

### **INTRODUCTION**

Facing myriad headwinds—fee compression, a tsunami of innovative products and services, increasingly demanding customers, not to mention a global pandemic—it's time for the financial industry to harness advanced technologies and embrace digital transformation.

Today's technologies are leading to outright breakthroughs. Consider the exponential rise of powerful, scalable, and consumption-priced technologies such as cloud computing, data lakes, and specialized software-as-a-service (SaaS). These enable cognitive capabilities such as artificial intelligence (AI), natural language processing (NLP), and real-time, predictive business intelligence (BI). The most advanced leaders are already well ahead in technological innovation and are seeing deeper insight, higher confidence in decision making, reduced costs, greater agility, stronger performance, and even disruption.

Our research (executed at the height of the COVID-19 crisis) shows that this pandemic is partly responsible for sparking greater demand and the need for fully digital end-to-end business models. This means the digitization of a greater swath of back-office processes but also the ability to deliver a completely digital customer experience. Amid the scramble to respond, leaders are demonstrating just how much technology can strengthen a business and why accelerating their digital transformation efforts is critical.

To better understand where firms lie on their digital transformation journeys and how they're leveraging technologies and external partners, FactSet commissioned Forbes Insights to survey 201 asset managers and asset owners from around the globe. More than three in five respondents were C-level executives, including 21% of CEOs or presidents. All executives were from firms with at least \$5 billion in assets under management.

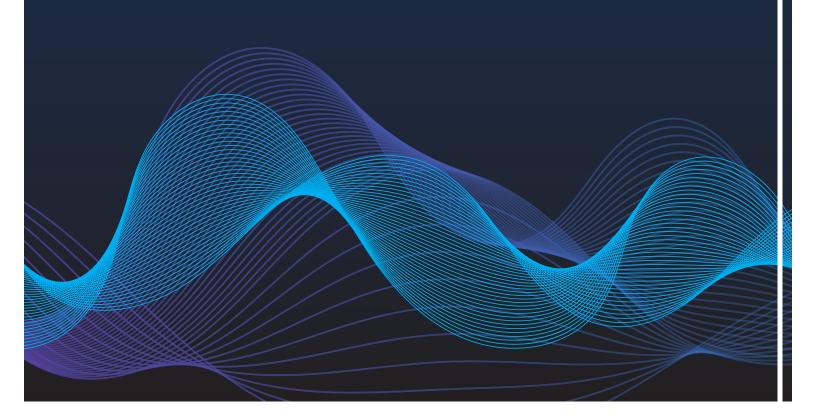
During our analysis, we identified a segment of "technology leaders" whom we'll reference throughout the report. This group, based on the technology leaders' responses to key questions, is in the highest quartile of technology implementation, demonstrating leadership in everything from advanced data platforms to AI, NLP, and blockchain.

This report highlights those leaders' successes and how companies are implementing advanced technologies to manage increased competitive pressures, develop insights, reduce costs, solve business challenges, and digitally energize the customer experience. These findings lead the way for other organizations during or beginning their digital transformations.



# SECTION 1

# A CHALLENGING LANDSCAPE FOR THE INVESTMENT INDUSTRY



Before discussing the role technology plays today, let's first look at the headwinds facing the financial industry.

Seven out of 10 (69%) asset managers, asset owners, and sell-side firms say they are seeing significantly greater competitive pressure than in the past. Numerous factors are driving this change, including:

- Customers expecting higher levels of digital service (79%)
- Competitors offering innovative products and services (77%)
- Customers demanding lower fees (76%)
- Customers expecting higher levels of personalized service (74%)

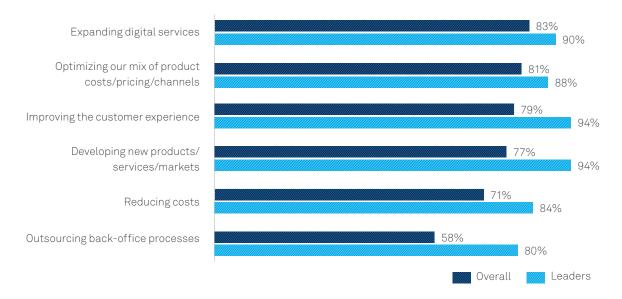
Among the technology leaders segment we mentioned earlier, 86% are seeing greater competitive pressure as a result of these factors. Without question, technology leaders view digital transformation as an opportunity. As a result, not only are they more aggressively harnessing a wider range of new technologies, but they are also more focused on strategic areas like improving the customer experience, optimizing costs, and developing new products and services (Fig. 1).

Overall, 85% of executives believe technology is playing a vital role in shaping the financial industry's future. This number rises to 98% among technology leaders—suggesting an industry recognizing the need to leverage innovative technologies to expand customer services while simultaneously shrinking operating costs.

of financial professionals say they are seeing significantly greater competitive pressure than in the past.

