



The commercial real estate industry is in the midst of exciting change. Prior to 2020, it was already in the evolutionary process of redefining systems and operations for a new generation of technological advancement, and "disruption" became the watchword.

Then COVID-19 hit, forcing the industry to focus on the immediacy of safety, sanitation and the preservation of building stock in a time of dramatically reduced occupancies. This year has been an inflection point, intensifying the need for technology solutions to better address a more flexible work experience in addition to improving efficiency and reducing costs through the automation of certain processes and the elimination of error.

COVID-19 has served to accelerate the awareness of tech's importance in operations and accelerate that disruption. Companies have pushed the limits of their current technologies, and the prolonged crisis has highlighted the opportunity for further progress.

There have been major steps forward in the industry's embrace of technology solutions, but there is still a major disconnect between interest and adoption. This is caused in large part by an industry caught up in "higher priorities" and technology companies viewed by many as too fragmented to provide integrated soup-to-nuts solutions. Nevertheless, the mandate remains to create a technology strategy that aligns the enterprise architecture to the strategic direction of the company.

Ultimately, the winners in this highly competitive space will be those who adapt and reap the cost savings and operational efficiencies that a fully realized technology platform can deliver. That is where investor capital will migrate to, widening the competitive gap eve more.

This report is the result of a major global survey of corporate decision-makers representing all commercial real estate disciplines and providers to the property-technology space fueling innovation.

Building on that foundation, this report explores the disconnect between provider and real estate owner and between owner and further adoption, and it points to strategies to increase the rate of successful implementation. There is more to fully integrated implementation than partnering with the right provider. Implementation is a transformational journey, often redefining the very culture of the corporate user.

This report highlights three key steps to implementing a fully realized technology strategy:

- 1. Develop a technology strategy
- 2. Build a path to implementation
- 3. Develop a sourcing plan

Within that framework, this report will explore such issues as the need for transformation management that impacts the entire culture of the organization, and the importance of talent creation and management.

Companies in this space will not realize the full benefits of technology adoption without a carefully articulated strategy that allows each application to communicate across the entire business platform in a fully integrated infrastructure.

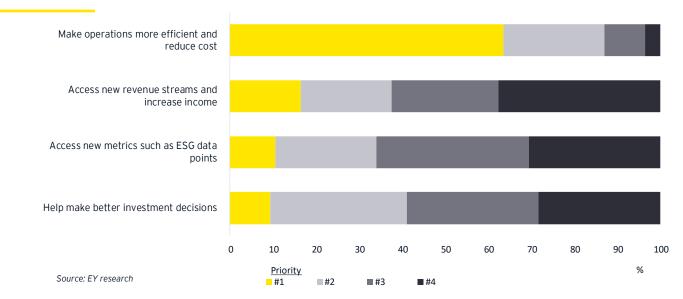
The commercial real estate industry has made some real progress on this front, but more needs to be done. Providing guidance on the task ahead is the primary goal of the following report.

## Technology adoption: needed now more than ever

There is no doubt that technology is critical to the commercial real estate industry, yet the market is bifurcated between leaders and followers. The leaders are advancing rapidly with well-thought-out and extensive technology strategies through which they can begin to improve efficiency and reduce costs.

The firms leading the way recognize that in the long term, technology solutions will achieve this through the automation of certain processes and the elimination of error. In addition, these solutions will also potentially transform the ability of these real estate companies to leverage internal and external data to make better investment and operating decisions. They will likely also help companies access new revenue streams to diversify their business and reduce risk.

Figure 1: Real estate owners' technology priorities



Technology solutions, adopted strategically, will also help real estate owners emerge from the COVID-19 pandemic with more streamlined and automated systems and processes. This will be critical for companies as they adjust to the new resultant operating environment.

For example, enhanced systems and processes will be essential to help facilitate a more flexible use of a company's portfolio and within that portfolio, a more user-friendly office experience. Buildings will be carefully managed to enable a more individualistic experience incorporating everything from project rooms, flexible meeting rooms and shared workspaces to social walls, virtual windows and townhall space. Automation will also free up resources to engage in higher-value activities to "do more with less."

This is not to say that advancements are being made by just the rarefied few. Looking at the industry as a whole, technology as a strategic agenda is a high priority for 69% of respondents, and 61% have adopted one or more technology tools. Many of these tools, however, are still at the early stages of adoption.

