

Concurrent Session: Trends

*Thursday, March 23rd
9:45am – 11am*

La Quinta Resort & Club, La Quinta, California

Moderator:

Joshua Herrenkohl, Principal-EY Global RHC Advisory
Leader, EY

Panelists:

Meredith Darnall, VP-Creative & Brand Strategy, General
Growth Properties, Inc.

Michael Marchuk, Advisory Partner Director, Blue Prism

Parimala Rao, SVP-Information Technology, SL Green

Ranjini Venkatesan, AVP-Analyst, Moody's Investor
Services

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Recruiting your Digital Workforce

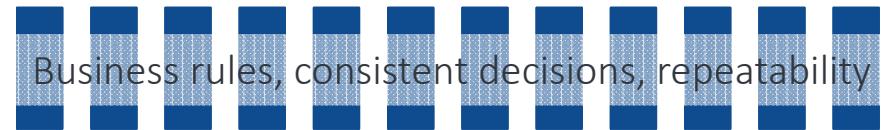
People – Process – Technology

The modern enterprise uses a combination of people and technology to fulfil their Business Processes

People



Technology



As processes **change** in the competitive enterprise, for many business cases, the technology we use can't be adapted, evolved or developed at the **speed** at which the business needs to effect these changes

In these areas, people are used to fill the gaps between systems and process.

People



Technology



Let's Hire Some Robots

Mimics
Human
behavior

Scales &
performs
efficiently

Resilient
& Well-
governed

rism

- Reads screens (visually)
- Trained to complete tasks by a human operator
- Orchestrates third party systems
- Can work across multiple projects / workstreams

- Material cost reduction potential on human resource
- Works 24/7, Unattended, completely consistent performance / outcomes
- Able to scale up and down quickly
- Performs at scale, stands up to penetration testing
- Easy to train and use – no coding experience required

- Complete audit – records everything and becomes repository of business rules
- Provides management intelligence to improve processes
- Designed to support regulatory compliance

- A Digital Workforce powered by software robots
- Automates interactions through rules based processes
- Manipulates, operates and orchestrates other application software
 - ERP, HR, Billing, CRM, Claims Management, Financial Management, Transaction processing

Who's Doing the Hiring?

Information Technology

Enterprise Infrastructure

Regulatory Compliance

Supported Platform

Secured Environment

Scalable Cloud Deployment

Operational Assurance

Business Operations

Flexible Pipeline Management

Ease of Demand Management

Autonomy - Faster to Deliver

Ability to adapt to detailed Insights

Rapid Change Mode

Analogous to Existing Workforce

Meet the RPA Candidates

Shadow IT

Business owned, IT Supported

IT Owned – “How long do I have to wait?”



Desktop Recorded Automation

Multiple, short, record and replay tactical automations aimed at navigating systems on the desktop



Digital Workforce Platform

Secure, Enterprise strength, scalable, server-based capabilities that are designed to deliver strategic benefit



IT Developed

Provides a ‘virtual API’ to assist IT projects where interfaces don’t exist



Interviewing for a Digital Workforce

work can I assign? How
transform my organization
using a digital workforce?

organization have a lot
of tasks that require
to connect to various
systems to support?

I looking for help? Am I
looking for an “intern” for a
short term fix or could the
solution be more
comprehensive?
*(issue, quality issue, quantity
issue, improve customer service)*

Who would manage and assign
the work? Who understands the
work being done?

What would my environment
look like in six months? Who's
going to take responsibility for
this?

Am I ready to support the
solution myself? Am I working
with IT or around it?

How easy is it for you to
learn something? What
happens if the process
changes? Do you have
to start all over again?
How flexible are you to
changes?

Can you adapt from
working one process in
Finance, to another
process in HR, to
another process in IT
without stopping?

Do you work well on
your own? When you
have a lot of work to
do, can you ask other
digital workers to help
out until the demand
slows?

How do you respond
when you run into
something you don't
know how to handle?

Defining the RPA Robotic Operating Model

- Defining the vision for process automation
- Identifying the expected business benefits and outlining how these align to corporate strategy
- Defining the organizational design that best supports delivery of the RPA capability and aligns with corporate strategy and culture
- Defining the opportunity assessment approach and pipeline triage procedure to optimize the number of processes selected for automation and the maximize the associated business benefit
- Agreeing to the delivery approach based on methodology and embedding the templates and policies in client change management methodologies
- Defining the delivery management and tracking approach that ensures optimal usage of the defined methodology
- Agreeing the engagement model required to support operational processes
- Defining the management, reporting, scheduling and referral handling processes for BAU
- Defining the roles and responsibilities that will operate efficiently in the existing organizational structure
- Supporting the selection of candidates for all roles in the delivery and support teams and optimum training/mentoring approach for the delivery and support teams
- Defining a scalable, low maintenance technical environment and associated growth strategy

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The Seven Pillars of Enterprise RPA



