

DATA-FIRST THINKING

REFINITIV[®]

DATA IS JUST
THE BEGINNING[®]



**THE FUTURE
OF TRADING:
THE PEOPLE**

**80%**

of capital markets professionals believe technology has provided them new career opportunities.

EXECUTIVE SUMMARY

The future of financial services will be a true merger of the best of both human and machine.

Investing and trading decisions will leverage human intuition while data analysis and trade execution will become increasingly automated and more efficient.

The first two reports in our Future of Trading series explored how technology and the growth of data have kept markets moving. However, the full picture would be incomplete without a better understanding of how these changes are impacting traders on the desk.

Our third report with Greenwich Associates explores the evolving role of people in the trading process and how responsibilities on the desk could

shift over the next 3-5 years. Learn why 80% of capital market professionals say technology has provided them with new career opportunities, why computer science and engineering backgrounds are prevailing over traditional business degrees, and how the roles of the buy and sell side will change.

We invite you to read “The Future of Trading: The People.” Kevin McPartland, Head of Market Structure & Technology at Greenwich Associates, discusses findings from this online survey of 107 market professionals, globally, which were analyzed by firm type, region and generation.

We believe you will enjoy this thought provoking study. At Refinitiv, we remain committed to providing traders with data and the technology to power the future of trading.

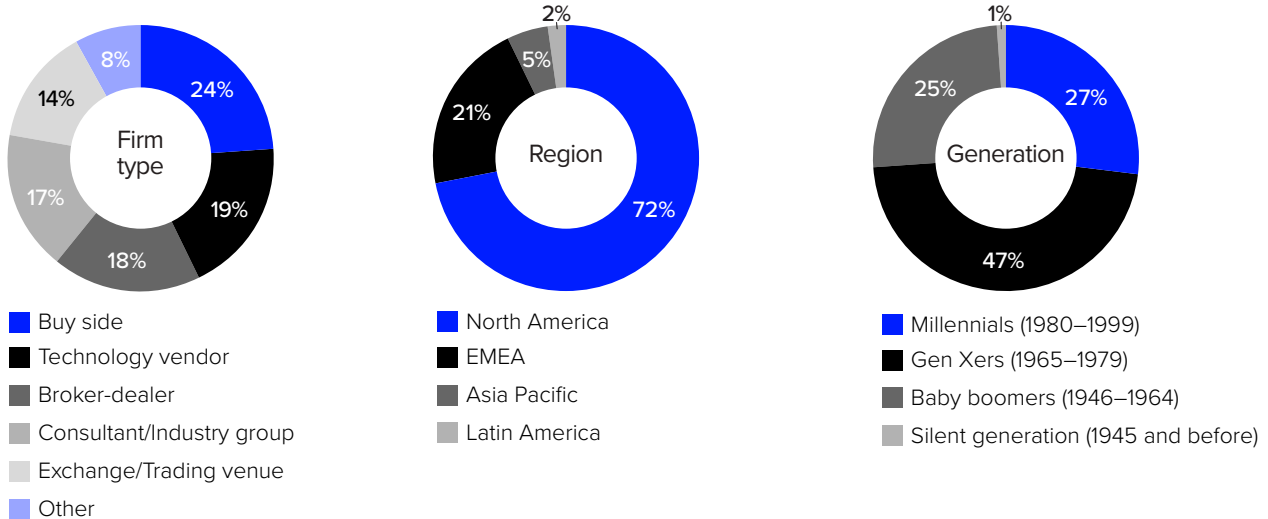


Michael Chin
Managing Director and
Global Head of Trading
Proposition,
Refinitiv

Methodology

In April 2019, Greenwich Associates conducted an online study with 107 capital markets professionals globally. The study examined the technology trends, the data explosion and the skills required to be successful in capital markets in the future.

RESPONDENTS



INTRODUCTION



Our first two papers in this series¹ defined how technology and enhanced data access have

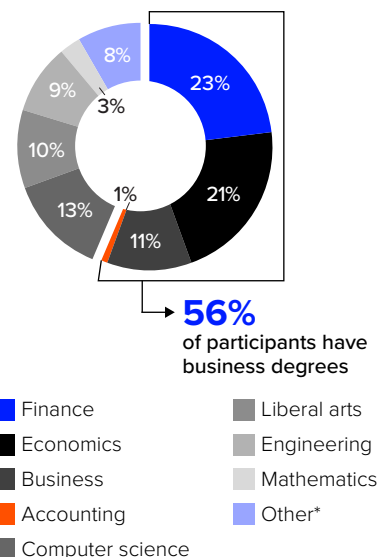
fundamentally changed the markets and how industry professionals expect that to continue in the coming years. However, it is important to remember that despite advances in artificial intelligence and data analytics, people are still in charge. Examining the future of trading without understanding the evolving role of people in the trading process would create a hugely incomplete picture of what is likely to come. Simply put, someone still has to program the robots and talk to the customers.

