



# Next Generation Audit

**How advanced technologies  
are transforming the audit**



**Forbes insights**

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# Foreword

Business is undergoing a broad transformation to a data-rich, technology enabled environment. The audit profession is realizing the same dynamic. Data and the advanced technologies that assist auditors in collecting, transforming, analyzing and—most important—understanding it all will clearly offer competitive advantages to companies that embrace it.

To understand how corporate leaders view today's landscape, KPMG LLP, in collaboration with Forbes Insights, surveyed 250 senior finance executives under 40. This group of executives consisted of chief financial officers, controllers, directors of finance and of audit and other senior leaders in the U.S., Europe and Asia-Pacific at companies with annual revenue from \$1 billion to more than \$100 billion. Many of the survey findings highlight how corporate finance and audit firms see themselves today and in the future.

While some specifics vary, executives revealed that technology is providing opportunities to better leverage human capital throughout the finance ecosystem. Many of the advanced technologies discussed in this report, such as data and analytics and artificial intelligence, are becoming mainstream requirements for corporate finance.

The same is true of the audit. The audit has become digitized over the past several years, as audit firms and their clients are able to share higher-quality data. The age of the smart audit is dawning with advanced technologies enabling auditors to deliver enhanced audit quality.

What is clear, across all generations, is that financial executives are looking for opportunities to drive better business models and improve professional experiences for their people. Advanced technologies are rapidly transforming the world of finance providing all of us with an exciting opportunity to realize success.



**Bill Tomazin**

Managing Partner, West Region  
and National Audit Solutions  
KPMG U.S.

## Advanced technologies promote the quality of the audit



94%

of executives feel advanced technologies promote the quality of the audit.



74%

of executives say external auditors use advanced technologies in their audit.



# Introduction

Harnessing the tremendous amount of information companies have available today is one of the primary challenges with conducting business. The swiftness at which data is created reflects the speed at which business operates, meaning it's more important than ever for corporate executives to understand how advanced technologies can bolster their finance operations.

The next generation of finance leaders will be tasked with comprehending and implementing a wealth of transformational technologies. To better understand how executives see the opportunities evolving, Forbes Insights, in collaboration with KPMG, surveyed 250 corporate finance leaders under 40. These established executives are from companies around the globe and across all major industries.

The findings show that advanced technologies are mainstream today. The cloud, data and analytics,

blockchain and other technologies are being utilized by many companies. And what isn't yet commonplace in the corporate finance function soon will be. By and large, young finance leaders expect a number of technologies to become essential within the next few years.

Innovative technologies are advancing audit quality and the effectiveness of corporate operations. While consensus varies on specific technologies, according to the report, one common theme emerges: Advanced technologies don't displace the human element but allow finance executives and auditors to focus more on their own strengths, leading toward better judgments and decisions.

Hurdles remain – especially around access to, and quality of, data to feed into systems – but the benefits are clear, as most executives surveyed report concrete advances in operational efficiencies as a result of new technologies.



# Key findings

## Advanced technologies are largely seen as essential for business today.



More than half of finance executives under 40 say workflow automation, visualization technology, data and analytics and artificial intelligence are all essential now or will be must-haves within two years.

67% Cloud is essential now

18% Cloud will be essential within two years

## Data presents the most problems.



The biggest hurdles around instituting advanced technologies in a corporate setting? Data.

41% Not having enough data

30% Not being able to effectively access data

## Blockchain is becoming mainstream in corporations.



The technology is most entrenched at companies with more than \$5 billion in annual revenue.

41% Companies using blockchain in some capacity today

50% Companies planning to use blockchain in the future

## Advanced technologies are part of, and promote, the audit.



What do executives think of advanced technology?

74% Used by external auditors in their audits

94% Promotes the quality of audits

# Perception and realities of advanced technologies

Advanced technologies are changing how business is conducted in both the finance function and audit. That's the core message of the Forbes Insights/KPMG survey of finance executives under 40. By and large, most executives see innovative technologies becoming essential to conducting business, optimizing external transactions with customers and suppliers as well as in the audit.

The term advanced technologies embraces a diverse set of computerized abilities. In the 2018 report, workflow automation, visualization technology, data and analytics, robotic process automation, natural language processing, artificial intelligence (AI), cloud and blockchain are all technologies executives considered.