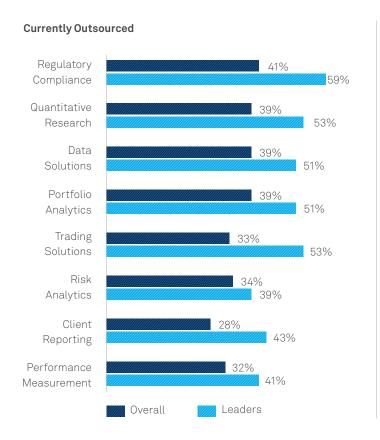
#### FIGURE 1: TECHNOLOGY LEADERS ARE MOVING MORE AGGRESSIVELY

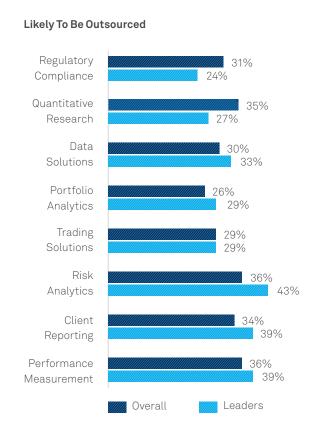
To what degree are you pursuing the following strategies ("high" and "aggressive" pursuit only)?



Another challenge facing the industry is the decision whether to buy or build. Investment firms are increasingly looking at sourcing third-party solutions to support workflow functions. Firms are already outsourcing solutions for everything from regulatory compliance (41%) to quantitative research (39%), data solutions (39%), and portfolio analytics (39%). Overall, quantitative research is the most likely to be outsourced, with 74% of firms currently outsourcing or likely to outsource it in the near future. Going forward, even more firms will be using third-party tools across more of their functions, further distributing their technology footprint (Fig. 2).

#### FIGURE 2: FROM IN-HOUSE TO OUTSOURCED





A CONVERSATION WITH

# FACTSET: UNDERSTANDING DIGITAL TRANSFORMATION

"Digital transformation," says Gene Fernandez, executive VP and chief technology and product officer at FactSet, "is the creation of new business models, products, and processes that harness the power of technology to enable people to do their best work." Such technologies "create seamless client interactions that remove friction from business processes," Fernandez adds. This, in turn, "enables growth and automation that drives efficiency."

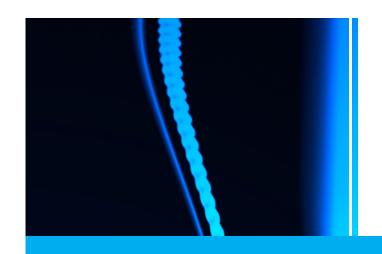
Though the trend toward digital transformation has been gaining momentum for some time, Fernandez notes that "the COVID-19 crisis, which was in full swing as our survey was being conducted, is proving to be (and will likely remain) a powerful catalyst. Customers want more digital services, and as more companies find out how effective digital business models can be, the trend will gain even more momentum."

#### **Key Elements of Any Digital Strategy Include:**

- A scalable foundation with cloud, SaaS, and managed services partnerships
- A modern data layer with complete quality datasets
- End-to-end process streamlining including the use of robotic process automation (RPA)
- Cognitive capabilities like machine learning (ML), NLP, and predictive analytics
- Personalized client experience that leverages platforms that scale across relevant channels (web, mobile, APIs, desktop, messaging, and collaboration)

Where it leads, Fernandez continues, "is an environment where leaders are harnessing technology and leveraging industry solutions to secure a unique competitive advantage in the marketplace." Through technology, firms can achieve an environment where "the machines tackle routine tactical execution and anomaly/outlier discovery, freeing humans to focus on strategy, governance, and oversight."

For these reasons, technology leaders "will make gains in every area of focus—improved customer experience, stronger margins, better and more relevant products and services, lower operating and compliance costs, stronger governance, and better risk management." Laggards, on the other hand, says Fernandez, "will find the going gets harder and harder. Move fast, you can become Netflix. Move slow, and you're Blockbuster."



"Digital transformation is the creation of new business models, products, and processes that harness the power of technology to enable people to do their best work."



# SECTION 2

TECHNOLOGY + DATA:
A COMPETITIVE ADVANTAGE

When it comes to using advanced technologies, the investment community is still in the early stages. These technologies encompass a broad range of solutions, including RPA, Al, ML, NLP, blockchain, DevOps, APIs, and open source. Only 24% of respondents would characterize their technological prowess as far ahead of their peers and other industries, suggesting that advanced technologies are underutilized across much of the industry.

To get a clearer picture of the state of play for advanced technologies in financial management, it's important to consider the numbers of pilots or proofs of concept (POC) underway as well as leaders' progress. When combining POCs and pilots with production, the adoption rates across all technologies are much higher. For instance, only 26% of firms are fully optimizing processes with AI/ML/NLP, but an additional 26% are currently piloting, and 19% are in the POC phase, which brings the total up to 71% (Fig. 3).