Of the 107 financial markets professionals we spoke with for this research, only 56% have finance-related

university degrees. While finance remains the most common education path, nearly as many financial markets professionals possess degrees in either computer science or engineering.

To many this will come as no surprise, as the markets have been heading in that direction since the start of the 21st century. It speaks to the ever-increasing importance of not just programmers but also quantitative analysts and, increasingly, data scientists. This is, in part, why new degrees in quantitative finance have grown in popularity over the past decade. The focus of trading-desk programmers is less geared on (or to) user interfaces and increasingly focused on advanced analytics, algorithms and process automation—solutions that need deep knowledge of both financial markets and technology.

RESPONDENTS—EDUCATION



Note: Based on 107 respondents. *Other includes Client Analytics, Management & Technology, Law, Education
Source: Greenwich Associates 2019 Future of Trading Study

¹ <https://www.greenwich.com/market-structure-technology/future-trading-technology-2024>
<https://www.greenwich.com/market-structure-technology/future-trading-redefining-data>

CAREER ADVANCEMENT

Recent narratives have led the world to believe that technology is replacing humans at every turn.

Four percent of baby boomers, 4% of Gen Xers and 7% of millennials told us that technology innovation has limited their career opportunities. But those perceptions, as the percentages suggest, are the exception.

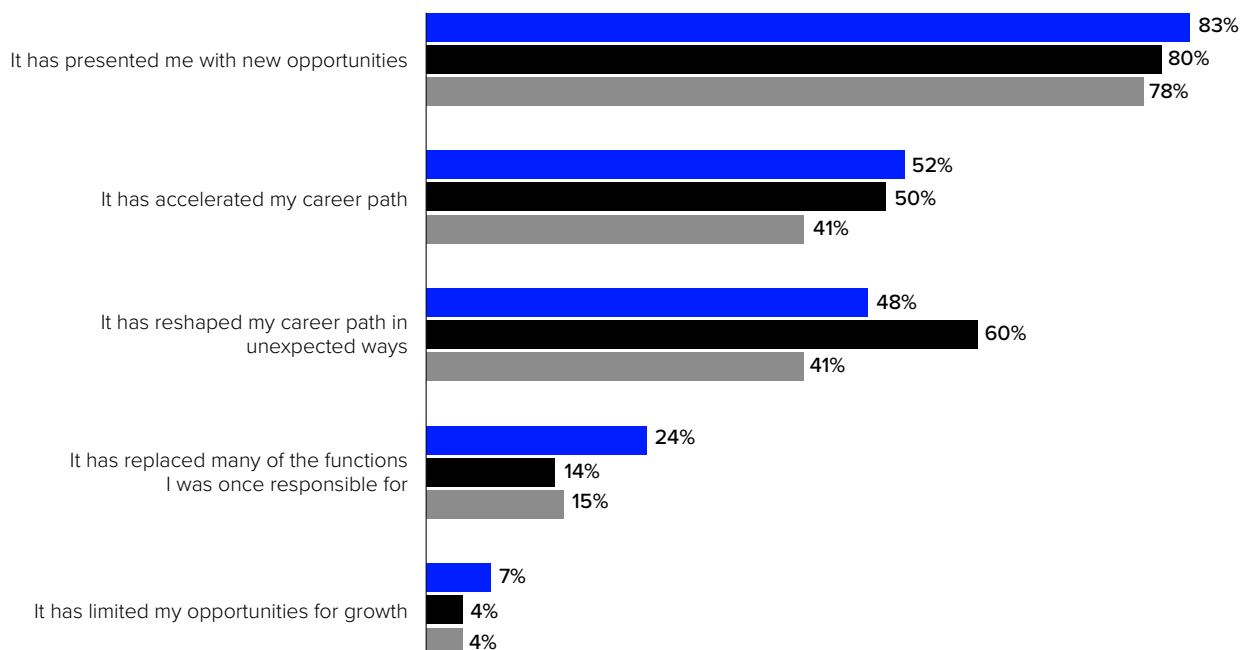
The vast majority of financial professionals feel that technology innovation has, in fact, enhanced their career thus far. Roughly 4 out of 5 finance professionals feel that technology innovation has presented them with new opportunities, and

about half say that it has accelerated their career growth. While the positive sentiment is slightly stronger among the digital-native millennial crowd, Gen Xers and baby boomers are similarly excited about the impact of the market's digitization on their job progression.