"The broadest theme that I see is that [advanced technologies are] really changing the finance function to be one that is working on the business versus working in the business."

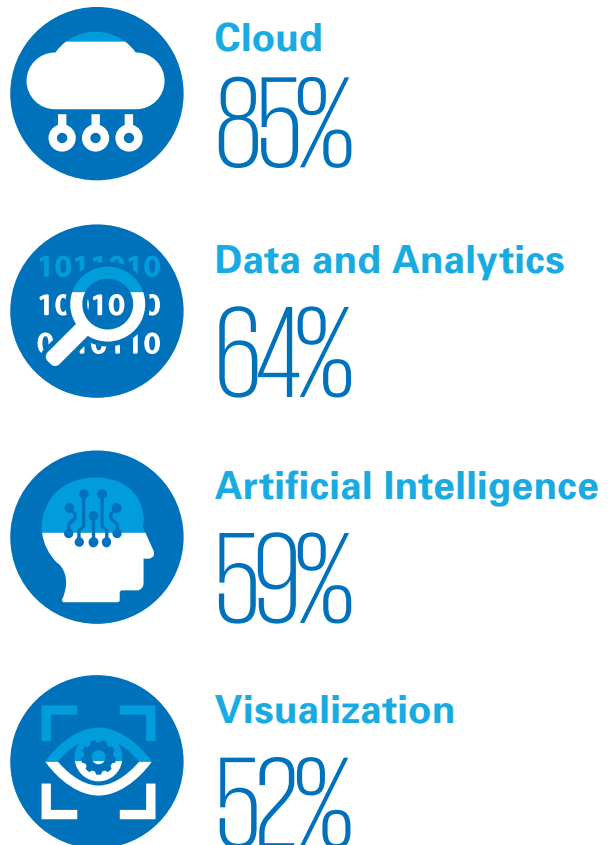
**Jim McKinney**

Chief Financial Officer, Kemper Corporation

"These are all essential elements in the finance world and will absolutely be employed in the coming years," says Kelli Murphy, Senior Manager of Accounting, Operations and Finance at General Assembly, a leading education organization. "In order for companies to continue to stay efficient and be operationally excellent, they'll have to move toward these different automated and AI technologies."

Four of the aforementioned technologies are already considered must-haves today or within the next 24 months (Figure 1).

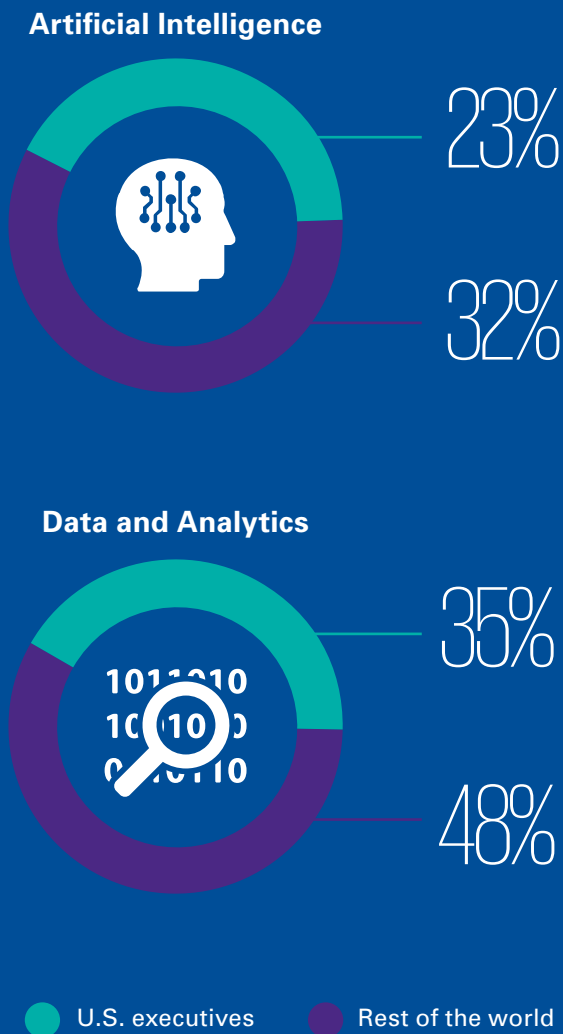
**Figure 1: Technologies considered must-haves now or within two years**