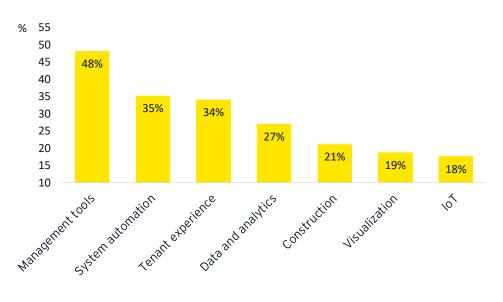
<sup>&</sup>quot;Real estate firms are now realizing they need to shift to the changing technology landscape to stay relevant and gain an edge on their competitiveness," said a US technology provider.

<sup>&</sup>lt;sup>1</sup> EY real estate owners survey, March 2020

#### Attitudes driving delay

However, it is clear that the industry is still in the early stages of this technology shift. While 61% have adopted a technology solution, only 28% have adopted multiple products. Thirty-three percent have integrated one or two technology solutions, but 35% are still piloting, evaluating or assessing the market. A slim margin of 4% has not started thinking about how technology can be applied.<sup>2</sup>





Source: EY research

There are multiple reasons for this lag in adoption, be they real or perceived. Not surprisingly, cost is a major consideration, as is the ROI – the return on the technology investment. Also holding back potential users are the skill sets of staff members (53% of the survey respondents recognize that they do not have the required tech talent), and the traditional if-it-isn't-broken-don't-fix-it culture toward legacy systems that continue to function, though not as effectively as currently available technology.

"Trying to juggle increasing demands from business units all wanting new enhancements, new technologies and reporting tools while maintaining discipline to the annual budget," said a US real estate investment trust (REIT).

Closely linked to that attitude is the view that technology to improve efficiency and reduce cost has never been part of the traditional real estate value-add playbook – at any rate, not to the extent that building improvements or tenant-turnover issues have.

The list of reasons not to innovate goes on. Fifty-eight percent say new systems don't integrate easily into existing infrastructure and processes, and 60% say competing priorities for executive time and investment dollars delay progress.<sup>3</sup> The hesitation to adopt is being noted as well by technology providers, with 43% highlighting the challenge of getting widespread adoption of their tools across a client's business, and 35% seeing a lack of wider process evolution as a result of their application being adopted.<sup>4</sup>

It is not surprising that the real estate industry in general lags other sectors in adopting technology. Companies hesitate at their own peril, risking that one day soon they will find themselves outmoded by their competition.

"The understanding of technology and its relevance for us strategically has undergone a sea change over the last two years, though it remains immature by the standards of other sectors," said a UK REIT.

<sup>&</sup>lt;sup>2</sup> EY real estate owners survey, March 2020

<sup>&</sup>lt;sup>3</sup> EY real estate owners survey, March 2020

<sup>&</sup>lt;sup>4</sup> EY real estate technology company survey, March 2020

#### Taking COVID-19 into account

COVID-19 has expedited the need for the technology evolution by pushing companies to do more with their existing systems. To their credit, in the rush to respond to the rapidly changing crisis, most have been able to adapt. Anecdotal examples from the building management perspective include using in-place technology to hike HVAC system run times (to comply with ASHRAE and CDC guidance) and the monitoring of deep-sanitization protocols.

"Having the right technology tools allows you to effectively run your business. Our service team technology platform allowed us to efficiently track deferred work orders," said a US REIT.

In fact, 78%<sup>5</sup> of respondents say they either have rethought or expect to rethink their technology strategy or the extent to which they adopt new technology tools as a result of COVID-19. We believe two other factors – one directly COVID-19-related, one not – will also accelerate technology adoption in the coming years:

First, COVID-19 is supercharging the industry transformation that was already underway. The way people use buildings and real estate infrastructure is changing, and it will have far-reaching consequences for every sector.

This will force companies to reimagine their operations to extract more value from each asset in their portfolio. This will likely include diversifying revenue streams through additional services and developing new business lines, such as energy generation. To do this, companies will need to make better use of technology, particularly if they want to access consumer-facing revenue streams.

"The industry was already at a very important point where real estate companies were about to undergo significant change and enhancement from new technologies. The COVID environment provided a hard push forward, forcing companies to move more guickly and use more resources toward change," said a US REIT.

Second, industry leaders are beginning to differentiate themselves by adopting multiple solutions at a portfolio and firm-wide level. They have invested in techsavvy talent who can develop and activate company-wide technology strategies. Initially, these companies will differentiate themselves through cost savings, but more significant gaps between the haves and have-nots will emerge as pioneers begin to use internally generated portfolio data sets and analytics to make better investment and operating decisions and, by extension, remain relevant to the larger community they serve. Investor capital will migrate to those winners, widening the competitive gap even more.

