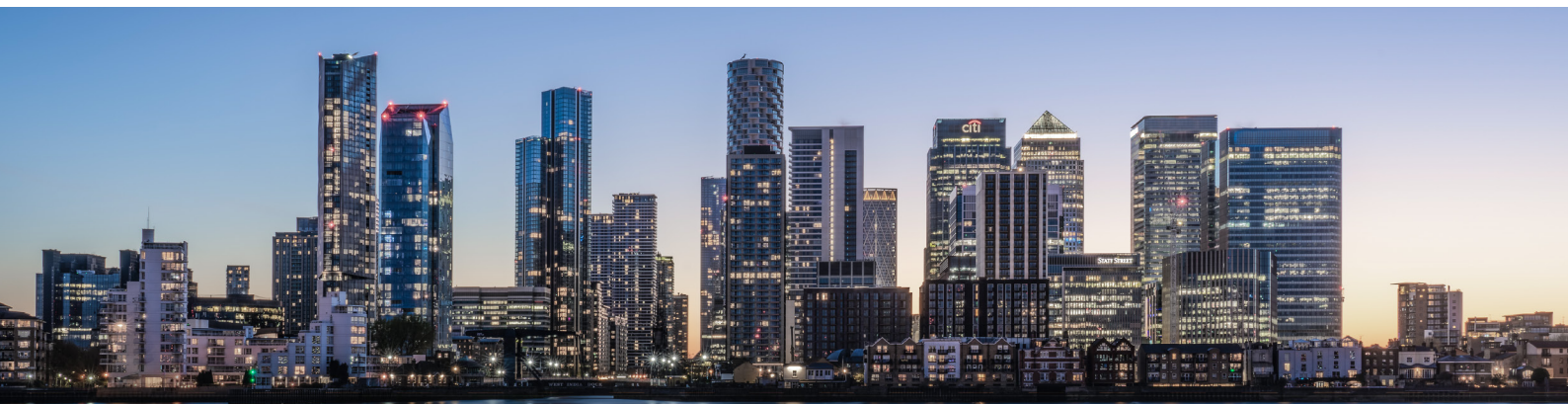


How Citi Eliminated Shadow IT with Enterprise-Grade Analytics



Problem

Proliferation of end-user computing (EUC) tools like Excel and Python created shadow IT and compliance risks.

Lack of standardized, scalable automation solutions for financial reporting, resulted in shadow tool usage.

Difficulty transitioning large, global operations to centralized platforms.

Solution

Deployment of a digital transformation team to remediate EUCs, automate reporting, and support robust lifecycle management with KNIME.

Adoption of KNIME with high availability architecture and enterprise-grade controls.

Results

Significant reduction in support costs and security risks.

Over 437 workflows created in 2024 alone, with global scaling across LATAM, North America, and more.

Vulnerabilities reduced 80% from 180 to 38.

Increased control due to better governed KNIME environment and increased productivity.

Problem: From Shadow IT to KNIME Adoption

With over 229,000 employees across more than 180 countries and 77 trading floors, Citi is one of the world's largest and most complex financial institutions. Their story with KNIME began back in 2014.

Managing global financial reporting, risk, and controls at this scale requires tools that are not only powerful and flexible, but also compliant with strict regulatory standards. However, Citi's reliance on spreadsheets and custom scripts had spawned a shadow IT ecosystem that posed serious risks in a highly regulated industry.

This was the trigger for a digital transformation that started KNIME adoption in Citi back in 2014.

80% reduction in vulnerabilities

Solution: Using KNIME to Tackle Risk and Launch a Digital Transformation

James Whelan leads the Digital Transformation team at Citi in Budapest. He was tasked with a high-stakes mission: remediating thousands of risky end-user computing (EUC) tools – like spreadsheets and ad hoc Python scripts – that had proliferated across the organization and increased the risk of data leakage, as well as financial, regulatory, and reputational risk.

These ungoverned solutions created operational inefficiencies and serious control issues, particularly in areas like financial reporting where accuracy and timeliness are critical.

“People are very skilled, and they want to provide their own solutions where they feel technology isn’t delivering... But shadow IT builds up, and it brings all types of risk and control issues.”

James Whelan

KNIME became the centerpiece of Citi’s strategy to solve this problem. Whelan and his small team of four built out a KNIME-based infrastructure to automate manual processes, support business-critical reporting, and bring EUCs under formal control. Their work covers the full development lifecycle—from infrastructure and workflow design to production deployment, support, and ongoing optimization.

Key to their approach was a power user model, where business users could initially build workflows, which the transformation team would then adopt, standardize, and productionize under Citi’s strict governance frameworks.

“Once we take something into production, it’s us. We own it, we support it, we run it through our lifecycle.”

James Whelan

Their responsibilities go beyond development. The team ensures KNIME workflows and infrastructure meet the demands of Citi’s technology mandates: single sign-on (SSO), release management, audit trails, vulnerability patching, server monitoring, and continuity-of-business testing. Building this capability from scratch in 2020 was no small task.

“Everything was red. It was a brownfield implementation. Nothing there. So we had to build it—and prove to all the various rules and mandates that we had implemented controls.”

James Whelan

By 2023, their work had paid off: KNIME was officially approved as a recommended tool inside Citi, a rare and hard-won designation in a tightly regulated environment.

**1,000+ unique
KNIME workflows
in production**

**Up to 750 data tasks
executed per hour**

**“The future of
KNIME is looking
pretty good in
Citigroup... It’s been
a fantastic journey.”**

Results: Efficiency, Risk Reduction, and High Availability

KNIME enabled Citi to drastically reduce both operational costs and regulatory risk:

- **Thousands of EUCs remediated** creating a more secure information environment and significantly reducing shadow IT
- **1,000+ unique workflows in production** with **437 workflows** created in 2024 alone
- **High availability deployments**, with up to 750 workflows being executed per hour during busy times, with 99.3% uptime
- **Significant reduction in support and security risks**
- **Support response times under one hour** during financial reporting peaks
- **Server uptime and resilience improved** via multi-executor RabbitMQ-based architecture

With 23 KNIME servers deployed across EMEA, a center of excellence in place, and rising interest across business lines, the journey is far from over. The team is actively planning to integrate KNIME into strategic applications as a backend ETL engine and using [KNIME Business Hub](#) for improved containerization, scalability, and compliance.

**“The future of KNIME is looking pretty good in Citigroup...
It’s been a fantastic journey.”**

James Whelan

Learn more about [KNIME Business Hub](#) and how it can help your organization or [schedule a demo with our customer care team](#) to see how it works in practice.