Nearly half (48%) of executives say they are already using technology to personalize the customer experience, and more than a third (38%) are embracing open-source technology. Meanwhile, technology leaders are well ahead in every form of technology considered—further evidence that technology is increasingly becoming a competitive advantage, with other firms relegated to playing catch-up. Yet these higher rates also mean that leaders are showing the way.

of companies are moving into production with advanced technologies.

#### FIGURE 3: UNDERUTILIZED ADVANCED TECHNOLOGIES IN THE FINANCIAL INDUSTRY

Which of the following best characterizes your progress across these activities?

|   | No interest/<br>Not certain | Considering | POC | Pilot | Production | Leaders <sup>1</sup> |
|---|-----------------------------|-------------|-----|-------|------------|----------------------|
| Streamlining processes with RPA                         | 6%                          | 12%         | 18% | 29%   | 34%        | 57%                  |
| Optimizing processes with AI/ML/NLP                     | 5%                          | 22%         | 19% | 26%   | 26%        | 45%                  |
| Implementing blockchain within key processes            | 13%                         | 26%         | 15% | 23%   | 22%        | 39%                  |
| Embracing lean/agile or DevOps development              | 5%                          | 18%         | 20% | 27%   | 29%        | 45%                  |
| Using APIs  | 7%                          | 13%         | 19% | 29%   | 31%        | 45%                  |
| Embracing open-source technology                        | 4%                          | 16%         | 10% | 31%   | 38%        | 49%                  |
| Using technology to personalize the customer experience | 2%                          | 13%         | 11% | 24%   | 48%        | 55%                  |

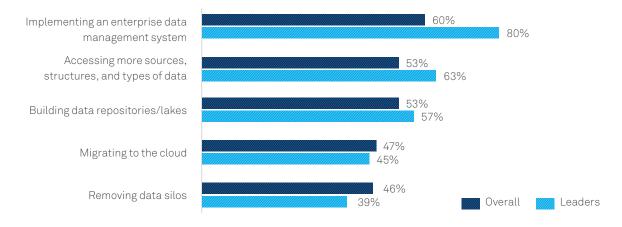
 $<sup>1\,</sup>This\,column\,only\,shows\,the\,"production"\,figures\,for\,technology\,leaders$ 

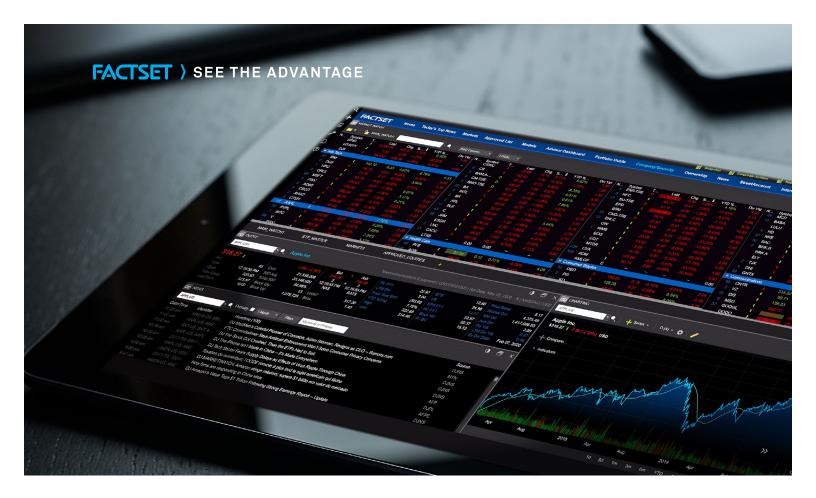


In light of these views, firms are taking a range of actions, including implementing an enterprise data management (EDM) system. Firms are also accessing more sources, structures, and types of data (53%), building data repositories/lakes (53%), and migrating to the cloud (47%) (Fig. 4).

#### FIGURE 4: DEVELOPING A DATA STRATEGY IS KEY TO MAKING THE MOST OF TECHNOLOGY

What steps are you taking to improve your data-driven strategies and processes?





One aspect of these findings warrants closer inspection. In some areas, leaders are just as likely or even less likely to be taking action on their data strategy as the overall sample. For example, while 46% overall say they're removing data silos, this number falls to 39% among leaders. This likely indicates that leaders have already made this move. Similar inferences are likely true across the board.

Most executives indicate that they are already employing AI to some degree to develop innovative products and services; they expect in the near future to continue to more actively embrace it. This is one area where technology leaders are far ahead of others. When asked specifically about AI combing through data to identify, develop, and deliver innovative products and services, 59% of leaders say they're very active in this regard today compared to only 38% overall. The takeaway: technology leaders have a head start in harnessing data and technology to create unique and distinctive customer experiences.

of technology leaders say they're removing data silos.