The career experience of Gen Xers, those born in the late 1960s and 1970s, is particularly interesting in this context. Sixty percent of Generation X—most of whom are in the prime years of their career—feel technology reshaped their career in unexpected ways. This compares to only 41% of baby boomers and 48% of millennials.

The majority of Gen X came to Wall Street and New York City during the first dot-com boom—a time when technology was just starting to demonstrate its potential to upend the status quo. Fast forward to today and it has become commonplace for traders and bankers to transition off the trading desk into fintech firms—sometimes as employees but often as founders. Most of this group worked very hard to get their coveted spot in the front office and never expected they would find themselves building or selling technology later in their career, in jobs that in many cases didn't even exist two decades ago.

TECHNOLOGY IMPACTS ON CAREER

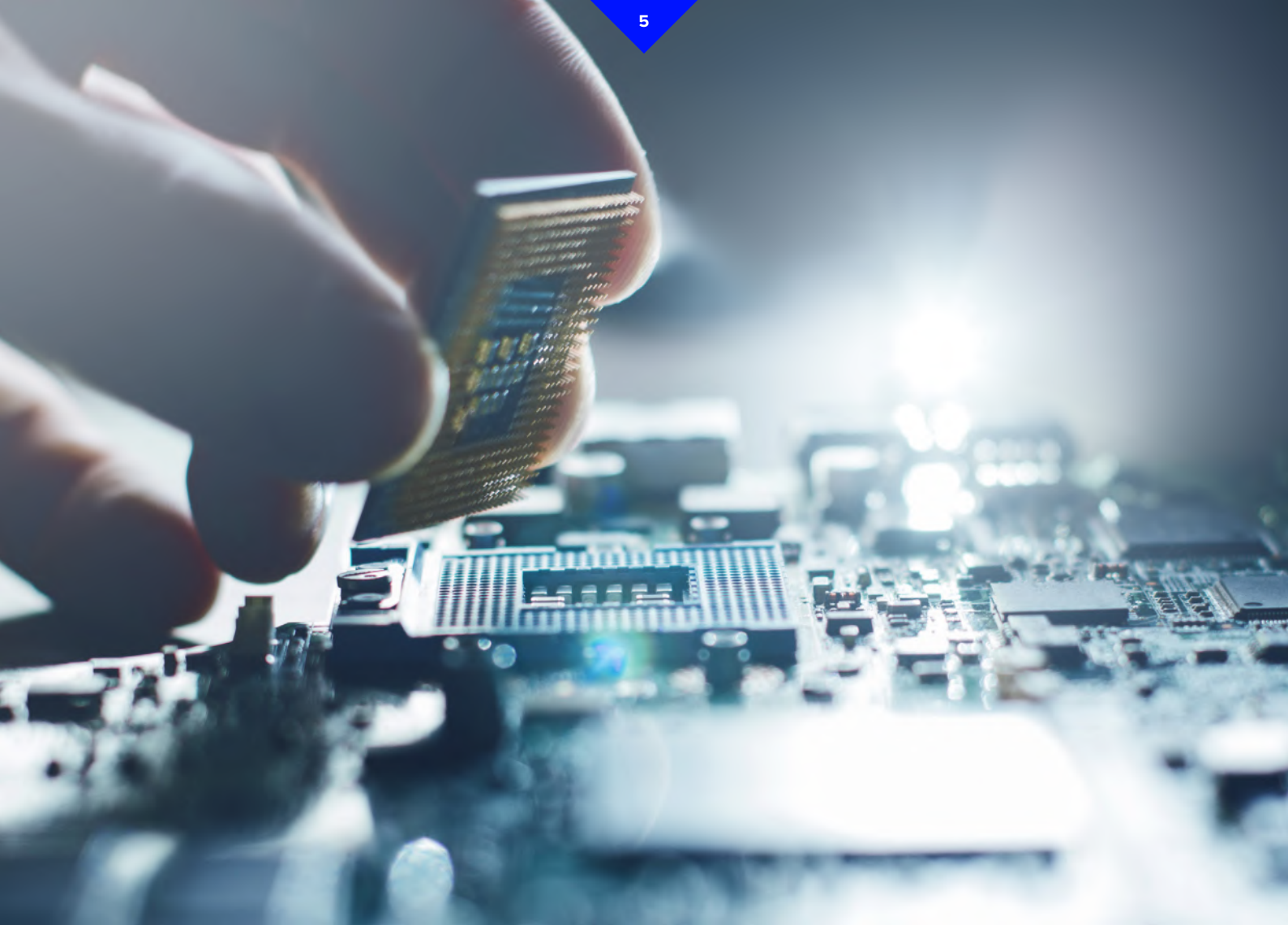


■ Millennial—born 1980–1999 (29)

