Institutional Investor's
alpha

BUILT TO LAST

AS CHIEF OPERATING OFFICER OF CITADEL, **GERALD BEESON** HAS PLAYED AN IMPORTANT ROLE IN DEVELOPING THE INFRASTRUCTURE AND TECHNOLOGY THAT HAVE HELPED THE CHICAGO-BASED HEDGE FUND FIRM STAND OUT FROM ITS PEERS.

PHOTOGRAPHS BY PETER WYNN THOMPSON

BY AMANDA CANTRELL

"We have to make sure that our infrastructure supports what our investment professionals do each day"

W

WHEN GERALD BEESON GRADUATED FROM COLLEGE in 1994, he had a plum job lined up: One of his professors at Depaul University had helped the finance and accounting double major land an offer from prestigious accounting firm Deloitte & Touche. The potential pluses of such a job — great benefits, good pay, job security — were not lost on Beeson, whose background as one of four children of a Chicago cop and a homemaker mother was decidedly blue-collar.

But the bright and ambitious Beeson, who was the first in his family to go to college and attended DePaul on a full academic scholarship, infuriated his professor by turning down the job in favor of a markedly less cushy position working for a relatively unknown 20-something hedge fund manager. Beeson had interned for him during his junior year, and when the manager offered him a job, he jumped at what seemed like a rare opportunity to learn about the world of trading without grinding it out in the pits of the Chicago Mercantile Exchange or Chicago Board of Trade.

That manager was Kenneth Griffin, and the firm Beeson joined eventually became Citadel. When Beeson started as an intern in 1993, he was one of just 18 people, first working as an associate in the accounting team; the firm managed approximately $100 million at the time. He quickly rose through the ranks, taking on the job of controller at age 25 while simultaneously pursuing an MBA at the University of Chicago.

Today, Beeson, 42, is chief operating officer of Citadel, which now manages $23.7 billion in assets and employs more than 1,200 people across its various businesses. The firm runs four hedge funds investing in numerous strategies — including multistrategy, equities, global fixed income and tactical trading — and Surveyor Capital, another equity strategy. It also operates Citadel Securities, which encompasses the firm's Global Quantitative Strategies trading business as well as Citadel Execution Services. CES trades more than 850 million shares per day in equity markets on behalf of retail clients.

"My role is to provide direction around the infrastructure of the firm that supports our business," explains Beeson.

His boss puts it more simply. "He is responsible for much of the backbone of what makes Citadel happen," says Griffin. "I love working with people who are able to identify problems and create solutions. Gerald is really good at that." One thing that sets Citadel apart from its peers is its approach to its own infrastructure and technology; Griffin and the firm's investors say Beeson has played a major role in the development of both. In its early days Citadel created its own proprietary systems, ranging from back-office and accounting functions to hedge fund administration, rather than relying on those developed by third-party vendors. It was one of the earliest hedge fund firms to establish its own stock loan desk and the first to issue investment-grade bonds, in 2006. Several years before the financial crisis of 2008 — when the firm's main multistrategy funds fell 55 percent — Citadel set up its own triparty funding system. Griffin says this system helped the firm obtain its investment-grade credit rating and hold on to it at the height of the crisis, when the credit markets seized up and put many other hedge fund firms in jeopardy — or out of business.

"ANY TIME YOU HAVE A WELL-KNOWN FIRM, WHETHER IT BE A FINANCIAL FIRM OR A CONSUMER COMPANY, THEY'RE A POTENTIAL TARGET."

"Our infrastructure is built around a real-time mind-set. From the moment we execute a trade, it's reflected throughout the entire set of books and records of the firm, allowing us in real time to know the impact on risk metrics and the overall liquidity profile of the firm," says Griffin. "Gerald has been critical to making this possible."

Griffin says the toughest part of Beeson's job is the breadth of problems he faces, from recruiting new hires to funding the firm's portfolio to communicating with investors. Lately, the list of issues has been expanded to include protecting Citadel from cyberattacks. Though Citadel has a separate head of technology, cybersecurity is top of mind for Beeson, especially given that technology has been essential to the firm's success. Both Beeson and his boss say cybersecurity should be a major area of concern for all hedge fund firms. "We have been at the forefront of technology since the firm began," says Griffin. "We use a number of solutions to protect ourselves from the bad actors around the world. Cybersecurity is a challenge for every firm, every day."

Alpha Managing Editor Amanda Cantrell recently met with Beeson to discuss cybersecurity and the other challenges Citadel faces — and what it's really like to work for Griffin.

Protecting Citadel's intellectual property is one of Beeson's toughest tasks

Alpha: Is Ken as tough a boss as people say?