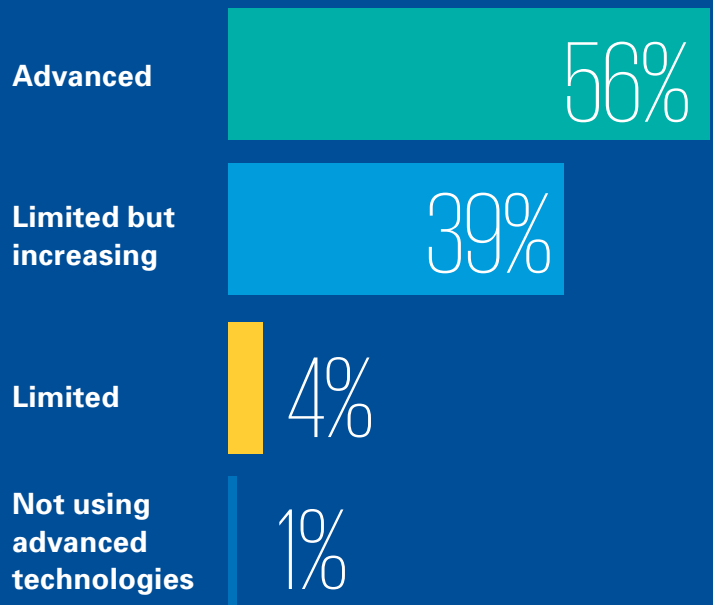
Notably, finance leaders outside of the U.S. consider AI and data and analytics a must-have at a higher rate than U.S. executives (Figure 2).

Despite the importance of advanced technologies to business, executives tell us that their own corporate capabilities around advanced technologies seem to be lagging, at least when viewed in light of the importance they place on the technologies overall (Figure 3).

**Figure 2: What is a must-have today?**



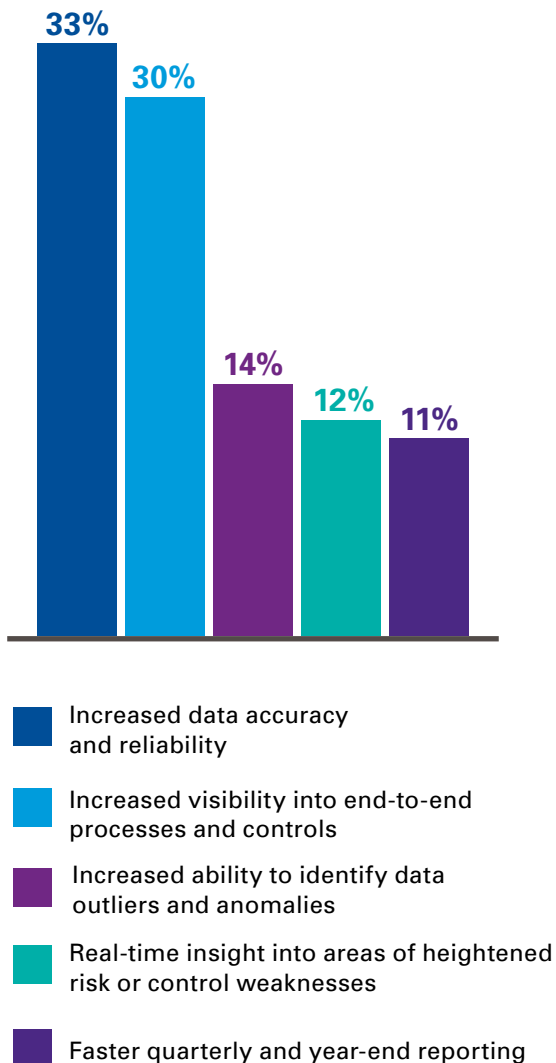
**Figure 3: With advanced technologies, is your organization...**



# Benefits of advanced technologies

New technology isn't implemented for its novelty value. There has to be a real business benefit behind the time and cost of integrating new capabilities. When advanced technologies are put in place, two of the biggest benefits are increased data accuracy and better visibility into end-to-end processes (Figure 4).

**Figure 4: What are the primary benefits of advanced technologies for finance?**



In addition to being able to unlock efficiencies in the business at large, advanced technologies are enabling finance leaders to tap more deeply into the human skill set of their departments. This stems from the ability to offload rote duties that typically have occupied much of finance professionals' time.