A CONVERSATION WITH

# DATA QUALITY SOLUTIONS: SOUND INSIGHTS BEGIN WITH SOUND DATA

Tom Redman, the founder of Data Quality Solutions, has been observing the evolution of AI and ML since the early 1980s. And though he says he's "been dismissive of all the hype in the past, there's no question that today, AI and ML are emerging as highly effective tools."

But there's a caveat—one Redman insists businesses must fully address before they even begin exploring such technologies. "Garbage in, garbage out," warns Redman. "When you're developing algorithms and you want them to be truly predictive, you're going to be drawing on a wide range of data from varying sources." But what executives often don't realize "is just how much work there is in making sure you get the data just right. The quality standards for AI and ML are extremely high, and most data sources are nowhere close," he says.

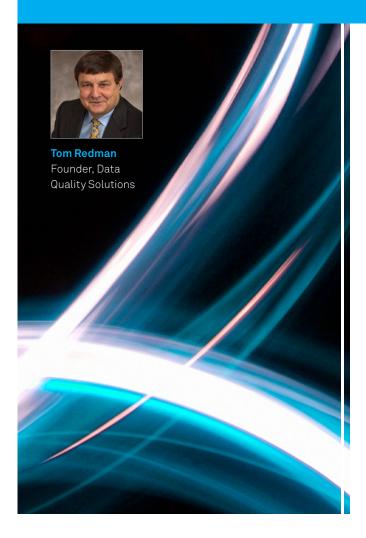
The first step in doing this, says Redman, "is being very clear on what you're trying to achieve and what datasets you're going to need. Think about external data, your existing internal data, and the data you're going to create."

From there, a company will need to comb its data to ensure consistency in terms of definitions and formulas. Also important is evaluating how extensive, complete, clean, and accurately labeled everything is, as well as how it will validate its algorithms.

Overall, says Redman, "I believe, given all the advances and the tools available today, there's enormous potential for AI and related data-driven strategies in finance." But for such initiatives to succeed, "you need to pay extremely close attention and consciously manage your data assets."

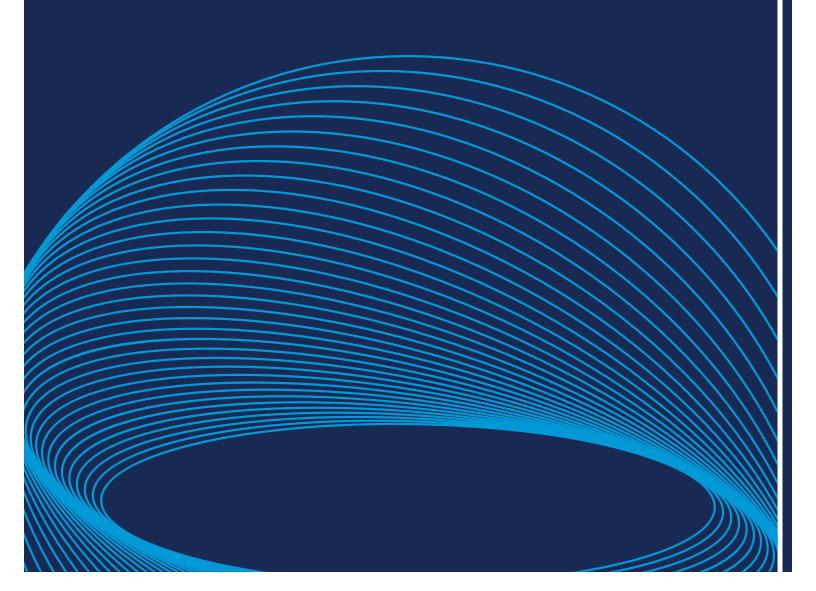


"I believe, given all the advances and the tools available today, there's enormous potential for AI and related data-driven strategies in finance."



# SECTION 3

# THE DECENTRALIZATION OF TECHNOLOGY



As the industry adopts advanced technologies, a clear trend is emerging: a shift toward greater distribution of the technology footprint.

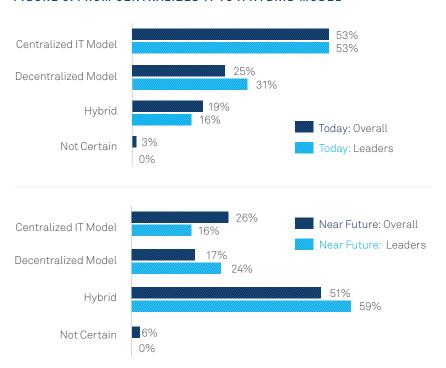


Essentially, as technology becomes more closely embedded across business processes, decision making and the ability to act are moving closer to the field. The FactSet survey captures five instances where this trend is visible. The research specifically shows that firms are shifting:

#### 1. From Centralized IT to a Hybrid Model

Today, 53% of IT models are centralized; when looking at the near future, this figure plummets to 26%. Meanwhile, the percentages of hybrid installations climb dramatically from 19% today to 51% in the near future, effectively replacing centralized models as the standard (Fig. 5). In essence, technology is moving away from the center, yielding easier access and agility.