Beeson**:** He is a demanding person. But I think that one of the great things about working with him is, while he is demanding, he's tremendously empowering. I progressed at a quick pace throughout my career because I had to take command of a number of widely varying issues and was given the support to attack them with confidence. Also, it is always a challenge in that when you need to discuss an issue with him, you better be incredibly prepared, because you never know how deeply he may want to explore that issue and you need the facts to support a specific recommendation that you're making. I think there are people who thrive in environments like this.

Ken has the ability to know as much about a particular aspect of our business as the person running that part of the business, whether it's a financing-related issue, a particular accounting issue or something about technology. He and I have worked closely together on the strategic aspects of our business, and he is as detailed in that discussion as he is about the direction of the ten-year Treasury and the factors driving it.

Can you give an example of a really difficult challenge he set and how the firm was able to meet it?

The head of prime brokerage for one of the investment banks came in to meet with me, Ken and members of our Treasury team in June of '03. He was making a pitch for why we should do prime brokerage funding with them, as we didn't at the time. He went to a whiteboard and drew in great detail how other funding mechanisms worked: The bank borrows money and securities from these pools, and it has this type of infrastructure, et cetera — none of which we had. The executive went through the details for probably two hours, and at the end of it he said, "This is why you should be doing your financing with us." We thanked him and said we'd think about it. After he left the room, Ken came back in and looked at me, pointed to the whiteboard and said, "You have nine months to get this built."

We didn't do any of that type of activity at the time, so we had to bring people together who had the requisite backgrounds to build it, which was an enormous task. We had to create new frameworks, build the technology infrastructure and put the funding relationships in place. We got it done, and it was almost six months to the day when we executed our first trade into this form of funding.

I don't think a similar program exists in the hedge fund industry today — or at least to the scale we support daily. This infrastructure supports everything we do. It processes millions of transactions a day. It funds billions of dollars of balances every day, borrowing money and borrowing securities almost on a fully automated basis. Over the almost 22 years I've been with the firm, it's one of the most important things we've ever done.

How so?

In 2008, when many firms were losing access to funding — and we clearly went through our own troubles from a mark-to-market perspective — we did not lose control over the funding of our balance sheet. The differentiated funding platform we'd put in place and the durable relationships and terms we had with our financing providers enabled us to get through a difficult dislocation in our business. The infrastructure investment we'd made in prior years was critical. When firms lose control of their balance sheet, it is game over. Fortunately, we did not have that problem.

What are the biggest operational challenges you face as COO?

One is building an infrastructure that has the requisite scale to ensure that we have a well-controlled business. First and foremost, we have to be sure we have all the appropriate controls around all aspects of our business and make sure that our infrastructure supports what our investment professionals do each day. That's job No. 1.

Job No. 2 is working with our external constituents, including our investors, counterparties and business partners, to ensure that we have the right relationships in place and the right bridges built. No. 3 is working with the management team as we look to implement new areas of growth for the firm, making sure that our ideas are flawlessly executed. At the same time that we are building new businesses, we are constantly evolving our existing businesses to position ourselves for the best opportunities.

Speaking of challenges, let's talk about cybersecurity. Do you think hedge funds are more vulnerable to cyberattacks now that they're stepping in to fill some of the voids left by banks?

I don't think hedge funds are necessarily more vulnerable. Hedge funds are playing a larger role in the capital markets more broadly. Any time you have a well-known firm, whether it be a financial firm or a consumer company, they're a potential target if they have intellectual property, valuable customer relationships or other forms of data. While we don't have the point-of-sale issues you read about so often, we pay close attention to cybersecurity issues impacting firms across all sectors, not just finance, to learn from those events and improve our controls. I'd say the risk to firms like ours predominantly revolves around intellectual property.

> **"OUR INFORMATION SECURITY CONTROLS ARE IN PLACE. THE MORE RELEVANT PROBLEM IS HOW WE ENSURE THE MITIGATION OF OPERATIONAL RISK."**

Citadel has had some issues with that. [The firm has sued ex-employees that it claimed tried to steal its proprietary trading secrets.] How do you protect your intellectual property?

It's a tough issue, for sure. From an internal perspective, the first layer of defense is that you make sure you have the right people on the team. We go through an incredibly aggressive and rigorous process to determine the hires we will make across the business. The focus includes an effort to hire team members with high integrity in order to mitigate the likelihood of an internal problem.

From an external perspective, we have 400-plus technology professionals at Citadel. It's about a third of our workforce. They are involved in areas ranging from systems administration all the way to the sophisticated programming that supports our quantitative and fundamental businesses. These team members work closely with our information security group, which is dedicated to preventing network and security issues and making sure we have the right safeguards in place. If there is an issue that develops in the marketplace unrelated to our firm, we study it closely and ask ourselves, Are we being aggressive enough to prevent this from happening at Citadel?