"We have highly skilled people on our finance and accounting team. And these mundane tasks take time away from being able to spend more on analytic and future-thinking aspects of their job," says General Assembly's Murphy. "This isn't a matter of replacing our personnel with a robot, but allowing that robot or bots to take some of those tasks off the plate and continue to help our company grow."

Indeed, Kemper's McKinney notes that once-arduous, periodic tasks, like crafting a peer analysis in Excel from data hand-entered from regulatory filings are today fully automated and constantly updating. Now, he says, "I can spend my time looking at anomalies and looking for new trends or new information to come out of that versus having to spend my time creating that report."

Putting that data to use to improve business processes is one of the great benefits executives report. It's not just in computerized environments like e-commerce, but in physical operations as well. For instance, Walmart is using machine learning to understand manual labor processes to decrease costs in the long run, says **Eddie DeSalvio**, Director of Finance at Jet.com, a division of Walmart.

Note: Percentage of executives choosing benefit as "most important."



# Blockchain becoming mainstream

Of the many advanced technologies available to businesses, blockchain is overwhelmingly in use. Today, 41% of executives surveyed note their companies are using blockchain in some fashion, and another 50% are planning to use it within the next three years. Smart contracts are the most common implementation, at about 60% of companies, a percentage consistent across global locations and company size (Figure 5).

Blockchain's great potential will be to enhance audit trails and combat fraud as well as the ability to establish quicker payment settlements with suppliers, suggests Jet.com's DeSalvio.

Still, there is a current feeling among executives that blockchain isn't quite robust enough to weave into operations more fully. The most significant concerns around using blockchain include security, cited as most concerning by 29% of finance leaders. Limitations of current technology is a close second, noted by 28% of respondents.

Blockchain's continuing evolution means it has less of an immediate return on investment when compared to other technologies like workflow automation and data visualization, adds Kemper's McKinney. "We're in that stage where it's still a very exciting technology, people are researching it and learning about it. But if I think about the incremental spend, it has to be balanced with the spend that I can apply to those other initiatives that create immediate impact."

Figure 5: How is blockchain used in your business?



# The ubiquitous cloud

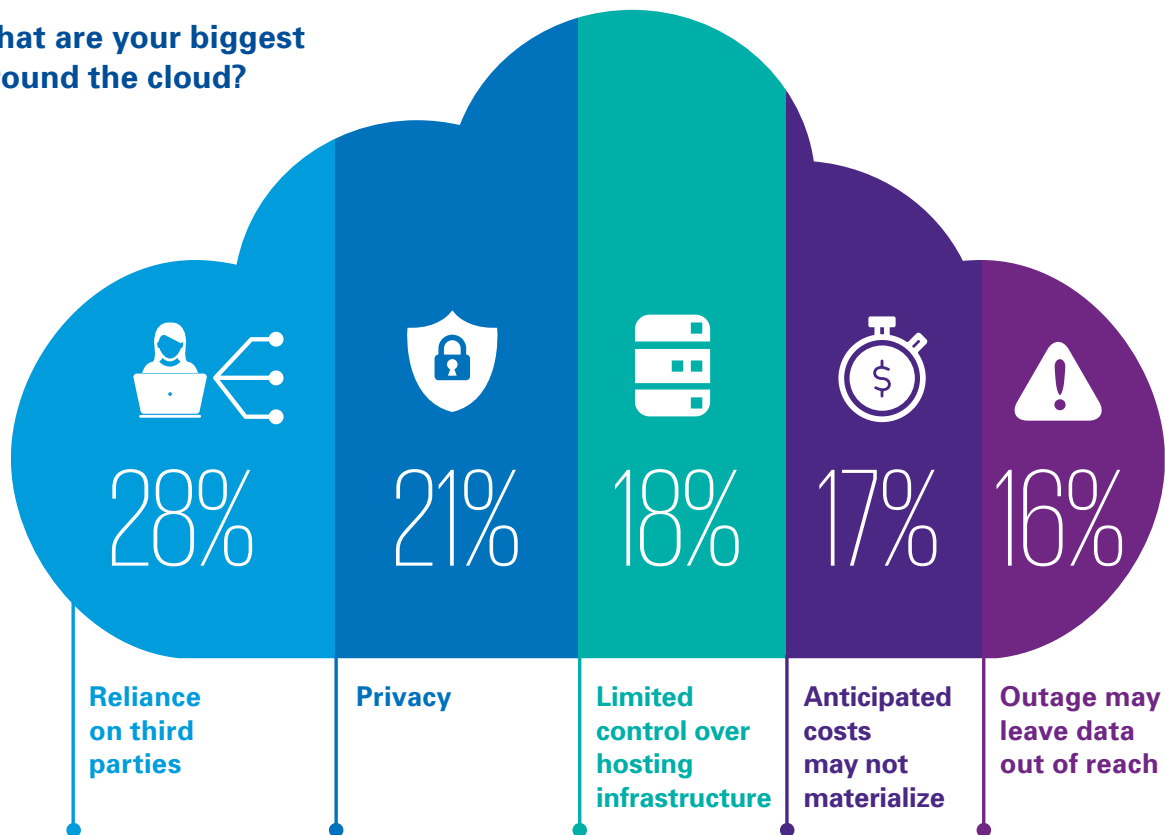
In less than a decade, the cloud has become an integral part of most corporations' operations, with 67% of finance leaders surveyed declaring cloud as a must-have today. An additional 18% say cloud will be essential within two years. Overall, executives are highly confident the cloud will result in sustainably lower costs, something noted by 41% of respondents.

