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I went from designing Xbox video games at a Microsoft-backed studio to a software job at Citadel Securities. I was surprised at how many of my skills transferred over.

Carter Johnson and Bianca Chan

- William Archbell works in engineering at the market maker Citadel Securities.
- Archbell had previously designed video games for a Microsoft-backed gaming studio.
- This is his story about changing careers, as told to Bianca Chan and Carter Johnson.

This as-told-to essay is based on a conversation with William Archbell, a 36-year-old senior software engineer team lead at Citadel Securities, a systematic market-making firm launched by the billionaire Ken Griffin and headquartered in Miami. It has been edited for length and clarity.

Being at home for two years commuting between my bedroom and my office at home was pretty draining. I was ready for a reset and to see what else was out there.

So after more than a decade in the gaming industry, I left a Microsoft-backed gaming studio called The Initiative, where I helped develop Xbox games. I joined the market maker Citadel Securities as a senior software engineer last September, and moved from Santa Monica, California, to Chicago, Illinois.

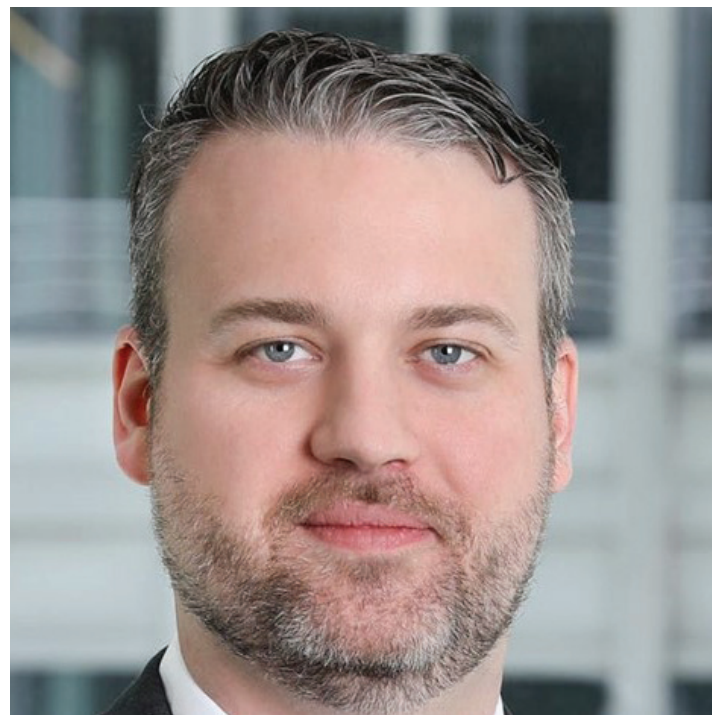
Now I work on central shared technology here at Citadel Securities, or tech that cuts across the business. I focus on building the platform technology between business units that enables them to move faster.

I didn't feel an obvious need to leave games — I was more just ready to go do something else and build in-person connections. And I've enjoyed that decision.

Understanding the product and how the customer will use it goes a long way in both fields

When you're building a video game, you're doing internal development before going public. Instead of value, you're optimizing for fun, and that's a really hard thing to target. We hire ex-professional players to come in, and we playtest, or try versions of the game, with them.

Having that product empathy, or putting oneself into a user's shoes to understand what they want, is really important. It's similar to Citadel Securities, where we take market data, we do research, and we run experiments to build tech that meets users' needs.



CITADEL SECURITIES

Citadel Securities' William Archbell.

Required skills are largely the same between the gaming and financial industries

Pretty much all games that have a budget of \$100 million or more are made in the programming language C++. It's a lot of what we use in finance as well.

C++ gives you a lot of low-level control, it's great for performance, and it's very easy to understand at the systems level. That coding language has a lot of properties that we care a lot about in financial trading.

There's also overlap between gaming and financial services on how quickly we have to work. In gaming, we might have to fit in accurate physics, animation, and other qualities in a very short frame of time. At

Citadel Securities, those milliseconds still matter a lot as we help other departments quickly send out quotes or pricing details.

Another similarity I didn't expect was the collaboration between teams. In video games, you have artists, designers, producers, and quality-assurance engineers. At Citadel Securities, we have traders, quantitative analysts, developers, and more.

To be successful as a gameplay engineer, for example, I've been paired up with designers with a spectrum of technological skill sets, from being completely nontechnical and just working in Microsoft Office. We have that same spectrum here at Citadel Securities.

But it's an adjustment to get used to the massive scale of the finance sector

I've been part of designing entire backend systems for games, with microtransactions and complicated player progressions. Coming to Citadel Securities, it is actually significantly larger than what I've worked on in games. The breadth and size of the business really surprised me. And understanding the impact and the scale it has across the industry

is pretty interesting.

But there's always tension as you scale up. We have a larger team. We have more technology, processes, and things that we need to make that size successful and work for us. And we need to do that in a way that reduces risk and meets compliance.

You have to be ready to move fast and iterate often

One of the reasons my team exists is to derive efficiency. If you're fast, you have the ability for people to change things without fear or without things going wrong. You'll be able to make great things.

In gaming, iteration is very important. You have an idea; it might not be great, but you spend time on it, and you make changes, and that's how great games are made. What's very similar here at Citadel Securities is that ability to quickly iterate on ideas, to try new things, to test them and figure out what's working and what isn't.

But the difference is that at Citadel Securities, the key performance indicators are profit and loss. And in games, that's fun and then profit and loss.