"As investors begin to see the benefit of companies adopting technology, we believe they will help drive the industry forward more rapidly in the same way that investor pressure has encouraged companies to do more and report more on ESG-related issues." said Mark Grinis, EY Global Real Estate, Hospitality & Construction Leader.

With 39% of survey respondents yet to adopt even a single technology tool, it is clear that the industry is only starting out on its technology journey. There is still time to ensure that companies adopt technology in a way that is strategic, effective and cost-efficient.



As investors begin to see the benefit of companies adopting technology, we believe they will help drive the industry forward more rapidly in the same way that investor pressure has encouraged companies to do more and report more on ESG-related issues.

Mark Grinis EY Global Real Estate, Hospitality & Construction Leader



<sup>&</sup>lt;sup>5</sup> EY real estate owners survey, June 2020

# Toward an actionable technology strategy

Real estate companies are starting to make headway in their technology advancement, but the difficulties around implementation and the lack of evolution across the business, which results from single-point adoption, suggest that many are not going about this in an organized manner.

"The change in systems, approach and culture that is required in a very fast changing environment can lead to significant operational stress," said a US fund manager.

According to EY research, 82% of companies are assessing and/or adopting externally created technology solutions on an individual basis.

We suggest a three-pronged approach:

- 1. Develop a technology strategy
- 2. Build a path to implementation
- 3. Develop a sourcing plan

Throughout, it is essential to keep in mind the breadth of changes a fully integrated technology strategy will bring. As such, a transformation management procedure is vital to success.

"We had lots of false starts before we finally got onto the right path of implementing technology the right way in our business," said an Australian REIT.

#### Develop a technology strategy

A company's technology strategy must align the enterprise architecture with the strategic direction of the organization. Companies will not realize the full benefits of adoption without a carefully articulated technology strategy that allows each application to communicate across the entire business platform in a fully integrated infrastructure. The ultimate ROI for each tool comes from full integration and the total buy-in of the entire culture.

"The company views technology as critical to the success of the long-term vision. Being strategic and thoughtful with how the technology is utilized is critical," said a US REIT.

A fully realized technology strategy will:

- Ensure the chosen technology is aligned with the company's strategic direction to better align with business drivers
- Improve the ability to use horizon technologies to drive further business results
- ► Enable better decisions concerning technology investments
- Improve the visibility of integration, interoperability and interdependency among various business processes
- Improve the total cost of ownership by promoting reusability and scalability, such as moving into business forecasting models, rather than one-off tactical solutions
- Reduce operational costs by streamlining technology and architectural diversity
- ► Enable faster roll-out of products and policies

The collaboration of professionals from various disciplines – data scientists, IT specialists and business experts – from inside and outside the company is critical throughout this process. It is also important to make sure each is sufficiently aware of the others' perspectives (e.g., data scientists should be exposed to key business processes and pain points).

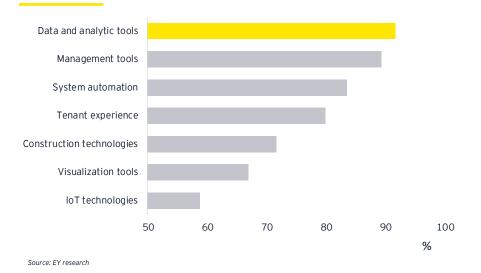
To develop an overarching technology strategy, defining questions that the business needs to answer is a critical first step that will help ensure the process is driven by business need and direction. Doing so will help identify a broad range of use cases and allow the company to select the most promising based on their technical feasibility, their potential business impacts and their alignment with the corporate strategy.

To drill down into the specific areas key to the development of an effective technology strategy, the following should be considered:

- Business context and strategy
- Specific use cases
- Prioritized information needs and data sources internal and external
- Guidelines on data collection and management
- Technology implications
- ► Data ownership and governance responsibilities
- Implementation plans

Data analytics should be at the heart of every real estate company's technology strategy, given the importance and the associated opportunity it brings. Data analytics<sup>7</sup> is the single most important vertical that real estate owners want technology to address, as underscored by 92% of our survey respondents. But only 35% have adopted or developed a tool to date.<sup>8</sup>

Figure 3: Percentage of respondents considering or already adopted solutions by vertical



Historically, many companies have struggled to develop effective data strategies, and the lack of integration between property management and investment management systems and other technologies has compounded the issue. Data-standardization initiatives, such as the OSCRE Industry Data Model, have emerged to help companies develop consistent data standards and frameworks that cover the many aspects of managing the real estate asset life cycle. This is a critical step toward better integration among different technologies, one that ultimately accelerates the shift to truly digital real estate.



