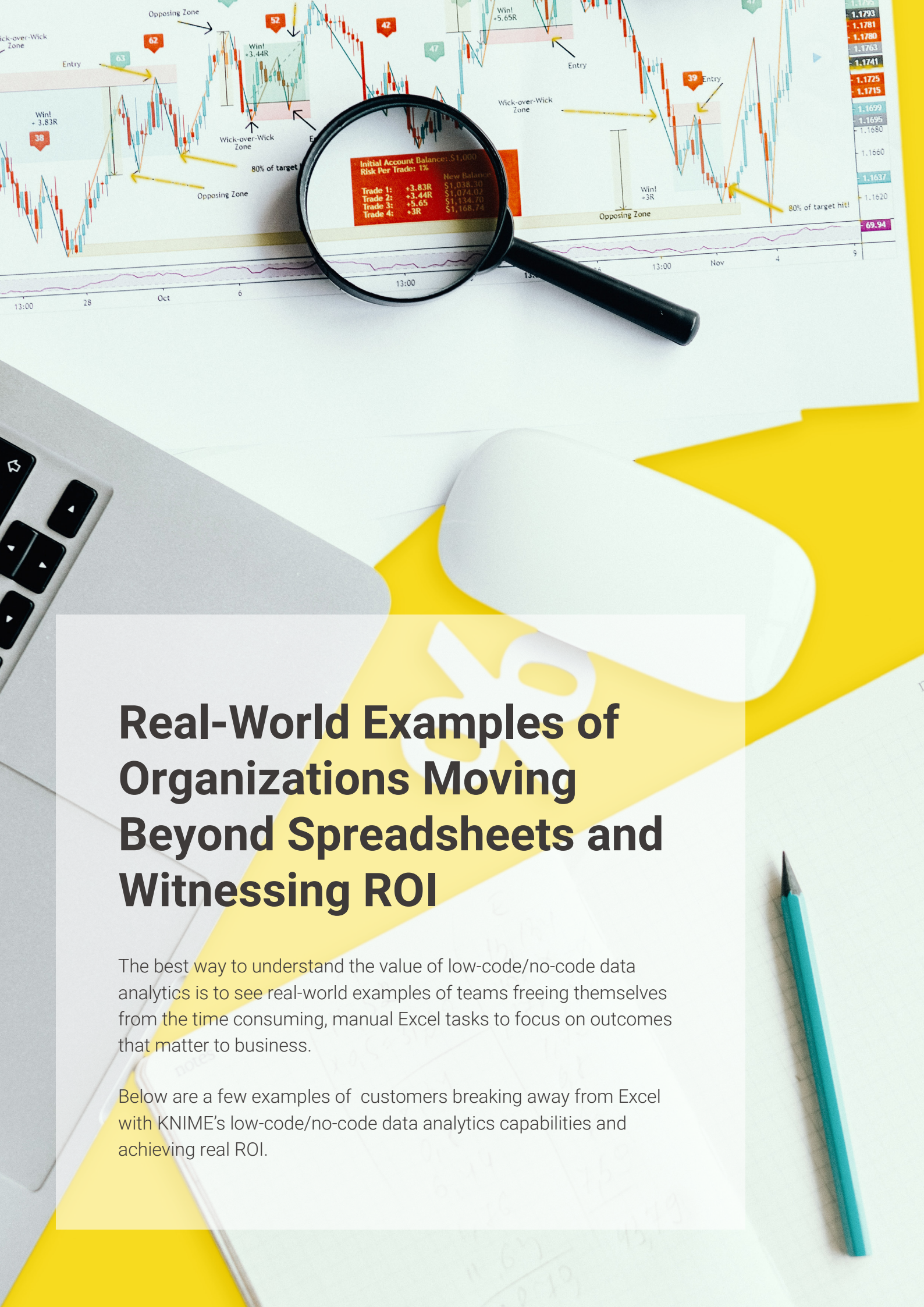
Real-World Examples of Organizations Moving Beyond Spreadsheets and Witnessing ROI

The best way to understand the value of low-code/no-code data analytics is to see real-world examples of teams freeing themselves from the time consuming, manual Excel tasks to focus on outcomes that matter to business.

Below are a few examples of customers breaking away from Excel with KNIME's low-code/no-code data analytics capabilities and achieving real ROI.