FIGURE 5: FROM CENTRALIZED IT TO A HYBRID MODEL





Firms see themselves shifting from a centralized IT model to a hybrid model in the near future.

#### 2. From Enterprise Solutions to Hybrid Solutions

Today, over half of survey respondents say enterprise solutions dominate their technology footprints. However, this number falls to 33% in the near future with the vast majority of ground lost going to hybrid models (Fig. 6). Again, this demonstrates technology moving closer to the needs of end users.

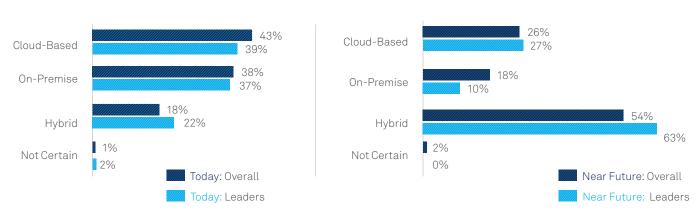
31% Point Solutions 33% 53% **Enterprise Solutions** 53% 13% Hybrid 14% Today: Overall 3% Not Certain Today: Leaders 0% 12% Near Future: Overall Point Solutions 10% Near Future: Leaders Enterprise Solutions 51% Hybrid 4% Not Certain

FIGURE 6: FROM ENTERPRISE SOLUTIONS TO HYBRID SOLUTIONS

#### 3. From Cloud-Based or On-Premise to Hybrid

Today, 43% describe their footprint as cloud-based, 38% as on-premise, and only 18% as hybrid. But more companies are shifting to hybrid models (Fig. 7). This is not to say that existing cloud relationships are in decline, but rather, as more solutions come online, end users find having greater flexibility helpful in their data management.







#### 4. From Owning Solutions to SaaS-Based

Today, 53% say their footprints are SaaS-based, a figure that rises to 74% in the near future. This is a giant step away from a centralized, in-house model toward a more distributed technology footprint.

#### 5. From In-House to Outsourced

Outsourcing is already widespread throughout the industry and survey respondents expect the trend to continue. For 21% of executives, security is the top consideration when choosing between in-house and outsourced solutions. Cost (15%) and control (14%) were also cited as key decision factors.

# Distributing the Footprint: Observations on SaaS and Outsourcing

When looking at the greater distribution in technology footprints—particularly, the movement to SaaS and outsourcing—FactSet's Fernandez has strong views.

"Strategic drivers such as standardized processes, cost efficiency, innovative differentiation, and personalized client experiences can be achieved by rationalizing four areas—people, process, data, and technology," says Fernandez. "All four are increasingly being outsourced to expert organizations."

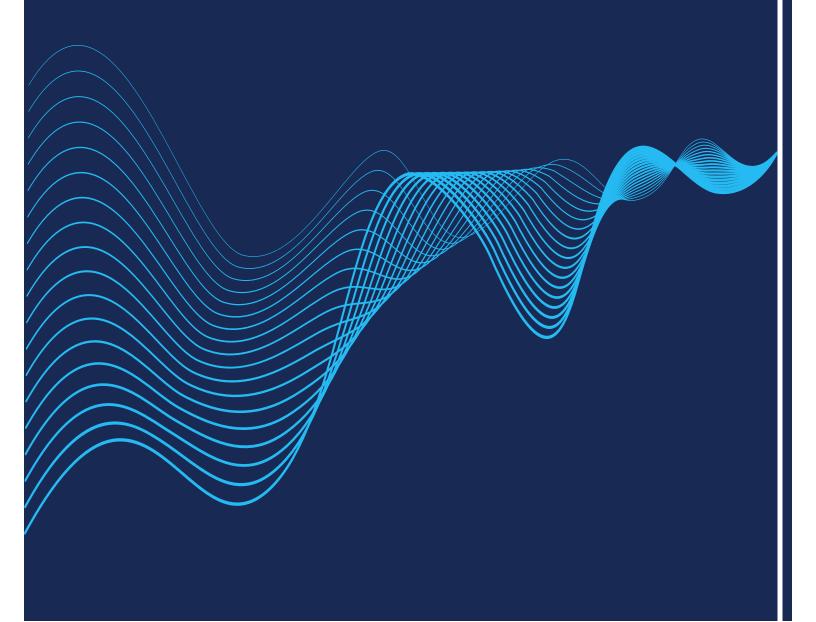
But companies cannot simply assign away all their challenges. The key to harnessing technology to achieve agility and transformation "is to maintain teams of internal technologists," says Fernandez. In this way, "they become the 'thread' that can stitch together a complete supply chain of SaaS and outsourced providers into a cohesive platform to operate the front, middle, and back office."

