



# The Power of Coherent Spark



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## The Rise of Spreadsheets

750 million people use Excel for everything from simple spreadsheets to complex business models. These models enable businesses to make important decisions every day, like mortgage approvals and investment choices. How has Excel become so prevalent? And moreso, has it been used beyond its limitations?

Prior to Excel, programmers and business analysts in the 1970s went to a machine room to run code on mainframes. To get answers to any query, they had to return the next day. This 24-hour turnaround time for any idea was a norm that is difficult for us to imagine today.

When Excel was launched in 1985, it delivered the freedom to create models and get instant results. Analysts had the freedom to innovate and test ideas, and this freedom led to increasingly complex models that could be created without IT programming.



While subject matter experts enjoyed the ability to create complex business logic without having to wait months for IT projects to be delivered, siloed spreadsheets on desktops led to version control issues, errors, and a lack of visibility. The more complex models became, the more urgent the need for control and governance.

Allowing business experts to make changes to Excel-based models became a risk if there was no ability to track the changes. But expecting analysts to turn over their logic to IT and wait weeks or even months for a model to be coded in a cloud-based program, meant limiting innovation.

**“If we shut down Excel, we are shutting down innovation and freedom. It’s like asking analysts to go back to the 1970s and wait in line to use a machine room.”**

Barry Castle,  
VP of Solutions, Coherent



## The Risks of Spreadsheets

In regulated industries such as insurance, financial services and healthcare, transparency is expected and demanded. When a bank receives an inquiry from a regulator, they sometimes have 48 hours to respond with complete information about the transaction in question. Chats, emails, recorded phone calls, and trading systems are all trackable, but spreadsheets often are not.

One large bank was fined \$2M when they couldn't produce the spreadsheet model that was used to make a transaction decision. If the model had been written in a programming language where IT controls the code, this situation could have been prevented.

But many of these models are extremely complicated spreadsheets with millions of formulas that took months, if not years, to build. With the incredible depth of knowledge built into these models, the coding turnaround time is not surprising.

So how does a business operate when models take many months to code, but the inputs to the model are changing on a daily basis? And what level of risk do you introduce when manually translating Excel to programming code?

This is exactly why so many businesses, even those in regulated industries that are required to have visibility, have struggled to move away from spreadsheets. Losing speed-to-market and agility is often not an option.

**The ability of non-IT professionals to use Excel as a programming language has created a divide between business and IT in many organizations.**





**“There is tremendous intellectual capital that is stuck on a desktop. Enabling the subject matter experts to unlock that intellectual capital and work with their IT team in a meaningful way is game-changing”**

Peter Roschke, Chief  
Technology Officer, Coherent

## Why Spark?

Coherent Spark solves the inherent struggle between needing the flexibility of Excel, but also the control of cloud-based IT solutions.

Coherent is redefining how business and IT teams build software together. We understand solving today's business challenges requires the expertise of subject matter experts and the technology that powers controlled, scalable solutions.

Without organization-wide oversight, a tremendous amount of intellectual capital has become stuck on individual desktops. Enabling businesses to unlock this siloed intellectual property and enable subject matter experts to collaborate with their IT team is game-changing.

Coherent is bridging the business and IT divide by enabling subject matter experts to maintain the freedom and autonomy to use Excel, while bringing the IT benefits of scalability, cloud-based software, and control to Excel-based models.



# The 3Cs of Spreadsheet Modernization - Convert, Control, Connect

Converting, controlling, and connecting spreadsheets enables Coherent to bring a level of flexibility and acceleration to business modeling that wasn't possible with Excel alone. Elements of a model can be easily reused and embedded into other models with minimal risk. Subject matter experts can now assemble models with existing components, like Legos, rather than building everything from scratch.

This type of open library enables more speed and flexibility because the components are designed to be reused. Coherent unlocks the intellectual property of Excel experts in a way that wasn't possible before.