<sup>&</sup>lt;sup>6</sup> SSON, SSON Intelligent automation global market report 2020

<sup>&</sup>lt;sup>7</sup> Data analytics is defined as software and other technology utilizing data and AI to provide business insights that improve real estate decision-making.

<sup>&</sup>lt;sup>8</sup> EY real estate owners survey, March 2020

<sup>9</sup> https://www.oscre.org/

### Build a technology implementation strategy

Real estate companies have been struggling with implementation, and 58% of survey respondents say new systems don't integrate easily (requiring a major change to IT or business process to implement new technology). In part, this may be the result of the many different systems in use. In a recent US survey, 10 two-thirds of companies use one of the three leading enterprise resource planning (ERP) system providers, but across the 56 companies surveyed, 15 different systems were highlighted. In addition, many respondents also use speciality systems for specific functions like common area maintenance costs, construction management or hospitality management and integrate these directly or manually into their general ledger system.

A fragmented property technology market and gaps in expectations between real estate owners and technology companies are further exacerbating this issue.

"The current offer is focused on selected stages of the building life cycle. The proptech industry is lacking fully integrated end-to-end solutions that go from asset underwriting, development, construction, sales through acquisition to actual and forecasted results," said a US REIT.

"Perspectives of the acting parties differ tremendously. Proptech is not clear what they really can do and what has to be developed. People in companies hope that there are solutions," said a German fund manager.

We believe this situation will improve as products consolidate under longstanding as well as new and emerging technology companies. Integration will become easier as more end-to-end solutions become available. There are signs of this occurring; since the onset of COVID-19, venture funding has migrated toward later-stage rounds and products with strong adoption. These well-funded leaders with market penetration are already driving consolidation by absorbing complementary products.

Two critical questions should be top-of-mind for real estate owners: What is your business case for implementing tech, and how will implementation roll out?

These questions put the focus on long-term business goals and consideration of the technological infrastructure that will facilitate those goals. Flexibility and scalability should be key considerations. Companies also need to refresh their approach regularly to keep their infrastructure current, which creates a strong foundation for further implementation.

"There needs to be a platform approach rather than a transactional focus," said an Australian technology provider.

Targeting quick wins through this process is also helpful. Companies can address significant business pain points while building the skills, methods, tools and infrastructure needed for long-term delivery.

A "big bang" technology transformation may in certain circumstances be appropriate. Otherwise, companies developing a tech-implementation strategy may wish to take an enterprise-wide approach through consecutive small iterations – always keeping the ultimate technological goal in mind.

#### Develop a sourcing plan

Sourcing reliable providers, and not just the cheapest solution, is essential to the process, and they, too, must be seen as collaborators in the transformation even if the choice is to start with buying an individual-point solution or a managed-service product. There are other ways to begin the journey, such as developing and managing products in-house and customizing existing products. All are proven methods of foundational technology creation. Companies should also look for solutions from outside the real estate sector.

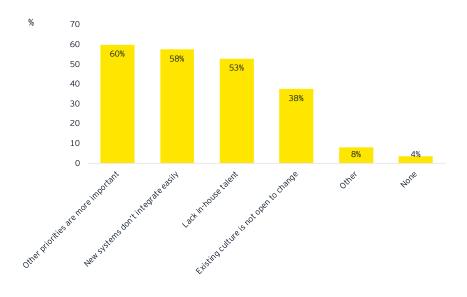
It is encouraging to witness technology providers and real estate owners beginning to work together to create products that have the potential to be commercialized. These groups are evaluating the marketability of their developing software/ IP solutions.

<sup>10</sup> EY real estate owners survey, 2019

The development of an actionable technology strategy is a transformational process. It demands more than specific, targeted steps such as hiring a strategy champion or sourcing a particular vendor. It requires the redefinition of various management approaches to ensure the technology strategy aligns the enterprise architecture to the strategic direction of the company. But as our survey highlighted, implementation challenges and staffing issues are two key barriers to technology adoption. In addition to the survey results, the other big issue we see is program and transformation management.

"It's slow and expensive, but we know that once we're past the adoption challenge, it's going to be profitable and efficient," said an Irish real estate conglomerate.