Demand Management

Operations



Business Benefit

Operationally Led Center of Excellence

IT Supported Enterprise Infrastructure

ntional
nance &
ctivity

erformance
ctivity
Execution

rism

Ease of
Development &
Maintenance

Balancing speed of
development with
performance
Ease of maintenance

Methodology &
Business
Implementation

Operating Model
Training &
certification
Development
methodology
Customer support
framework

Security

Security model
Security hardening
Data Security
Access Security

Resilience

Redundancy model
Failover Design
Disaster Recovery
Load Balancing
Process Resilience

Governance, Risk
& Control

Audit
Accountability
Activity Monitoring
System Audit
Release Management
MI

Scal

Deployment
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Enterprise RPA Maturity Model

ize the full potential from Robotic Process Automation requires a focus on adapting the culture of the organization as well as building specific RPA mind capability.

Establish Capability

- Define vision and target operating model
- Define organizational roles
- Establish governance board, demand pipeline and support model
- Roll out standardized approach and processes for defining scope and benefits
- Establish CSFs and communicate outcomes against KPIs
- Train core RPA team
- Establish environments, architecture, and delivery methodology
- Deliver initial processes/benefits

Replicate & Ramp-Up

- Seek additional processes for RPA
- RPA is a core component of technology stack
- Align RPA with future organizational design decisions
- Showcase process automation successes
- Incentivize staff on identifying and proposing automation opportunities
- Track benefit realizations
- Core team to train and mentor new team members
- Establish an RPA code of best practice
- Shift to fully virtualized architecture

Deliver Differentiated Performance

- Virtual Workforce embedded at the heart of the organization with seamless handover of work between humans and robots
- Embed RPA benefits realization tracking as a core performance measure for automation roadmap
- Run strategic campaigns and initiatives to generate demand
- Deep skills and Kx across teams
- Embed lean methodologies and culture of continuous improvement
- Implement DR & failover capabilities

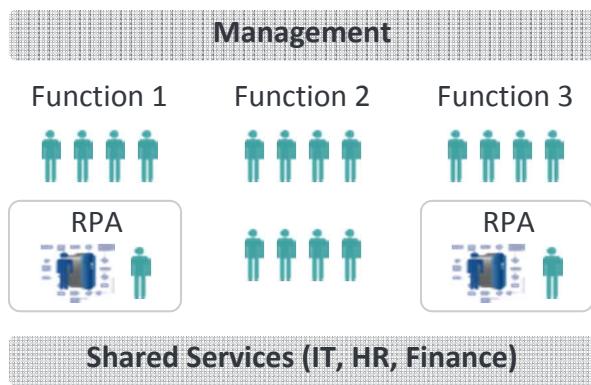
Cultural Adoption →

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Selecting a Robotic Operating Model

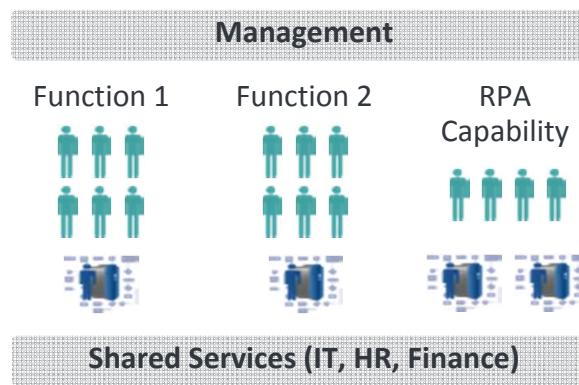
is an opportunity to realize the benefits from robotic automation irrespective of the scale of implementation and operating model design.

Divisional



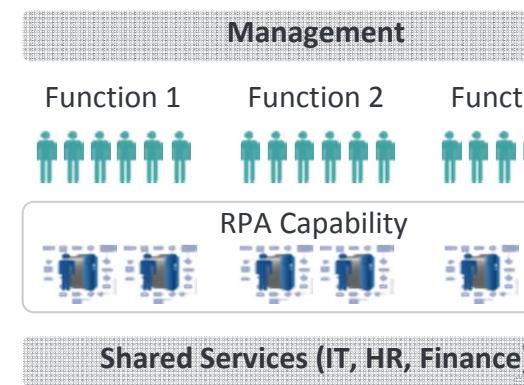
- Low cost automations across selected operations functions
- Ideal model for establishing Robotic Automation Capability in a specific division or divisions with minimum dependency on other functions
- Not scalable across the enterprise
- Standards can become fragmented and difficult to impose
- Can lead to duplication of hardware infrastructure and Blue Prism deliverables

Federated



- Low cost, scalable automations across multiple operations functions using a central and standard platform
- Appropriate where the operations team will retain ownership & responsibility for a shared robotic process automation capability
- Implementing centralized change and automation delivery management disciplines across multiple operations functions can be problematic if the model does not already exist

Centralized



- Low cost, scalable automations across the enterprise using a central and standard platform
- Perfect model where a Centre of Excellence is already established in the organization
- Implementing a Centre of Excellence culture in the organization is a major investment if the structure does not already exist
- Capability can become a resource bottleneck



Getting started...