Can you give us an example?

Reducing risk to potential attacks through technology is critical. We consistently invest in our systems and eliminate legacy technology to keep our infrastructure up to date. We focus on prevention, detection and resolution of potential cyberthreats. We examine how we can minimize a problem should one occur. We scan our proprietary code base and monitor the age and frequency of its use. We frequently refresh our code base and turn off systems that we don't use in our current business. Preventing the proliferation of legacy technology is a key to risk mitigation. We work with third parties to test our systems. I was at a program for corporate leadership at [executive leadership organization] G100 recently, and many firms talked about doing this as well.

Finally, we know what's coming into the firm and analyze it on a regular basis. As an example, it's staggering the amount of e-mail that comes in on a monthly basis. We have stats around how much of it is malware and how much of that malware was actually a potential threat. When our new CTO, Joe Squeri, joined us earlier this year, he made more of us aware of this kind of data, so we are all appropriately sensitive and prepared.

> **"ONE OF THE GREAT THINGS ABOUT WORKING WITH KEN IS, WHILE HE IS DEMANDING, HE'S TREMENDOUSLY EMPOWERING. I PROGRESSED AT A QUICK PACE THROUGHOUT MY CAREER BECAUSE I WAS GIVEN THE SUPPORT TO ATTACK WIDELY VARYING ISSUES."**

What about the fact that you run market-making and electronic trading businesses? Do those make you a little bit more vulnerable to cyberattacks?

Our information security controls are in place across all our businesses. The more relevant problem is how we ensure the mitigation of operational risk. As an example, if someone puts in an order that they've fat-fingered — there are systems in place to shut that down. These are tested regularly.

One thing that's tricky is trying to figure out how vulnerabilities in the system could affect the whole of the financial sector and not just individual firms.

If something happened to a particular firm, I don't envision it being a problem for the system as a whole. The better question is, If something happened to undermine points of connectivity in the financial system, say at the exchanges, what is the impact?

Can you tell us a little bit more about the firm's market-making operation?

In Citadel Securities the two primary activities on the market-making side are options market making and equity market making. We are market makers on every major options exchange in the U.S. We have a major electronic presence and serve as a specialist, meaning we trade in 99 percent of the available market. It's a business we built from scratch starting in 2002.

The equity market-making business is a bit different in that we have customers who direct order flow to us. Think of retail brokerage firms such as Scottrade, Fidelity, Ameritrade, Merrill Lynch. We have more than 100 top firms as clients, sending us their retail orders in more than 25,000 securities, ranging from blue-chip and Russell 2000 equities to pink sheets, gray sheets and Bulletin Board securities. On an average day we trade about 14 percent of U.S. consolidated volume. We are the No. 1 market-making firm in the country, and it's a business we developed in 2005 on the back of what we built in the options market.

That seems like an unusual move, for a hedge fund firm to build businesses like this.

We have a unique story in that we have built two different, separate businesses. The common point is that we understand and appreciate the importance of sound market structure and what drives the price of a security.

We're cognizant of the need for deep, liquid, transparent markets and a sound, robust market structure that underpins investors' ability to quickly, easily and inexpensively deploy capital. We are major market users, and we have been active advocates for market structure improvements over time.

As we see the evolution of derivatives market making becoming more electronic, there will be a need for greater competition among electronic market makers — just as there was in the equity market years ago. We see opportunities to build out capabilities in interest rates and credit derivatives market making in the years to come.

Citadel has enjoyed a tremendous amount of growth, in the past 12 months and particularly since 2008, when the firm had a near-death experience. What did you learn from that?

It was not pleasant, as you can imagine. It was 16 incredibly long weeks. In terms of what we learned, I would say that we realized that we are strong at investing in certain strategies and asset classes. In 2008 we made the decision that we would focus on businesses where our human capital — our people — give us a distinct competitive advantage when it comes to committing capital in a measurable way. The necessary changes to our business model weren't a story that played out over the next three years. We literally banged out what we needed to do in the last few weeks of '08 and the first few weeks of '09.

We also learned a lot about our culture. These are lessons that you simply can't learn until you go through a period like we did. It spoke to the commitment our team has to the firm we have a hand in building. The integrity and perseverance of the team — and ultimately, the can-do attitude — enabled us to get beyond that period and restore Citadel to the reputation it had earned in the previous 18 years.

How do you think the firm is situated to deal with future challenges, whether market or operationally related?

Next year Citadel will celebrate our 25th anniversary. I believe our business is better positioned than at any point in our history. The team members and talent, the stability of our capital base, the quality of our investors and the scalability of the businesses on our platform — I don't think we have ever been in a better position than right here, right now. a