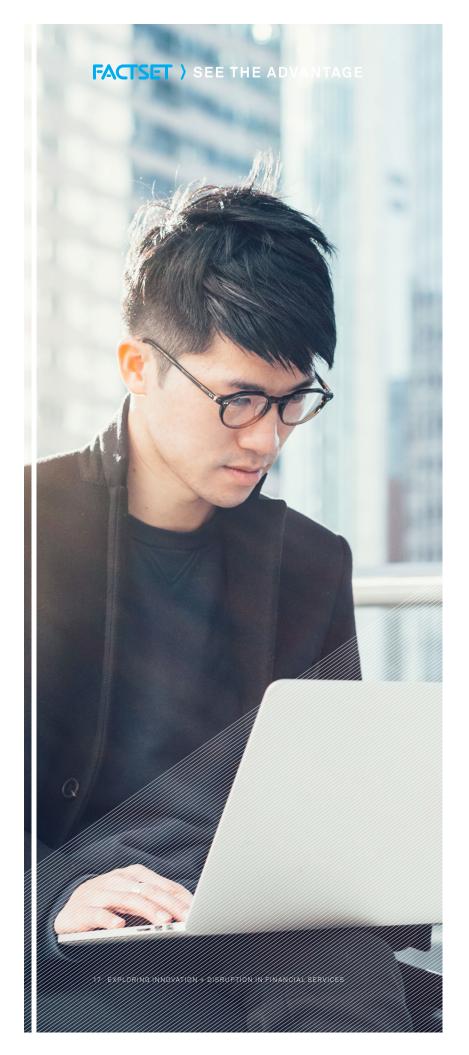
Overall, automation plus outsourcing frees human talent to drive differentiated digital innovation. "Freeing people to solve the hardest problems and innovate is a primary desired outcome of technology adoption," says Fernandez. "Those people can then spend time using technology to increase market share, deliver personalized/differentiated new services, and keep the cycle going by automating further."

For example, "personalization driven by cognitive tools and sound data equals differentiation," says Fernandez. But "build-your-own technology" is costly in terms of both investment and time-to-market. A more lean and agile path, says Fernandez, "is choosing best-of-breed technologies and then using your best employees or contractors to integrate, transform, and differentiate."

# SECTION 4

THE WAY FORWARD





The opportunities presented by implementing advanced technologies—as well as the risks of doing nothing—are evident. So how does the industry move from its limited or early-phase technological transition to a full-blown transformation?

Today, just one in three financial industry executives (34%) feels highly satisfied with their firm's approach to technology. This figure falls to 18% among those whose primary role is in technology.

# feel highly satisfied with their firm's approach to technology.

This low satisfaction rate indicates that much more must be done before digital transformation can gain its needed momentum. The survey highlights three key inhibitors of progress:

- Inadequate funding of technology initiatives: Three out of four executives (75%) believe their firm needs to expand its investment in technology—a figure rising to 88% among leaders.
- The skills/talent gap: Fifty-eight percent of executives overall—67% among leaders—are experiencing a significant skills talent gap.
- A tendency to treat IT as a support—not a value-adding—function: Sixty percent overall and 65% of leaders recognize that to attract top technology talent, IT must be seen as a more critical role within the industry. As Fernandez explains, "Traditionally, IT has been viewed as the back office."
   However, going forward, "there needs to be a recognition in the industry that technology is the future and that top digital talent is essential to future success."

But firms are now taking steps to address these and related challenges. For example, 46% are currently training staff to embrace new technologies with 32% planning to in the near future. Similarly, firms are expanding their technology budgets, hiring technology talent, and collaborating more closely with providers and partners (Fig. 8).

While technology leaders are in all instances significantly ahead of the pack—both today and in the near future—there is one step forward that stands out in particular. They are significantly more likely to have taken steps to expand the prestige, prominence, and role of their technology talent. While only 35% of the overall sample have already taken this step, more than half (51%) of technology leaders have. This is a significant and effective step within an industry where other roles—for example, research, sales, trading—tend to hold the limelight.

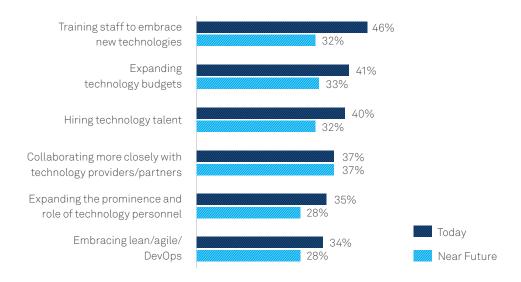
In general, executives within financial services realize that for digital transformation to succeed, the entire organization must embrace it. A key outcome from this attitude is that it changes the very nature of work. Here, 71% agree—25% strongly—that digital transformation means fewer routine tasks and more high value-added roles.