The cloud is flexible enough to allow processes to be adjusted to conform to business needs, both with regards to volume and in time. "Another crucial benefit to the cloud cited by multiple executives is the ease

with which team-wide applications and data sets can be utilized. "We can view key performance indicators by the hour, 24/7," says Jet.com's DeSalvio.

Even though the cloud is among the most integrated of advanced technologies, there remain some questions about its role in the corporate environment (Figure 6). Still, the technology is mature enough that solid vetting of cloud vendor processes and having security woven into regular corporate practices should allow business to utilize the cloud with a high level of confidence, according to General Assembly's Murphy.

**Figure 6: What are your biggest concerns around the cloud?**



"Fundamentally, you need a cloud processing environment to be able to ingest the magnitude of data that's available and process it in a way that is most effective. The cloud is an enabler to accomplishing that."

**Bill Tomazin**

Managing Partner, West Region and National Audit Solutions, KPMG U.S.

# Implementation challenges

As with any new and promising endeavor, there are degrees of risk that executives need to consider. Beyond the specific obstacles discussed earlier with blockchain and cloud, another primary hurdle with implementing advanced technologies involves the data businesses now can generate and collect (Figure 7).

While core finance capabilities will never change, technology is altering much of the daily workflow as well as the strategic role finance plays within a business. To succeed, finance professionals increasingly need change management and analytical skills. They also need to recognize that finance and accounting disciplines are becoming more blended in the corporate environment, according to Kemper's McKinney.

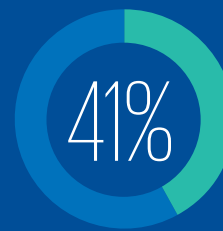
**"There's just a lack of trained people in the market today with these skill sets. It will take several years of embedding these in our institutions and creating training courses before these will be more widely adopted."**

**Jim McKinney**

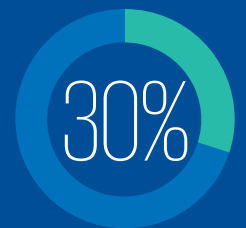
Chief Financial Officer, Kemper Corporation

**Figure 7: Challenges with implementing advanced technologies in financial reporting**

## Most challenging



Insufficient amounts of data



Inability to effectively access and efficiently access data

## Least challenging



Inadequate initial assessment of implementation scope



Lack of resources

# Advanced technologies in Audit

The swiftness with which advanced technologies are reshaping business extends to the audit as well. As new capabilities enhance the effectiveness with which auditors see information in totality, they're better able to serve clients.

"The look and feel of an audit five years from now will be 180-degrees different than the look and feel of an audit five years ago," Tomazin says. This stems from the explosion of data and technologies, which will allow for a more consistent, standardized and productively executed audit. That will fundamentally change how auditors and their clients view the process, to becoming one of being more informative for the business, he adds.

Young finance executives already see their audit firms as significant users of advanced technologies, with 74% saying their auditor uses one or more technologies now. U.S. executives are generally as aware of their auditor's technology prowess compared with their non-U.S. peers, according to the report.