A pilot should mirror the key attributes required to establish the Capability. It should showcase these and provide an understanding and awareness of the competencies, skills and organisational engagement for a successful roll out.

Establish Capability

- Define vision and operating model
- Quantify potential business benefit and cost of ownership
- Showcase ability to view and rapidly control workload allocation
- Demonstrate secure access controls and regulatory compliance
- Understand technical infrastructure requirements and IT engagement
- Showcase sample process automation
- Learn how to configure processes and the associated delivery methodology
- Demonstrate re-use of components and process resilience

Pilot

Replicate & Ramp-Up

- Seek additional processes for RPA
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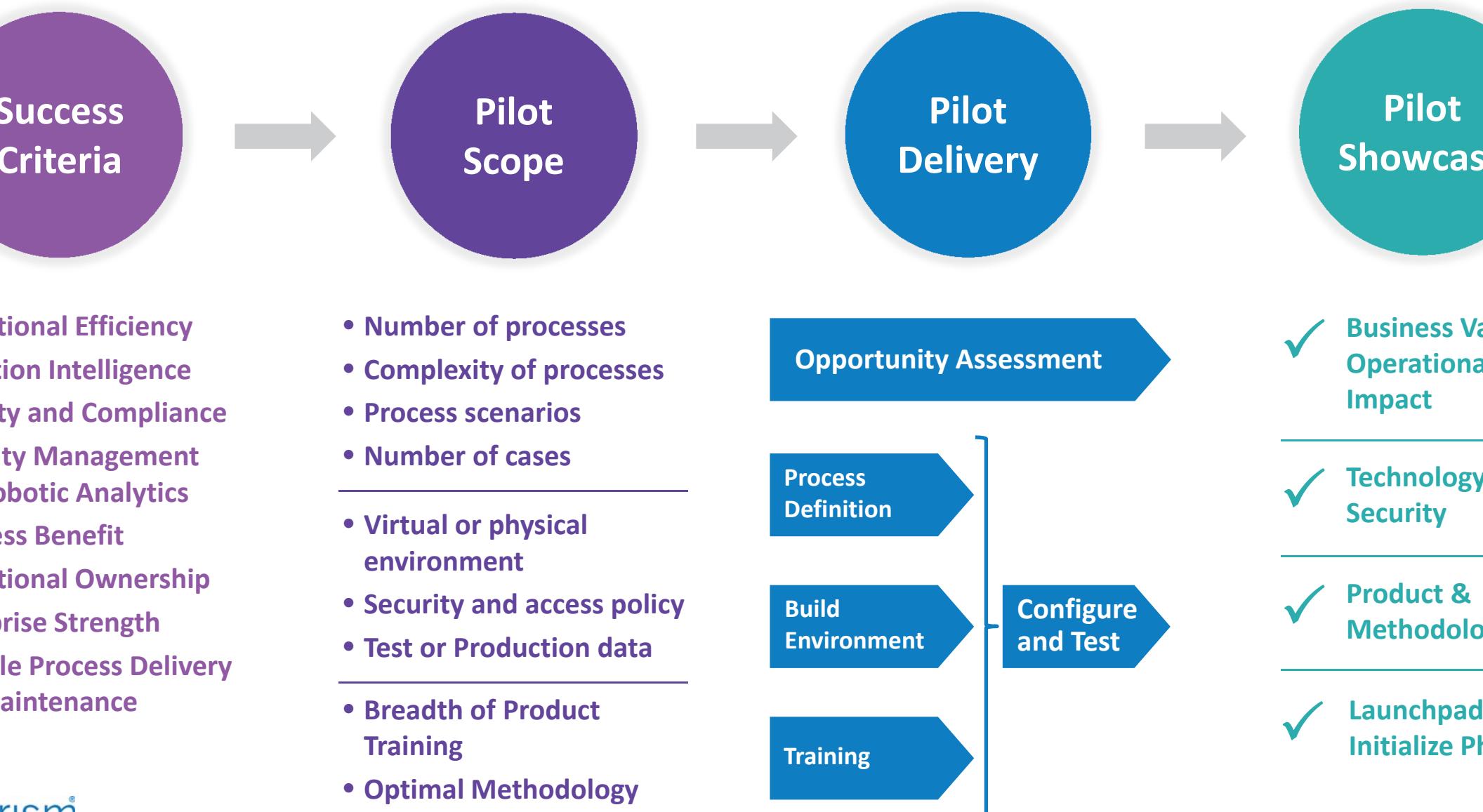
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Cultural Adoption →