1. Better Decisions, Huge Resource Savings at Continental

Ontinental⑧

Pain Points

- Time-consuming data processing and reporting due to complete reliance on Excel

- Manual, error-prone forecasting done via complex spreadsheets and VBA macros

- Maintainability and performance issues for medium-sized data volumes

How They Solved It

- Rolled out KNIME Analytics Platform company-wide for thousands of business users across controlling, tax, HR, R&D, production planning, etc

- Automated multiple processes such as planning, reporting, Kanban boards, deadline tracking, supply chain warnings with KNIME

- Data integration and data wrangling done independently by business users in KNIME

RoI from Using KNIME

- **Time savings of over 80%**

- Month-end controlling tasks shortened **from two days to thirty minutes**

- Ability to run an entire plant budgeting process **at a tenfold precision level**

- Serial number traceability to R&D, plant, and quality users as a self-service tool - **providing answers in minutes rather than an entire day**

"Since rolling out KNIME at Continental, we're making better decisions, everywhere. We're also able to back these decisions on stronger data, faster. We're gaining more insights from data, and freeing human capacity from mundane data processing and reporting tasks."

Dr. Arne Beckhaus, Head of Big Data and Digital Transformation C&S at Continental

2. Data-Driven Internal Auditing at Tata Steel

TATA STEEL

Pain Points

- Difficulties in calculating correct tariffs and preventing overcharging of services for contractual employees

- Challenges in invoicing prices correctly due to a complex pricing structure and various order fulfillment strategies

- Inconsistencies between customer orders and sales order confirmations

How They Solved It

- Auditors at Tata Steel used KNIME to combine timesheet data and detect anomalies in charges for contractors

- Auditors also performed a sales-price analysis in minutes using KNIME to identify erroneous invoicing along with the root cause

- Performed an extensive reconciliation of the product master data for all orders from existing and legacy systems using KNIME

ROI from Using KNIME

- **Time savings of over 95%**

- **Prevented overcharging** of **services** and **incorrect tariffs**

- Ensured **correct pricing** within **invoices**

- **Significantly reduced inconsistencies** between customer orders and sales order confirmations

"KNIME saved us a lot of time. When I did data analysis in Excel, I would start on a Monday and on Tuesday I would find out that I had made an error and I would have to redo the whole work. I don't have those kinds of issues anymore. KNIME helped us make our data analysis repeatable and reusable."

Eddy van der Geest, Senior Auditor at Tata Steel

3. Faster Month-End Closing at Deutsche Telekom

Pain Points

- Collecting information for month-end closing reports from multiple sources was time consuming and error- prone

- Controllers spent massive amounts of sifting through accounts and detecting deviations in figures manually

- Analyzing and providing comments on these deviations for month-end reports was also done from manually from scratch and was time-intensive

How They Solved It

- Used KNIME to obtain the underlying meaningful reports quickly without having to search through figures manually

- Built a new process using KNIME to automatically produce technical comments on the compiled figures in a template

- Automatically transferred these comments to the closing team who can review them and elaborate as required

RoI from Using KNIME

- Controllers have access to **automated deviation analysis**

- Controllers can access basic, commented **reports at the click of a button**

- Controllers **focus on adding more insight** to the automatically provided comments in reports, **enhancing the master database**

- Use of **automated deviation analysis expanded to sales performance data**

"It was great to see how, with the right approach and tool, we were able to generate a valuable benefit for our closing team in such a short time."

Gerrit Lillig, VP PK Steuerungsinstrumente, Telekom Deutschland GmbH

4. Creating a Bill of Materials (BOM) without Master Data at BMW

Pain Points

- Controllers spent excessive time evaluating master data from various SAP applications in Excel to create Bill of Materials (BOM) reports for management

- Faulty or incomplete master data led controllers to manually enter large amounts of data to generate BOM reports

- Controllers repeated this from scratch each time a report was required

- They struggled with collaborating using Excel due to differences in skill levels

How They Solved It

- Used KNIME's low-code machine learning and text processing capabilities to evaluate BOM master data

- Fragmented text within BOMs and classified it with statistical context

- Used readymade KNIME workflows for cross validation, scoring, and parameter optimization to ensure data quality and accurate machine learning output

RoI from Using KNIME

- Created **BOM** reports **without** the need to rely on **master data**

- Achieved **97% accuracy** in BOM reports

- Analysts with various roles in the controlling team are able to easily **collaborate over BOM** reports

- With automated machine learning workflows, controllers do not need to repeat the analysis from scratch each time

These examples just scratch the surface of what is possible when organizations switch from spreadsheets to a low-code/no-code data analytics platform like KNIME.

Ready to start transitioning? Try out early access **KNIME Analytics Platform Version 5** with a Starter Perspective specially designed for spreadsheet users. The new Starter Perspective includes a carefully chosen set of relevant nodes for spreadsheet users that let you quickly and efficiently prepare your data. The Starter Perspective is the perfect entry point for you to move from manual spreadsheet manipulation to visual workflows.

Start faster by using companion resources that come with KNIME Analytics Platform Version 5 such as this **cheat sheet** for spreadsheet users detailing the included nodes and their purposes, a **getting started guide** to build your first workflow, and a **collection of example workflows** that can be reused.

Don't hesitate to ask for help from the KNIME community on the **KNIME Forum**.