■ Gen X—born 1965–1979 (50)

■ Baby boomer—born 1946–1964 (27)

Note: Based on 107 total respondents (numbers in parentheses are respondent bases).
Source: Greenwich Associates 2019 Future of Trading Study



THE ROBOTS WORK FOR US

Jobs data from the U.S. Bureau of Labor Statistics provides further quantitative proof that people are still in charge.

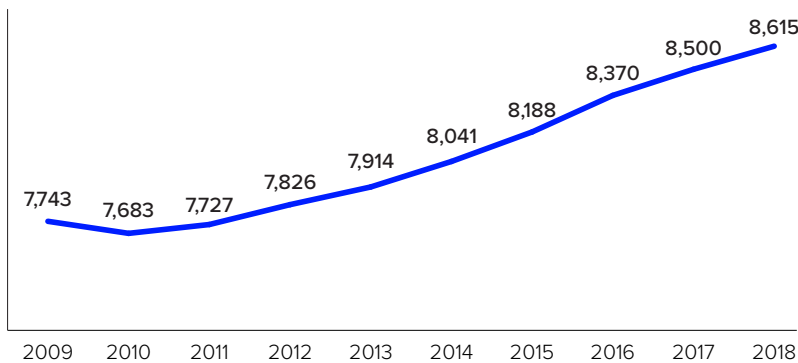
Roughly 1 million finance jobs have been added in the past decade, following the lows of the financial crisis, growing nearly 12%. As we have demonstrated above, the nature of these jobs and skills required have changed. While those that know the markets and can work with clients remain highly valuable, those with technical expertise, particularly when it comes to data science, are increasingly just as important to long-term success.

This, in part, explains why only 15% of respondents are worried that technology will replace them. While it proved a tough time for many, the financial crisis shook the jobs tree, leaving market participants with only their most highly valuable employees when all was said and done. In rebuilding their rosters over the past decade, capital markets firms have brought on those individuals who are expert in solving today's problems, not those with past expertise. Of course, there have been bouts of rightsizing across the industry in recent years, but it is important to remember that anytime a job is lost to automation, another exists somewhere to build and maintain those computer algorithms.

15%

of capital markets professionals believe their job is at risk of being replaced by technology.

NUMBER OF FINANCIAL EMPLOYEES



Source: U.S. Bureau of Labor Statistics

Roughly 1 million finance jobs have been added in the past decade, following the lows of the financial crisis, growing nearly 12%.

Automation will expand in nearly every facet of the trading process: in data analysis, trade processing and, of course, trading itself. But we should rethink our preconceived notions of what automation does to jobs and look toward the opportunities presented and away from jobs that automation might make obsolete.

First, automation allows valuable and often expensive employees to focus on even more valuable tasks throughout the day. Two-thirds of finance professionals expect 25% or less of their job to be automated in the next 3–5 years—and that’s a good thing. Every employee in the industry would love to see the more mundane parts of their job better automated, and more and more people will see that dream come true.

While some might take that extra 25% of their day to drink more coffee, most will spend more time on revenue-generating or cost-saving activities that increase their value to the firm.

Second, automation cannot be deployed with a “set it and forget it” mentality. Whereas traders need trading and executive assistance, software needs developers, testers, business analysts, and front-line tech support.

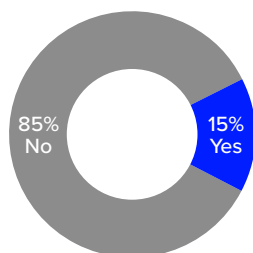
For instance, before Dodd-Frank electrified the swaps market in the U.S., trades were done over the phone between an investor and dealer. The manual approach brought with it the opportunity for a lot of human error, from incorrectly entering the execution price into the system to not recording

the trade altogether, leaving the firm unknowingly exposed to millions of dollars in losses. However, the process was easy. When the phone was hung up, the trade was done.