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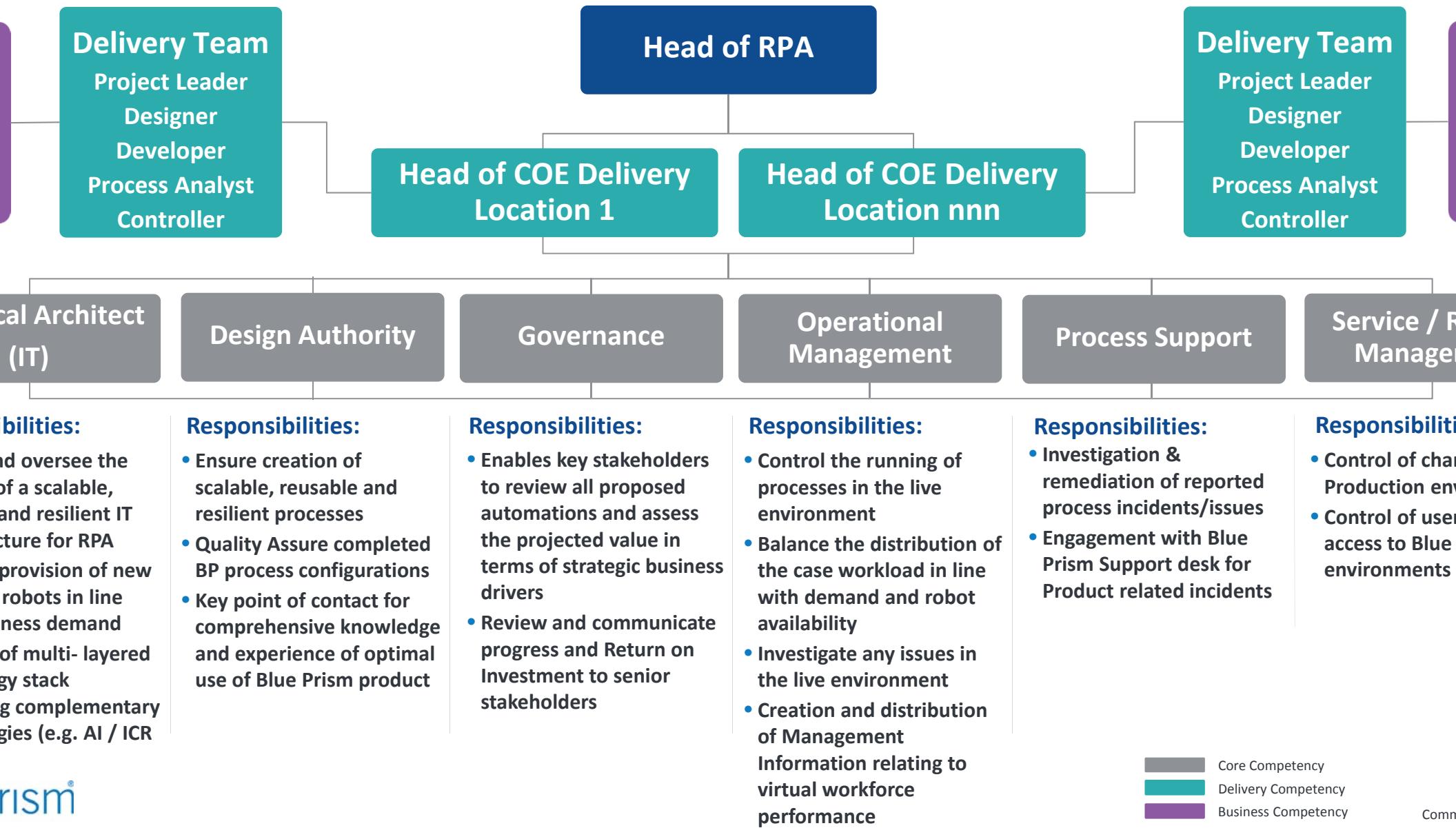
Piloting an RPA Capability