But executives also realize that moving from vision to reality requires considerably greater effort than is evident today. Specifically, 73% agree—28% strongly—that their firm needs to take more action to ensure their workforce is positioned to embrace leading-edge technologies. In general, the way forward requires close attention to people and the overall management of talent.



71% of executives agree that digital transformation means fewer routine tasks and more high value-added roles.

FIGURE 8: KEY STEPS FOR ENABLING DIGITAL TRANSFORMATION



A CONVERSATION WITH

# PRINCIPAL FINANCIAL GROUP: AN INDUSTRY LEADER IN LEVERAGING ADVANCED TECHNOLOGIES

Through a virtual sit-down, Brian Ness, executive director and CIO of Principal Global Asset Management, shares his firm's technology strategies.

#### How Much Competitive Pressure Are You Feeling Today?

In asset management, but also in our retirement and insurance lines, there's a lot of competitive pressure. From Principal's view, meeting client needs is at the heart of the pursuit for improvement more than the competition.

Client needs are changing, and so it's always a question of how creative we can be in terms of meeting the ever-evolving expectation from our clients around return, risk, digital experience, and [countless other fronts].

#### What's Your Data Strategy?

We harvest data from a variety of sources such as our core CRM [customer relationship management] solution. We also use industry data sources—about 75% of what we use is [sourced] externally. Everything is in the cloud, and analytics help us decide where we're going and who we target.

#### What's the Role of Technology at Your Firm Today?

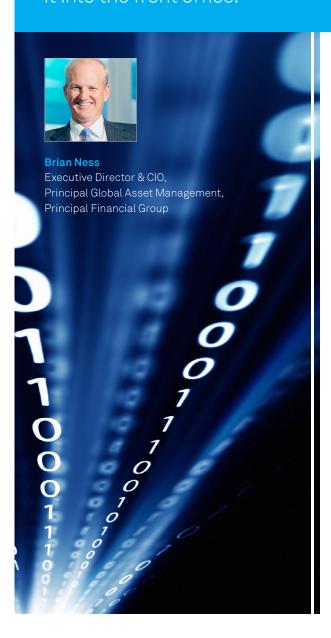
Historically, technology has been a back-office player in Principal Financial Group. But technology is evolving so fast and so far and can accomplish so much for the business that we're moving it into the front office.

The technology team must now understand the demands, expectations, and opportunities faced by marketing and distribution. We must understand how data can be impactful in investment choices and generate alpha. We need to collaborate directly with these [front-line professionals] without an intermediary. So, we're thinking a great deal about the roles we play, the ecosystem we work in, and the solutions we can create.

A great example is how we work, then and now, with our distribution and marketing teams. Five years ago, if we came up with a new product, marketing would create some content and then distribution would talk to everyone in their region, hoping to generate sales.

Now, we're leveraging data that we get from the industry. We're seeing what clients are doing in the marketplace. We gather that client feedback, and that drives what products we think about or create. We get a [sound] idea of how demand will develop for certain segments, then decide if we want to proceed. If it's a go, we do a prototype, look for partners, and do our rollout. So now our marketing, distribution, and product development are all informed by segmentation and data analytics.

"Technology is evolving so fast and so far and can accomplish so much for the business that we're moving it into the front office."



Q&A with Principal Financial Group: An Industry Leader in Leveraging Advanced Technologies (continued)

#### Are you using advanced technologies such as AI, RPA, and NLP?

We use all those and more. For example, within asset management, we're using RPA engines in key areas around finance and back-office accounting. This is largely driven by our team in India, where we have a really strong Center of Excellence.

We're also using AI and ML—predominantly in our investment management process—to inform us on which specific investing styles and techniques are most beneficial and working for which clients. And we're using NLP to increasingly harvest alternative data sources such as various websites and transcripts from important calls.

#### What's your technology development approach?

In being digital, you need to balance several core concepts. To be innovative, you need a strong digital core—the right capabilities that are modern and current. This is balanced with our digital customer interaction and our digital investment process, along with a strong data foundation. And you have to be innovative on each of those core capabilities to be a strong digital player. Our goal for this digital core is ensuring every one of those is modern and current, within 15 months [of the leading edge] at all times.

Doing that enables our customer-facing solutions to be agile, innovative, and dynamic. We can invest where it makes sense and move fast so we don't hold up the solutions' progress, and they can deliver new capabilities on a quarter-by-quarter basis, matching customer expectation.

#### How did you handle the COVID-19 crisis?

The biggest impact from COVID-19 is that we earned a badge of success. Overall, the transition to working remotely, globally, has exceeded expectations. We had the advantage of having all this remote collaboration technology already in place. People already had laptops and many were already working remotely—if not for weeks at a time, then certainly days. Our biggest issue might have been figuring out who needs an additional monitor to work from home.

