

## Meet Citadel X: The team of engineers at Ken Griffin's \$57 billion hedge fund giving it a competitive edge by streamlining and designing its tools

By Bianca Chan

- Citadel X is a team of about 20 engineers that leads user-interface design on the fund's tech tools.
- The team plays a key role as the front-office needs more customized tooling.
- Citadel X leader Kristofer Baxter walked Insider through the future of UI at Citadel.

Inside Ken Griffin's Citadel is a small team of engineers who are known to build new tools in less than an hour at the \$57 billion hedge fund.

"If you need a new application that solves a very specific concern, and you have a data feed for it? We can have a prototype of an app up and running for that in five to 10 minutes," Kristofer Baxter, head of UI for Citadel X, told Insider.

"Something can be really important on a Tuesday and you have to be ready to respond on that same day in order to help the business," Baxter said.

Baxter leads a group of around 20 engineers known as the Citadel X team, which is responsible for the hedge fund's user interface (UI) and user experience (UX) across its tech stack.

Citadel X works with various engineering and investment teams across the company with a goal of making sure the hedge fund's high-powered tools are easy to use.



Ken Griffin, the founder and CEO of Citadel.

The team's work can vary. One day UI engineers could be focused on ensuring the layout of a web app is proportionally spaced out. The next they're building new applications like dashboards to help traders and PMs easily see their positioning.

Much of the work is also behind the scenes, like building connections between different applications to mitigate the need to switch between them, or cut and paste info from one app to another.

While Citadel X's work might seem like it falls under the radar, it's proved critical as the hedge fund's employees need more complex and customized tooling and analysis to edge out the competition.

## How UI drives efficiency and developer productivity at Citadel

Citadel X initially served more as a SWAT team when it was first formed in 2020. The group would be called in to assist other engineering groups with a range of back- and front-end challenges.

That mandate persists today, albeit on a much larger scale. Some Citadel X engineers are now embedded onto desk teams to learn the ins and outs of the business and build new tech for them.

The group also builds standardized frameworks shared across the firm, which help to cut down on development time for other engineering teams.

Ross McKay, a front-end software developer within Citadel's equities business, put his team's many applications into the Citadel X platform.

As a result, McKay's team can focus on building for the business-specific needs of the equities front office, leaving Citadel X to handle everything from how the tool is eventually distributed to the typical maintenance of the code, McKay said.

"A lot of the guts we don't have to deal with anymore. That used to take up a lot of engineering hours throughout the year," McKay said.

## Moving beyond Excel

Citadel X has grown in size and remit as UI rises to the forefront on Wall Street. User experience is more important than ever, as traders and PMs increasingly rely on data and analysis to deepen their understanding of the market.

More information has meant more complexity, which has revealed shortfalls of the ubiquitous Excel, for example.

There's been a lot of movement across the board in the finance industry to try to migrate away from Excel, Stuart Surick, a technologist at Citadel for nearly a decade, told Insider.

"That's definitely something we've been focused on at Citadel," he added.

"It has a crazy amount of functionality, but for certain specialists, certain important workflows, it's not necessarily the best tool because it either provides too many features or too many operational risks. There are too many places where you can make a mistake," like cutting and pasting from sheet to sheet, said Surick, who currently leads the UI strategy as an engineer within Citadel's global fixed-income business.

To be sure, Excel is not going anywhere. Like cash and checks in a digital-first world, traders, investors, and bankers still depend on Excel. But it's becoming increasingly clear there are other, potentially better, means to an end.

"As people have different ideas and they've made too many Excel sheets locally, it's better to think about, 'How can we consolidate functionality? How can we create a really good application that does all these things that these five different spreadsheets do and make it nice,'" Surick said.

As Citadel moves beyond Excel, the Citadel X team is leading the charge on the firm's so-called "next-gen tool stack" of applications that are simple, easy to use, visually appealing, and can handle lots of information streaming in.

It's both an art and science. Some tools in that stack include multiple front-office dashboards and monitoring tools for risk and P&L. There are also order management systems that support a variety of cross-business functions, like treasury.

"There's a ton of information, there's almost an information overload. It's interesting to try and balance that: to make something that's very clear to the target audience, but also make sure that when they need to do something, it's not going to cause a possible mistake," Surick said.

## Interoperability between applications and 24/7 access

These days, much of the work the Citadel X team is doing is focused on inter-app communication, or the way that different tools work together.

Traditionally, technology was separated across different trading strategies, such as fixed income, equities, and commodities, which operated very independently from one another.

"When an investment professional needed to work across various applications, it was very hard to do so," Baxter said.

Citadel X is currently rolling out a new framework called Citadel One that can bring together applications built by different teams, Baxter said.

Normally, a PM wanting to analyze a piece of data in three different tools would need to manually move the information between applications, a time-consuming process that could lead to moving the wrong data. With Citadel One, all three apps update in real time.

The inter-app communication via Citadel One also streamlines workflows.

An equities trader looking through a list of companies they cover could speed up how they place an order thanks to Citadel One. By right-clicking on the company name and selecting 'Create place order' in one app, another app used for order-entry would automatically create a draft with pre-filled information.

The massive project took several months to launch, however the prototype was released within two weeks, Baxter added.

Another priority for Citadel X is mobile capabilities. Markets operate 24/7, and there's an increasing need for front-office workers to be able to respond in real time while away from their desks, Baxter said.

The challenge will be maintaining a high quality while avoiding rewriting applications from the ground up for mobile. It's a common problem when you start to try and support different types of operating systems, Baxter said.

"We're starting to figure out our approach here," Baxter said. "We don't have an answer yet to what we're going to do, but it's something that's on my roadmap to solve soon."