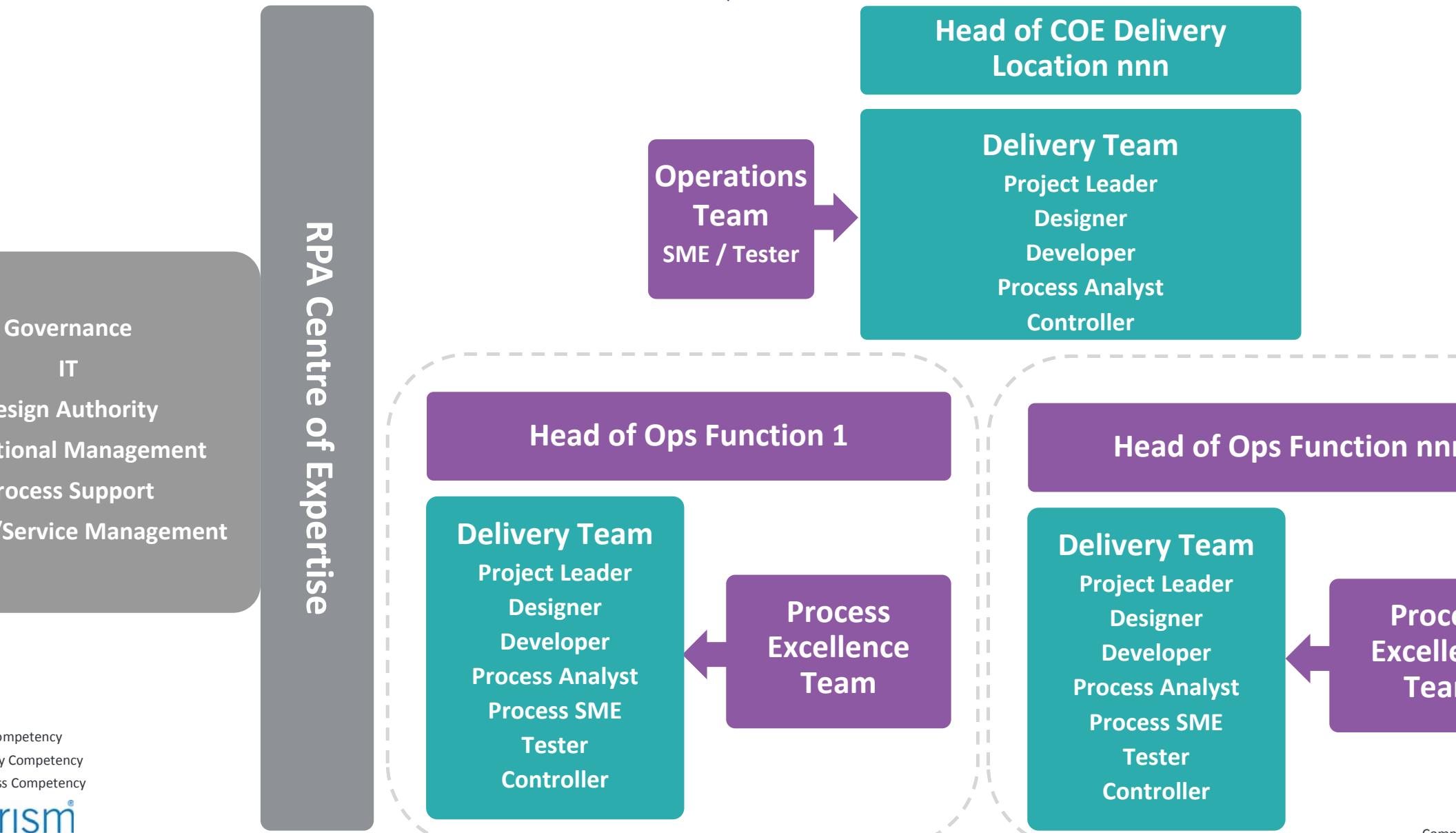
Common RPA Pilot Failures

| Category | Common Pilot Shortcomings | Impacted Stakeholders |
|--|---|--|
| Inadequate Workload Management | <ul style="list-style-type: none"> • Workload inputs split manually so the process can run across multiple robots • Lack of Management Information about cases processed, decisions made and actions taken across all robots reduces ability to respond rapidly to changes in workload | • Head of Operations |
| Inadequate Product Knowledge gained through | <ul style="list-style-type: none"> • Lack of formal training, supporting tutorials and associated certification not provided. This leads to an incomplete understanding of all the product's strengths and weaknesses <p>Or</p> <ul style="list-style-type: none"> • Developers from IT or the supplier required to deliver the Pilot thereby reducing the business teams' understanding of the product functionality | • Head of Operations |
| Scripts run as files on desktops to prove" automation | <ul style="list-style-type: none"> • "Hit and Hope" approach leads to inefficient processes: • Lack of intelligent waits • Lack of scalability through re-use of components • Lack of resilience to handle the unexpected • Multiple versions of the scripts running on disparate desktops | <ul style="list-style-type: none"> • Head of Operations • IT Security • IT Architect |
| Poor Access Control protocols side-by-side | <ul style="list-style-type: none"> • Introduce the potential for rogue developers to run processes against production data • Alienate the IT Security teams • Expose customer data to the risk of being compromised | <ul style="list-style-type: none"> • Head of Operations • IT Security • Risk Management |
| Non-compliance with formal management systems and delivery methodologies | <ul style="list-style-type: none"> • Pilot does not give true insight into total cost and impact of ownership • Lack of insight into the roles and responsibilities required to deliver and support processes in the Digital Workforce | <ul style="list-style-type: none"> • Head of Operations • Head of IT |