This view is borne out among all executives in the Forbes Insights/KPMG survey, with a definitive 94% of finance leaders stating that the use of advanced technologies promotes the quality of their company's audit, a percentage largely identical regardless of firm size or location.

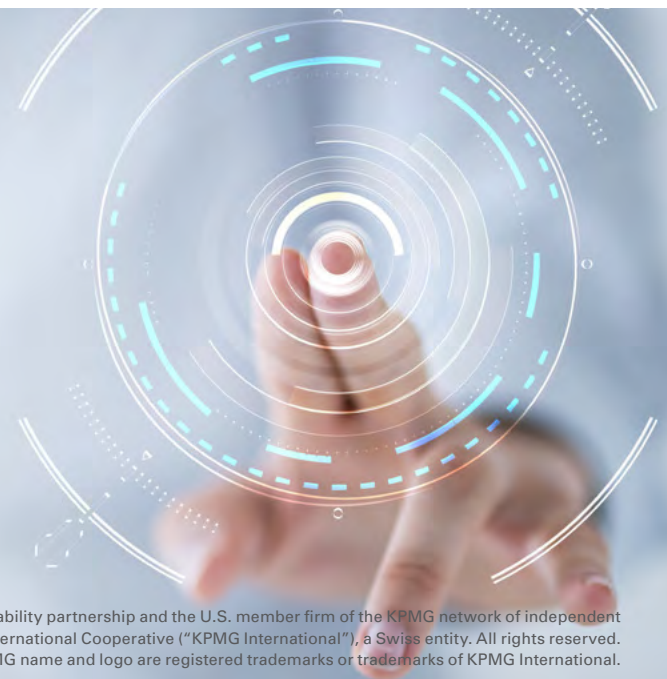
While cloud is the most utilized technology among the auditors of executives' firms (Figure 8), the potential to boost data coverage is seen as the most promising benefit auditors can generate, cited by 35% of executives. That percentage is consistent as the most-chosen among respondents regardless of their geographic location or business size. One outlier to that is executives between the ages of 30 and 39, who cite it as the most important benefit at a 43% clip (Figure 9).

Automation is already helping auditors establish foundational analysis to tie more information together and elicit better judgments around complex areas. Ultimately, that will allow for better decisions throughout the organization, says Tomazin. A technologically advanced audit should enable client corporations to "deeply understand the data they have available to run their business, how they can procure that data and position it to best leverage how they run their businesses," he explains.

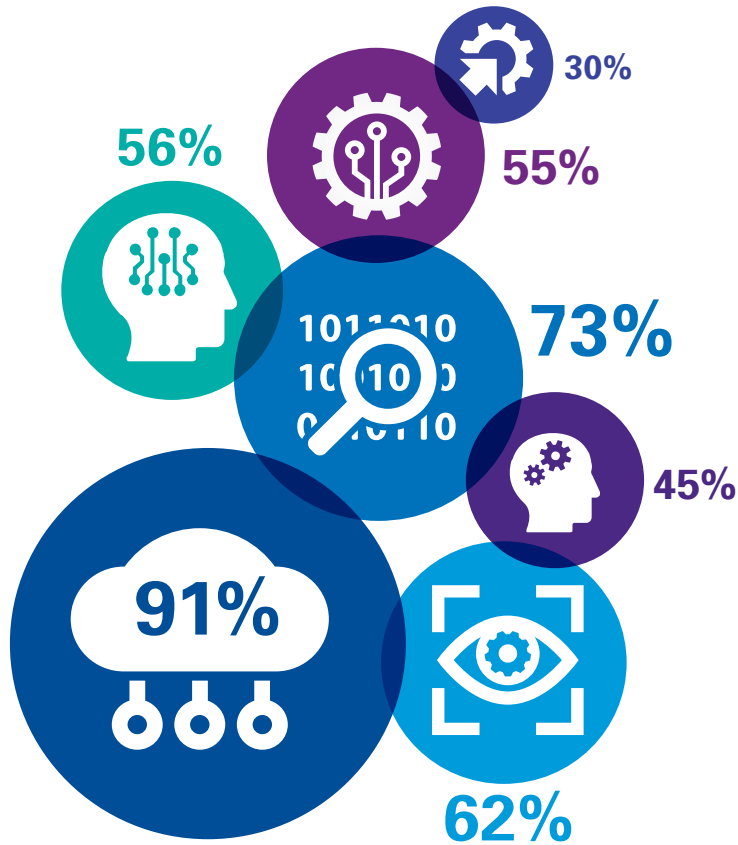
**"We want them to use these technologies because that means reduced time to perform the audit and also increased efficiencies."**