Figure 4: What are the main challenges you face regarding implementation?



Source: EY research

"Limited resources and competing priorities often trump new technology solutions. Too many companies in the proptech and systems space are not integrated," said a US REIT.

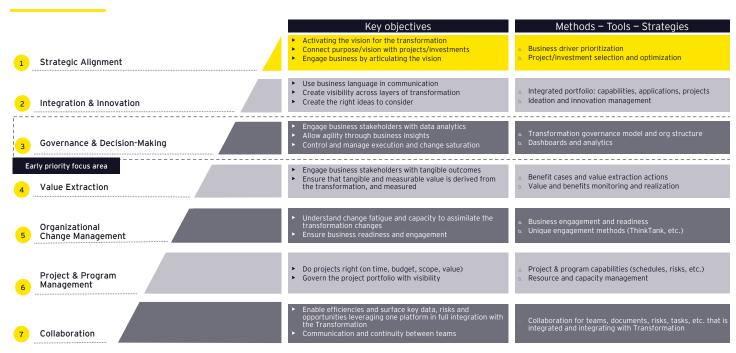
One way to improve program and transformation management is to start by establishing a transformation management office. The technology journey will likely be ongoing for most real estate companies. As such, creating a central team ensures a consistent and comprehensive integration of strategy, delivery, risk management and realization to ensure business objectives are achieved.

A focused group headed by a technology leader (a CTO, possibly hired from outside the industry) and populated with representatives from across departments can improve workstream delivery, facilitate personnel buy-in and ultimately enhance value.

In addition to the CTO, another critical position in the transformation office is the company CFO, the keeper of the keys to the company coffers. Companies need a truly forward-thinking change agent who can do more than improve the status quo. The right CFO will help drive this agenda in a way that is highly effective.

The foundations of an effective transformation management office are shown in figure 5.

Figure 5: Overview of the foundations of an effective transformation management office



Source: EY research

As the transformation management office begins to build out its technology strategy by implementing new tools, specific considerations must be taken into account to ensure successful deployment:

Start transformation management at project kick-off. It is unwise to wait until go-live. Transformation management is a process in itself, requiring significant time and attention. For example, communication activities should begin before project kick-off and should continue throughout deployment.

New systems will not fix old problems. While a new tool or system could be part of the plans to address poor performance (alongside other tactics like better training and improved processes), a new software system by itself will not fix any real business problems.

"Decision makers are drowning in a hail of silver bullets. This is driving some scepticism," said an Australian technology provider.

Consider the control environment. Controls are one of the most effective ways to convince senior management of the need to adopt technology. This is particularly true in situations where technology will automate processes and in so doing diminish the human error that could ultimately result in a breach.

But those same controls are also a critical barrier to overcome when plugging into any new application. Do third parties charged with providing new technology and helping integration truly understand the parameters in which a public or private real estate company must operate? Will they adapt their integration processes to meet specific regulatory requirements? The intersection of highly creative technology people and inflexible industry rules and regulations can be a major headache.

Assess the impact of automated controls early in the process. The inclusion of automated controls in new technology implementation needs to be considered at the design stage of the implementation, when the company is developing its business requirements. These considerations are difficult to implement after go-live.

Go beyond the conference room to assess need. Gathering business requirements in a conference room almost guarantees key data and use cases will get lost. Recognizing that at least a portion of requirements-gathering is "situational" provides an extra level of validity to the findings.

Keep decision-making on track. Most steering committee and task force members have day jobs in addition to their technology-transformation roles. This creates competing priorities. This frequently means that questions and decision points don't get answered in a timely manner or are not

given the appropriate amount of thought. Slow or incomplete decisions can lead to a longer project, frequent reworking and more confusion, all of which could carry additional costs.

Migrate data with confidence. Nothing destroys perceptions about a newly deployed system or tool faster than bad data. Many companies push data migration testing to the very end, which means it doesn't get tested as thoroughly as it should.

Always perform User Acceptance Testing (UAT) with actual business users. Many organizations limit UAT to having system administrators log in and probe through a few key use cases. We strongly recommend a thorough UAT as part of each sprint toward go-live. Furthermore, the actual system users must participate in the UAT testing. To the extent possible, the UAT testing should use realistic data.

Mobilize and prioritize a top-tier hypercare process. This is critical to supporting your go-live. Any major system issues (whether stemming from technology, process or people) are likely to surface within the first month after launch, if they surface at all. For that reason, plan to include a high-touch hypercare period.