But overall, what's happened is that we're learning to use these remote collaboration tools even more effectively. And it will likely change the way people work going forward.

#### What is your approach to talent?

Competition for talent is a challenge in the industry, so we must be aggressive and creative. However, we have a large footprint of, and pride ourselves on developing and keeping, really good tech talent.

The thing is, some people want to do nothing but hard-core technology and that's fine. But we target the people who want to use technology to solve interesting and hard business problems. So not only are they strong in technology, but also they're interested in learning about investments, asset management, insurance, and retirement. That's pulling technology into the front office.

One of the key goals for myself and my team is becoming a digitally empowered workforce. So it's our job to make sure everybody [at Principal] understands and has access to the tools, data, and technology they need. Our job in tech is not to do for them what they can do on their own. Our job is to listen to the needs, help find solutions, and provide support. If we try to do everything for everybody, then we become the bottleneck. But if we empower them with the tools and the education, they can utilize the technology themselves.



Investments in technology are the key to unlocking innovation, disruption, and unique competitive advantage.



# CONCLUSION: SEIZING TRANSFORMATIVE OPPORTUNITY

The benefits from and the need for digital transformation in financial services are becoming clearer.

Just as technology footprints are becoming more distributed, more tools are needed in the hands of more executives. Once considered a strictly back-office function, technology is now surging into a highly strategic front-office role.

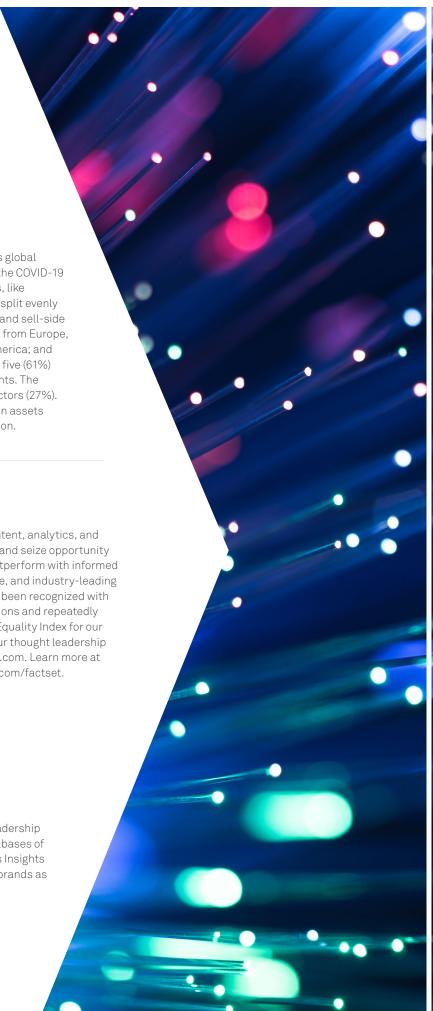
Technology is transforming end-to-end processes. Tools like RPA and NLP are automating mundane tasks, and Al and ML are enabling massive advances in prediction, product development, and personalization. As this epoch progresses, more firms are developing data diligence while pursuing best-of-breed building blocks to enable their strategies. Ultimately, the customer experience is becoming fully digitized—as are the workplace and the nature of work itself.

Of course, obstacles remain. Key among them is a lack of funding for advanced technologies, but as leaders are demonstrating, investments in technology are the key to unlocking innovation, disruption, and unique competitive advantage.

From there, the real obstacles are talent-focused. Expanded hiring, greater efforts in talent retention, and more training are essential. Such efforts apply not only to tech staff but also to front-line executives who need a greater understanding of, and active participation in, developing and activating digital capabilities and strategies.

Firms also need to do more to develop the technological speed and agility needed to access the cloud, SaaS, outsourcing, and managed service partnerships. Leveraging external industry solutions is a key strategy for unlocking advantages in the marketplace.

Overall, technology today offers opportunities far beyond anything available in the past. Spurred by intense competition and greatly boosted by the digital demands and opportunities born from the COVID-19 crisis, industry leaders are making enormous strides. Digitization is now fast arriving across the whole of financial management, and the opportunities are truly transformative.



# **METHODOLOGY**

The findings in this report are based on a Forbes Insights global survey of 201 executives. Conducted in May 2020, amid the COVID-19 crisis, half (50%) of the respondents are asset managers, like investment management companies; the remainder are split evenly between asset owners, including insurance companies, and sell-side firms, like investment banks. Four in 10 respondents are from Europe, the Middle East, and Africa; a quarter are from North America; and 35% are from the Asia-Pacific region. More than three in five (61%) are C-level executives, including 21% of CEOs or presidents. The remaining respondents are vice presidents (12%) or directors (27%). All respondents come from firms with at least \$5 billion in assets under management, including 45% with at least \$50 billion.

# FACTSET ) SEE THE ADVANTAGE

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