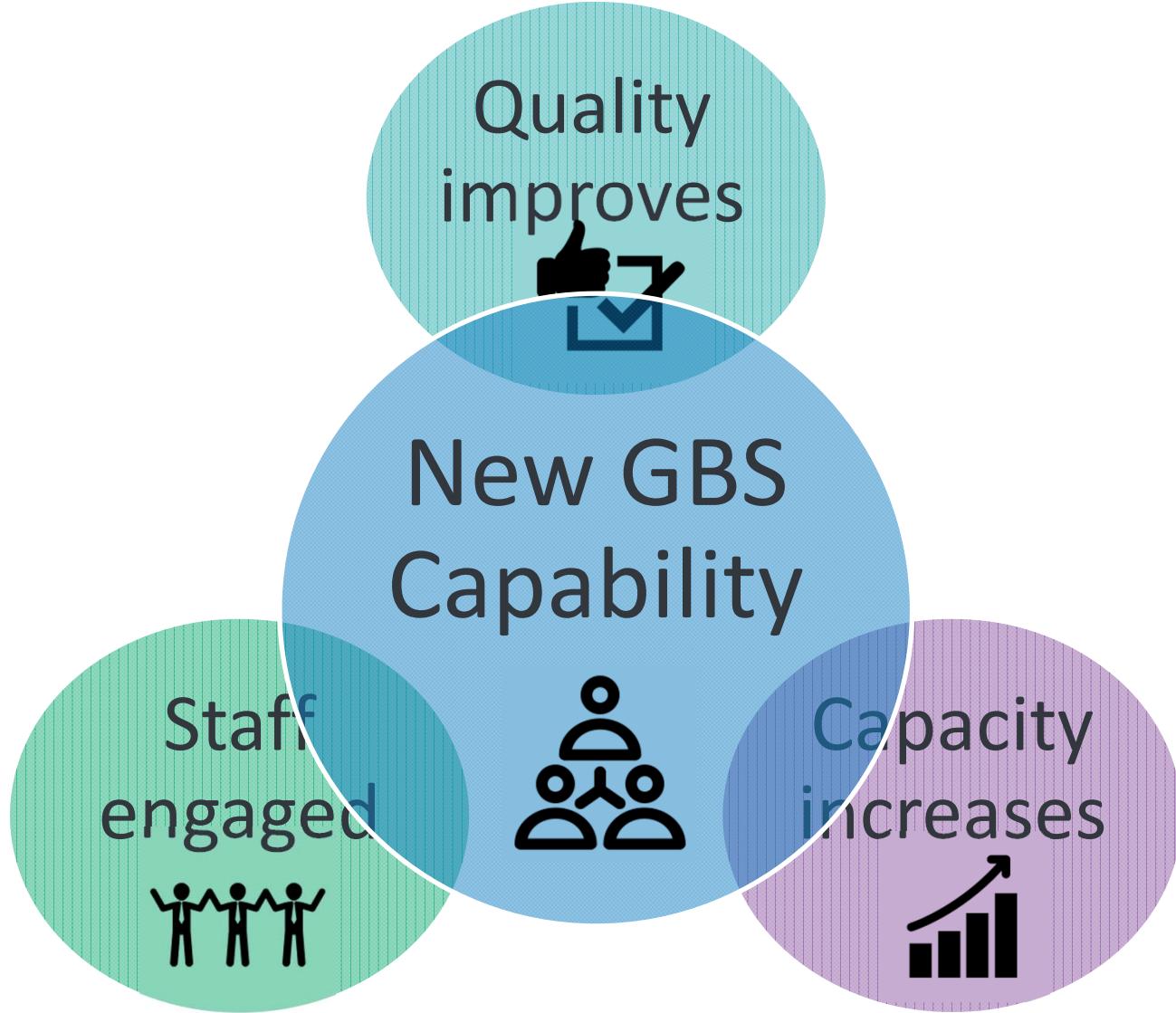
Initialize – Centre of Expertise & Execution



Industrialize – COE with Federated Execution



What are the implications of a successful RPA strategy?



Further Information

Michael Marchuk | Advisory Partner Director | michael.marchuk@blueprism.com | +1 815-260-7500

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The background image shows a modern architectural structure with a complex steel frame and a glass facade. People are visible walking on an upper level of the building.

2017 Global Market Outlook

Trends in real estate
private equity



EY

Building a better
working world

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Introduction: golden age or fading glory?

As we move into 2017, there are many signs that real estate funds have been in something of a golden age over the last few years. As last year played out, closed-ended funds had record amounts of dry powder at their disposal, with managers worldwide holding US\$239b to deploy (at December 2016), up from US\$210b in 2015 and significantly higher than a decade previously, when the figure was just US\$132b, according to Preqin figures.

As these statistics demonstrate, the fundraising market has continued to be robust as all types of investors, from pension funds and insurance companies through to sovereign wealth funds and family offices, increase their allocations to real estate. Many now allocate between 8% and 10% to the asset class, and their quest for yield in a persistently low-interest-rate environment, and an era of loose monetary policy, is leading to real estate investing representing around 10% of the economy in many markets. They are attracted by returns that offer a better reward than the negative yields now seen in many fixed-income investments.