Today, much of the opportunity for human error has been removed from the system, massively limiting counterparty, operational and other risks—a good thing for the market and the safety of the world’s financial system. However, the complexity inherent in the web of technology that manages the process from pre-trade to post-trade and beyond presents a new set of risks that must be closely monitored and managed. Most agree that the new way is much better than the old way, but the best and brightest are crucial to keeping that train on the tracks.

TECHNOLOGY AND AUTOMATION

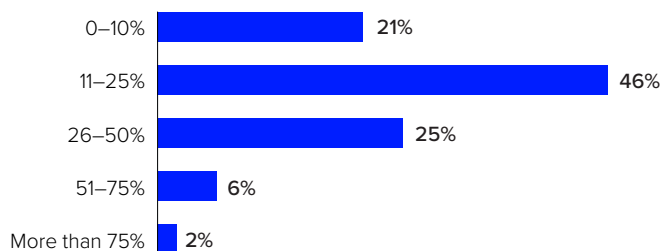
Proportion Concerned Technology Will Replace Current Job

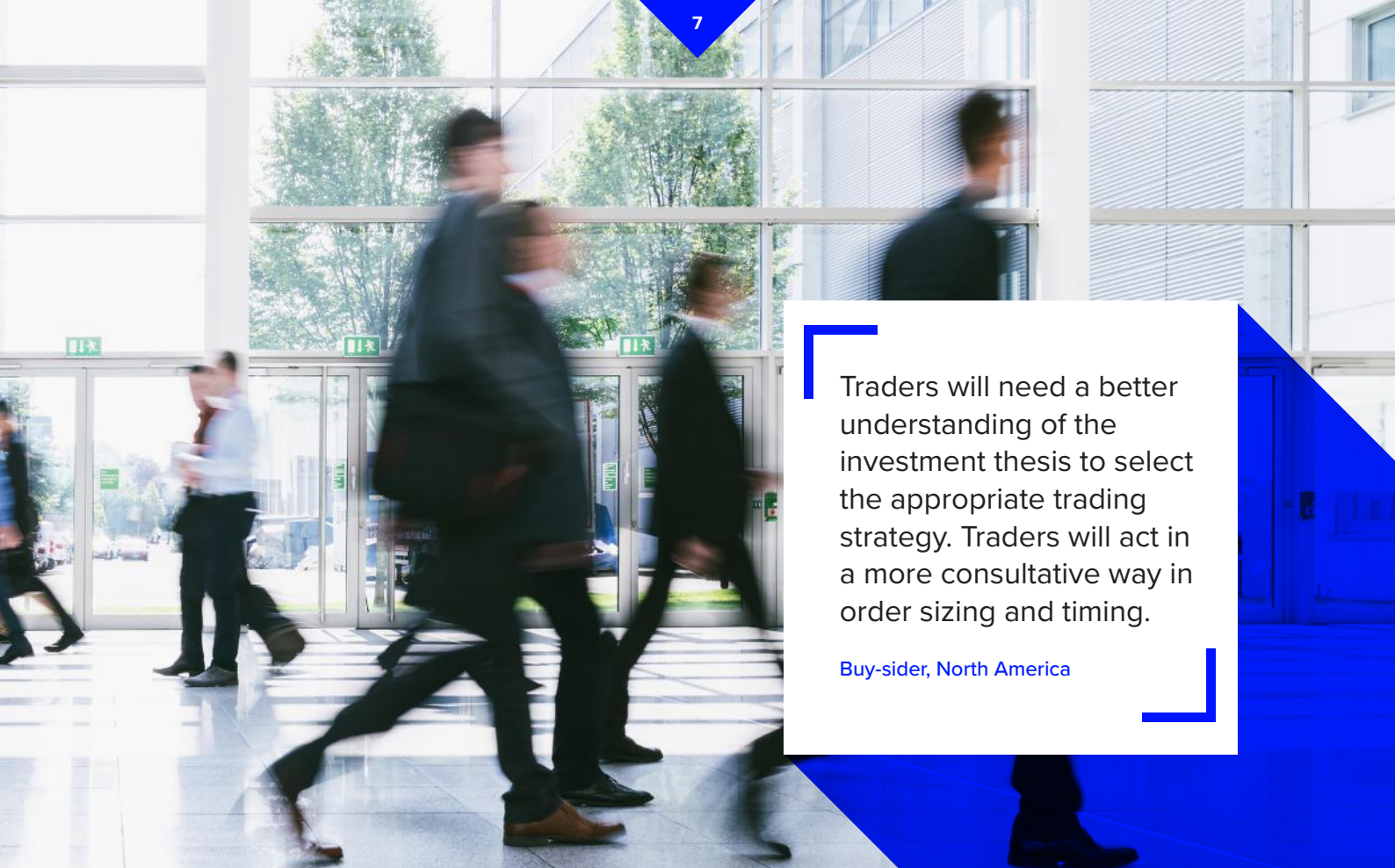


Note: Based on 107 respondents.