**Kelli Murphy**

Senior Manager of Accounting, Operations and Finance  
General Assembly

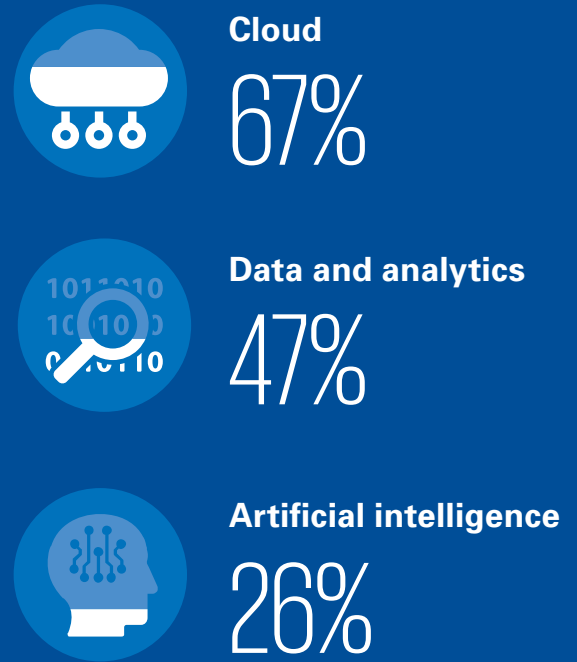


**Figure 8: What advanced technologies does your audit firm utilize?**

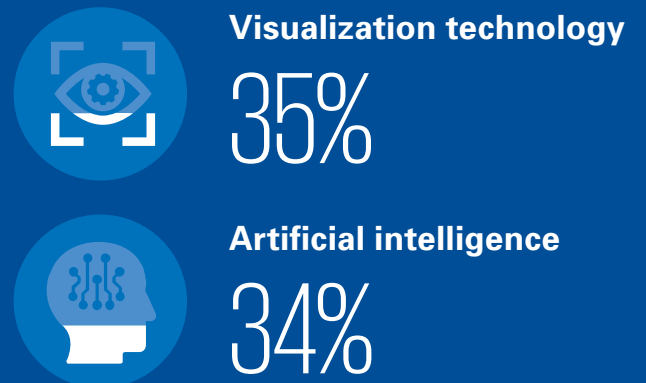


-  Cloud
-  Data and analytics
-  Visualization technology
-  AI
-  Workflow automation
-  Natural language processing
-  Robotic process automation

**Figure 9: What capabilities must auditors have today?**



**Within the next two years?**



# Conclusion

Implementation of advanced technologies and innovation in corporate finance and audit are largely one and the same. The Forbes Insights/KPMG survey of finance executives under 40 reflects an excitement about what is to come in terms of the use of technology in the finance function.

In an environment where new technology is forcing businesses to constantly evolve, finance leaders are clearly embracing the opportunity to be forward-thinking with advanced technologies. Audit quality is an integral part of this transformation as well, as finance executives clearly have the desire and the expectation that their audit firms will use advanced technologies to add even more value to the process from end to end.

Ultimately, the emergence and mainstreaming of advanced technologies will change the finance and audit functions to be more predictive than reactive, tying them ever closer to the primary business objectives of their companies.

“From developing expertise in basic tools and then being able to really dig in with data science, there is a lot of runway there in terms of changing the game for finance executives,” says Jet.com’s DeSalvio.

# Methodology

Forbes Insights surveyed 250 senior finance executives ages 23 through 39 in the United States, Europe and Asia-Pacific to learn more about their perceptions of advanced technologies, their usage and their potential in business today.

The survey was conducted among executives in 12 primary industry groups as well as in government at companies with annual revenue of \$1 billion to more than \$100 billion. Specific technologies asked about were workflow automation, visualization technology, data and analytics, robotic process automation, natural language processing, artificial intelligence, cloud and blockchain.

The survey was conducted in August of 2018.

# Acknowledgments

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**Kelli Murphy**, Senior Manager of Accounting, Operations and Finance, General Assembly

**Bill Tomazin**, Managing Partner, West Region and National Audit Solutions, KPMG U.S.

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