**Crawl, walk, run, fly.** Get the basics right first and build from there. Technology adoption will most likely be an ongoing program, not a finite project.

Analyze old processes for a new day. Do not drop your existing processes into the new system. Rather, carefully analyze how you conduct business to leverage what your new system enables. Take the opportunity to reassess and potentially redefine processes.

"Technology adoption is often about refining the process vs. introducing a new tool," said a Canadian pension fund.

#### Talent creation and management

If people are not the most significant impediment to more rapid adoption of technology, they are certainly in the top tier.

"It's people, not technology, that limits the growth of proptech ideas," said a Hong Kong fund manager.

There is no doubt that when it comes to technology in the real estate sector, talent is an issue. Technology and real estate companies alike recognize it, and 53% of real estate owners say they don't have the in-house talent to adopt technology successfully.

But it is not just about talent. Thirty-eight percent of companies suggest their existing culture is not open to this type of change. The industry is still over-reliant on what has proved reliable in years past and thus, in many cases, it is resistant to change. This resistance can take many forms.

For many senior leaders, the issue is less about potential benefits and more about the cost to replace older but still working systems. They tend to find it hard to justify scrapping systems that have been working for years or even decades. They also tend to hesitate going much farther out on the risk scale than their competitive peers. Breaking that ingrained mentality will continue to be a challenge.

For more junior staff, there is the hurdle of visioning how adopting technology can improve operational processes and therefore benefit the company. Staff members need to trust the new system and its output, even though they often feel it will take them longer to learn how to use a new tool as opposed to completing processes the old, comfortable way. Leadership in transformation management – such as the transformation office, will go a long way to solving such personnel issues.

"Very often people tend to resist change, even when they know their current process is inefficient. It seems they are afraid of the unfamiliar new tools and technologies. Strong sponsorship is required," said a US technology provider.

From an engagement perspective, company leadership needs to articulate clearly and comprehensively their vision to staff, outline what changes will be enacted and what they will achieve. This must be supported by a strong business case so all employees can embrace the vision. Communicating this to the entire company, and not just to the individuals in areas most impacted, is essential. From here, more detailed plans can be developed and communicated to all stakeholders.

"We are trying to teach people how to accept the agile delivery of technology. It can be challenging as people have grown to expect that a solution will do everything immediately," said a US REIT.

Companies need to work closely with their technology partners to deliver extensive training to all staff members – and not just those most directly impacted by the new tools. The nature of that training is also critical; the real estate industry is not a tech-savvy sector, so technology providers and real estate owners need to work together to bridge the knowledge gap in a way that is inclusive and engaging.

"Companies need to be prepared to manage fully digital operations that integrate and align the data, systems and teams that process inter-dependent workflows. It requires a different internal team," said a US technology provider.



These are indeed exciting times for the commercial real estate industry, which continues its reinvention toward more technology-enabled operations and service propositions.

There have been notable leaders in this technology transformation, pioneers that have been able through these advancements to reduce cost, improve operational efficiencies and enhance tenant engagement, and in so doing improve their profit margins.

Others are following as they strive to achieve those same benefits and differentiate themselves in a competitive marketplace. Companies successful in this endeavor must embrace change, not just in the systems they employ but often in the very foundations of their culture, redefining issues such as hierarchy, staffing and training.

Technological transformation will be an ongoing journey for companies over the coming years. Setting out with a well-thoughtout and clearly communicated strategy will be a critical enabler of future success.



#### About EY

EY is a global leader in assurance, tax, strategy, transaction and consulting services. The insights and quality services we deliver help build trust and confidence in the capital markets and in economies the world over. We develop outstanding leaders who team to deliver on our promises to all of our stakeholders. In so doing, we play a critical role in building a better working world for our people, for our clients and for our communities.

EY refers to the global organization, and may refer to one or more, of the member firms of Ernst & Young Global Limited, each of which is a separate legal entity. Ernst & Young Global Limited, a UK company limited by guarantee, does not provide services to clients. Information about how EY collects and uses personal data and a description of the rights individuals have under data protection legislation are available via ey.com/privacy. For more information about our organization, please visit ey.com.

Ernst & Young LLP is a client-serving member firm of Ernst & Young Global Limited operating in the US.

© 2020 Ernst & Young LLP. All Rights Reserved.

US SCORE no. 10315-201US CSG No. 2009-3578965 ED None

This material has been prepared for general informational purposes only and is not intended to be relied upon as accounting, tax or other professional advice. Please refer to your advisors for specific advice.

ey.com