At the same time, the asset class has not disappointed, as distributions from funds have reached record levels over the last three years. Indeed, 90% of LPs said the performance from real estate private equity funds had exceeded their expectations over the last year, according to a Preqin survey. It is little wonder, then, that re-up rates are high: around 90% for larger funds, and in the high 80s even for smaller ones.

And as appetite for the asset class shows little sign of abating, some firms are increasingly offering investors a choice of ways to access the market, expanding into new areas, such as monetizing a portion of the manager, broader co-investment opportunities, and open-ended debt funds.

This demand for real estate and innovation in product offering is overlaid with emerging levels of technological innovation filtering through to the market, with smart buildings enabling incremental but significant cost and efficiency savings, new technologies such as robotics and artificial intelligence improving back-office operations, and big data and analytics providing a level of granularity of information that has the potential to open up new windows of investment opportunity and change the way strategies are identified and executed.

And yet ... there are many in the market who would question whether real estate is now starting to head toward its eight-year nemesis known as the real estate cycle. With so much capital directed toward real estate investment globally, managers face high

levels of competition for the few deals that come on to the market. Investors also reacted to these concerns as 2016 fundraising dipped 15% from 2015 levels to US\$104b.

As described in the section on global capital flows, not all markets are at the same point in the cycle. The diminishing role of easy money from central banks, coupled with early signs of inflation and growth, is exposing the market to a price correction of some kind. Investors in many markets are now highly cognizant that real estate may be in the late stages of the cycle. With the traditional 10-year fund life, new capital raised is likely to experience some ebb in what has been a one-way growth trajectory in values. Signs of market stress are already appearing as US REITs are trading down on last year's levels and the National Council of Real Estate Investment Fiduciaries index declined through 2016, following several years of rising returns.

The handoff from monetary policy to fiscal policymakers will become ever more important, as the levers that drive NOI growth will need to keep pace with investors' demands for higher yields via expanding capitalization rates. The policies that emerge from a Trump administration, Brexit and Abenomics will all be critical to understand when devising global investment plans.

So, while there is much to suggest the real estate fund market is on solid footings, we are expecting some fault lines to show as 2017 progresses. Set against this context, we hope our Global Market Outlook for this year will provide some food for thought in advance of some interesting times ahead.



Mark Grinis
Global Real Estate Fund
Services Leader, EY

Technology and real estate investment: disruptors in the industry

The creation of real estate-specific IT and reporting systems, the adoption of new software packages and the development of platforms that can be tailored to a specific fund manager's needs have all improved the efficiency of operations in the real estate space and enabled the expansion of the asset class into new areas.



Yet this is only the start. The developments we've seen so far are just a drop in the ocean compared to what we will see over the next several years. The technology deployed by fund managers today is version 1.0. What's to come is technology 2.0, and these developments have the potential to both disrupt and transform how real estate funds conduct their business. New technology will change not only the way real estate fund managers run their back and middle offices, but how they identify new opportunities, source deals, communicate information among the hundreds of different parties they interact with and run the assets they own.

Traditionally, the real estate industry has been behind the curve when it comes to adopting new technologies. The industry's growth has, in the past, been driven by an entrepreneurial flair and mindset. There is clearly still a large place for this. Yet as firms become larger and more institutional in nature, and as competition for assets and investors intensifies, those most able to deploy and embrace new and future tools to improve operational performance

and increase efficiency across their business lines, activities and functions – and potentially use these technologies as a platform for new business models – will be the ones that generate the strongest returns for investors. Meanwhile, those that fail to keep pace will face disruption and may find they become obsolete.

While real estate fund managers may have been slower than some other industries to adopt operational enablement tools, they can benefit from the experience gained in other sectors. By thinking strategically about where the business wants to be in the medium to long term and how new developments can shape future strategies, real estate fund managers can effectively leapfrog some of the developments and move to some of the more advanced models and technologies.

Over the next few pages, we outline some of the tools available both now and in the not-too-distant future that have the potential to help real estate fund managers operate their business more efficiently to drive maximum returns for investors.

Big data and analytics

The ability to collect and analyze large volumes of data has transformed the way many industries do business, and nowhere more so than in consumer-facing companies. Driven by the development of online retailing, the use of social media platforms and the widespread adoption of smartphone apps that track location and online searches, the most advanced companies now understand customer habits, preferences and opinions better than ever. They can adapt their offerings, adjust pricing and meet demand for services and products in ways that optimize sales and profitability. They are also using big data to track individual items in a supply chain to improve the efficiency of their logistics operations, analyzing employee tasks to determine optimal working patterns and employing predictive analytics to identify new, untapped markets.

This is clearly a different model from the real estate fund management business, but these new technologies have some powerful applications here, too. The key is to understand how to harness and analyze large volumes of structured and unstructured information, much of which is already available if you know where to look, to improve processes and offerings to tenants.