Coherent Spark converts spreadsheets into code in a cloud-based workflow in seconds compared to months. Daily changes to models can be uploaded, tracked, and tested in moments—not weeks—enabling a new level of control. Cloud-based code can be connected and easily integrated into a broader enterprise IT solution if needed.



By harnessing the flexibility of Excel and the power of enterprise-grade cloud computing, Coherent Spark provides a “best of both worlds” solution. Here’s how it works:

**Convert** your existing Excel models into enterprise-grade code instantly. Simply tag inputs and outputs and upload your model. No other coding is required, so analysts maintain the independence they want by using Excel and are not dependent on other teams or vendors for specialized skills.

**Control** the model with features like automated version history and assumption testing. Easily test thousands of combinations of your business logic directly in the Spark platform before you launch. Simulate assumption changes across millions of calculations to support strategic decision-making. With automated testing and regression analysis, you always understand exactly where your output came from and how that output varies as the model changes.

**Connect** your model with your enterprise software and other platforms, as needed. Dramatically accelerate the run time for complex models while gaining the controls and features expected of an enterprise-grade platform. Business analysts get cloud-based, connectable code without having to learn a programming language or wait weeks for a model to be coded.

The 3 Cs enable organizations to tackle a major area of risk and start gaining quick wins in digital transformation without significant investment. Coherent drives value in moments, not months.





# Spark Success Story: Convert

One global insurance company used a complex stochastic Asset-Liability Excel model to meet new international capital regulations for the cost of guarantees. The model included multiple scenario generation sub-models that create a large set of possible future economic outcomes. The size and complexity of the model resulted in a runtime of **8.5 hours for 1,000 scenarios**. They knew the model had to be converted to a cloud-based system to increase runtime and eliminate the user-defined functions in VBA that made documentation and verification difficult.

However, they anticipated coding the model into their existing actuarial system would take hundreds of programming hours. The actuarial team didn't want to and simply couldn't wait weeks, or even months, to be able to use this business critical model.

**Coherent Spark provided an alternative solution for converting the model.**

Actuaries were able to use the Spark to convert their model simply by tagging inputs and outputs. They maintained control of the model without specialized programming skills. IT saved hundreds of hours of programming time while gaining enterprise-level control of the model.

## The converted model had:

A runtime of **2-minutes**, a **99.6%** reduction from the **8.5 hours** they were accustomed to

**No VBA**

**Templates** for easy review of the results

An externalized assumption with **automated connectivity** to pull the right assumptions

**Model governance**

By using Coherent Spark, the actuarial team had access to better model testing, more control, and improved assumption management. And the transformation occurred with far less time and expense than with the legacy actuarial system.



# Spark Success Story: Control

A large bank was struggling to control its Corporate Actions (CA) rules engine. The inflexible system had 1,500+ rules and 80+ event types with the datasets sourced from a separate system. The existing system was managed by an outside vendor and viewed as a “black box.” The vendor took months to develop and test new rule implementations or enhancements and there was no visibility into how the rules applied to specific events. This system was expensive to maintain, dramatically slowing down the testing process and speed to market.

The bank wanted to develop an in-house rules system where they had control over the model, as well as enhancement. Coherent Spark was able to transform the third-party rule set into a Spark-compatible spreadsheet and then convert the spreadsheet into a working API.

With the dataset and full model on the Spark platform, the bank had full transparency and control into how the CA rules were applied and complete traceability of Corporate Action events.

## The results:

**Complete control** of the model and datasets

Accelerate testing by **78%**, reducing a 4-month process to **4 weeks** and increasing speed to market

**56% reduction** in third-party development and maintenance costs

Ability to easily **satisfy ISAE3402 audit requirements**

Adding control to the uncontrolled spreadsheets provided this bank with a level of visibility, auditability, and agility that wasn't possible before Coherent Spark.





# Spark Success Story: Control

One international life insurance provider faced various go-to-market challenges related to their digital growth platform, which encompassed a wide range of products. Strategic repricing posed a labor-intensive process involving a team of nine individuals, taking approximately 90 days to complete. Managing and maintaining complex actuarial pricing models became a struggle for them. They sought a solution that would facilitate faster and more accurate market entry while ensuring control.