Source: Greenwich Associates 2019 Future of Trading Study

Projected Automation of Daily Activities Next 3–5 Years





Traders will need a better understanding of the investment thesis to select the appropriate trading strategy. Traders will act in a more consultative way in order sizing and timing.

Buy-sider, North America

RELATIONSHIPS IN THE DIGITAL AGE

Technology innovation isn't just about complete automation, but helping to make capital markets interactions between people more efficient. The buy side will continue to look to the sell side for market color, capital commitment, research, and other value-added services but is increasingly seen as having the [information advantage](https://www.greenwich.com/blog/us-fixed-income-investors-increasingly-feel-they-have-information-advantage)²—a big change from a decade ago.

The sell side, therefore, must continue to grow its use of digital communication tools, not only to chat and discuss trades, but also to collaborate more broadly. Trade ideas today aren't as simple as “buy this stock because the company's

fundamentals suggest it will go up.” Trade ideas have morphed into idea discussions that often include interactive charts and historical data that both sides view, adjust and mark up in real time. We and others have written about the “digital native” generation coming into the market and the impact that will have on the trading desk. We have news for you: That time is now, and the digital generation and their ability to collaborate in real time without speaking is upon us.

The relationship between buy-side traders and portfolio managers hasn't escaped technology innovation, digitization and automation either. The automation of trading will transform traders into execution consultants, not

terribly dissimilar to what happened on the sell side a decade ago. Knowing how to code will not always be a job requirement, but knowing how to talk the talk will. And portfolio managers will arguably be one of the biggest benefactors of technology innovation in the next three to five years. More data, artificial intelligence and access to nearly limitless compute power in the cloud mean they can test more investment ideas in a fraction of the time. Even ETF managers will find themselves able to issue new and innovative ETFs that only years ago would have been too difficult to price and risk-manage day to day.

² <https://www.greenwich.com/blog/us-fixed-income-investors-increasingly-feel-they-have-information-advantage>

JOBS IN 2024

In 1995, programming was treated most often as an operations function, done away from business leaders. Technologists were only on the trading floor when they needed to gather requirements for a new system or when something went wrong.

Most trades were still written on paper tickets and handed to a clerk or junior trader to punch into a single terminal. Order management systems had started to find their way onto trading floors, but they were still new, basic and often built in-house. And in this environment, data was ingested primarily by human eyes, with candlestick charts and spreadsheets being the primary means of consumption. Trading floors even had ticker tapes that traders actually looked at and acted upon by calling someone or making a few mouse clicks.

Fast-forward two decades. Nearly everyone programs on the trading floor or at least knows how to. Programming classes begin in elementary school, so getting to Wall Street without that knowledge is nearly impossible.

Trading and investing decisions are still overseen by the best and the brightest, but the data consumption, deep analysis and execution of those trades and investment ideas are all done via machines. Traders act more like commercial airline pilots, keeping an eye on the autopilot and only stepping in when something goes wrong, the route changes or the landing is more complicated than usual.

But trust still matters, with firm and personal reputations continuing to play a huge role in which businesses succeed and which do not. Complex markets, such as those for structured derivatives and private equity, will

still operate with a tremendous amount of one-on-one negotiating. However, an increasing amount of that communication will be digital, making deals happen more quickly and allowing compliance departments to ensure everything stays above board.

In five years' time, we will not find it necessary to do research about the impacts of this technology, as the market and increasingly the world will see today's technology as a part of life and not something new and interesting. Of course, there will be new innovations and ways of doing business—ideas that we haven't thought of yet or that even seem possible in today's world. But as it has over the past five, 20 and 50 years, the financial services industry and all those that work in it will adapt and move forward.

Refinitiv is one of the world's largest providers of financial markets data and infrastructure, serving over 40,000 institutions in approximately 190 countries. We are new market pioneers with 167 years of confidence. We provide leading data and insights, trading platforms, and open data and technology platforms that connect a thriving global financial markets community – driving performance in trading, investment, wealth management, regulatory compliance, market data management, enterprise risk and fighting financial crime.

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