Coherent Spark was seamlessly integrated into their Grow Digital Platform, offering a missing level of control, speed, and traceability. By leveraging Spark, in-house actuaries were able to enhance the functionality of Excel as the product model. The models for all 166 products were uploaded to the platform, extracting and converting all business and procedural rules into APIs. This enabled seamless digital purchase journeys across their complete product portfolio.

## The results:

Users gained the ability to manage, configure, and set up new products with minimal front-end work and without requiring backend changes.

Actuaries maintained the capacity to make model changes in Excel while enhancing API consistency for the Grow Digital platform.

Accelerated speed to market resulted in capturing approximately \$44M in VNB (Value of New Business) revenue.

Savings of 300 product development man-days and \$120,000 in project costs were realized.

By introducing Coherent Spark to their uncontrolled spreadsheets, the customer achieved heightened visibility, auditability, and agility, which were previously unattainable.



# Spark Success Story: Connect

A regional airline had complicated pricing models that varied based on the travel season. They needed to validate prices for new campaigns and connect them to customer-facing applications in a timely manner to meet the seasonable promotions. However, the validations of flight price calculations and campaigns were done manually in Excel models, resulting in long turnaround times. The airline knew they were losing market opportunities and customers because of the long development cycle but found developing a system to connect with the customer-facing applications time-consuming, complex, and beyond the scope of their in-house IT capabilities.

Coherent Spark was able to convert the Excel-based campaigns and flight price calculations and easily connect them to downstream platforms. The instant generation of APIs required no programming skills or engineering resources, which were in short supply for the airline.

## The results:

**2x faster** launch time of campaigns with validated pricing

**Fast, agile, and secure** models that were fully auditable and flexible for enhancements

New product rollouts required **minimal maintenance costs**

By replacing manual spreadsheets with a connected solution, the regional airline was able to go to market faster without waiting for or taxing their limited engineering resources.





# Business Benefits of Creating Scalable, Enterprise Business Software

Excel is universally used across every industry. With Coherent Spark, subject matter experts can create business logic and prototypes in Excel as they have always done. Spark automatically converts those spreadsheets into a connected, centralized component of your business processes. You get the flexibility of Excel with the performance, security, version control, and auditability of an enterprise system.

By converting, controlling, and controlling otherwise siloed spreadsheets, organizations gain several key benefits.

## Compliance, control, governance.

Coherent Spark enables organizations to be in control of their intellectual capital, which is often hidden in siloed spreadsheets. This enables business analysts to scale their models and reap the benefits of cloud computing while providing the needed visibility and trackability that executives want and regulators require.

## Risk management.

Errors in spreadsheets are all too common. Complex models have millions of cells, rapidly increasing the risk of errors in data entry and formulas. Without version control, every input change and every run of a model brings the opportunity for human error.

## Immediate revenue uplift, cost savings, and ROI.

Programming models can take months. Every model change requires a ticket that could be in the queue for weeks. Opportunities to model new products and launch new businesses are delayed. New revenue is lost. In Excel, models could take hours or even a day to run. Coherent Spark significantly reduces run time, meaning, meaning you get customers' decisions faster.

Coherent creates a partnership between IT and subject matter experts to provide control and governance. It enables IT to deliver business solutions much faster, reducing costs and improving business results.



# Ready to transform your spreadsheets?

Coherent Spark turns complex spreadsheets into automated workflows in seconds. Analysts can build and test Excel-based models directly in the Spark platform or connect the workflows to enterprise-wide processes. Models created in Excel by subject matter experts now have scale, control, and governance without relying on legacy systems or specialist programming skills.

## Explore Spark

Maintain the flexibility of Excel while simultaneously eliminating the inherent limitations of Excel.

Here are a few ways to learn more:

- 1 Check out our demo video
- 2 [Request a demo](#) for a guided tour of Spark