Improving “stickiness”

The most obvious use for these technologies is for retail asset owners. With so much information available about how shoppers move about retail spaces, how they shop, what they buy and where they eat, planning for development or redevelopment of retail spaces can be much more informed than in the past. The data collected, if leveraged efficiently through advanced analytics, can provide insights into where specific stores should be located and what kind of amenities customers use and like to see in shopping areas. This kind of trend data can boost sales and profitability for retailers, making the asset a highly attractive one for retail and food tenants.

Yet this kind of analysis can also be used in other areas to increase the attractiveness of an asset for tenants, to improve so-called “stickiness.” In office buildings, for example, gathering information to understand how tenants’ employees spend their day within a space can help owners tailor the services and overall offering so that it meets their needs and activities. There is also information that can be gleaned from, for example, technology designed to improve security, such as when people enter and leave buildings. If this data can be harnessed, owners can gain an understanding



of how traffic volumes change through the day and therefore design spaces and help tenants create work patterns that minimize hold-ups and improve productivity.

There is also an increasing trend toward creating “communities,” for example, in office as well as residential spaces: by building profiles based on the demographics of an area and the type of tenants an asset owner is seeking to attract, there are opportunities to provide amenities that can bring sometimes disparate tenants together. In one recent example, an owner provided tennis courts and ran events and competitions between employees of different companies.

Equally, the same kind of analysis can be carried out in industrial spaces and warehouses to understand how tenants use the space. If an owner can then add a layer of information about how their customers and suppliers are behaving, plus key economic trends, this kind of insight enables them to provide a more bespoke offering that suits the company’s needs.

While price and location will always be key determinants of whether a tenant first chooses a building and then of whether it decides to remain there, owners that can demonstrate value above and beyond what competitors can provide, based on analysis of large volumes of relevant data, can improve occupancy rates and drive higher returns.

The potential for cost savings

Yet gathering valuable data about the buildings is only part of the picture. Managing a fund clearly requires the collection of large volumes of information for investor reporting or for payments to third parties, for example. With the right tools, managers can analyze this information to find potential cost savings, such as through simplifying and rationalizing the number of relationships with third parties. By understanding how many contracts a fund has and with whom, firms can use the information to negotiate better deals either through consolidating suppliers or obtaining concessions.

In addition, analytics can also be used to improve the efficiency of back-office operations to help improve accuracy in areas such as invoice payments or CAM reconciliations. Other industries have already adopted this technology, generating some substantial cost savings as a result.

Future opportunities

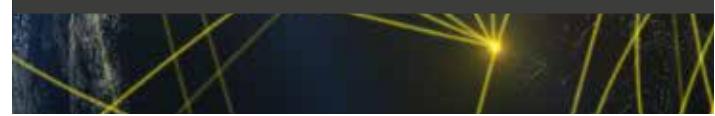
One of the biggest operational leaps that real estate funds could make through the use of big data is employing predictive analytics to identify new opportunities for investment. The identification of both specific opportunities and of new strategies to pursue has so far been down to the entrepreneurial talents of individuals in real estate. This is often based on a lot of legwork and analysis of previous deals in a space using information that may be incomplete and out of date.

Real estate funds could take a page out of the hedge fund's book to employ large volumes of data to drive strategic decisions. Clearly, hedge funds are completing thousands of trades a day – a world away from the situation in real estate – yet by gathering and analyzing information on both macroeconomic and microeconomic, demographic and environmental trends and using these to predict where demand for specific types of buildings will be greatest, accuracy of decision-making can be vastly improved. Leasing, employment, foreclosures and rent growth are often looked at singularly as a composite of aggregated data. When decoupled into individual events, and being able to evaluate micro trends, catching submarket activity will lead to better investment or divestment strategies. While individuals will always be needed to make the decisions on future direction and negotiate deals, overlaying this kind of analysis – which can be generated quickly and without the need for expensive travel – has the potential to improve the basis for these decisions and could ultimately help attract capital from investors seeking high-quality information on which to base their allocation decisions.



How to harness the potential

- 1** Understand what data is already being captured and review how this could feed into strategic decisions.
- 2** Work out what resources you might need to support data analysis – this could be by partnering with technology companies or hiring people in-house.
- 3** Identify where you may have gaps in the data and find ways of accessing this – for example, by creating client or tenant questionnaires to gather information.
- 4** Invest in technology that can consolidate and analyze often disparate and diverse sources of data.
- 5** Start small and build capability over time. The development of the cloud, for example, has made collection and analysis of data more straightforward and cost-effective than previously.



Smart buildings

The development of sensor, wireless and Internet of Things (IoT) technology is revolutionizing the way buildings can be managed. Worth US\$68b globally in 2014, the smart buildings market is projected to reach around US\$120b by 2019. Indeed, many new developments across the globe are now smart, with the main benefits being to enable owners and managers of buildings to trim costs and provide an optimal environment for end-users. This clearly has the potential to improve returns through cost-saving and by improving occupancy rates; in some countries deployment of technology is being driven by environmental and regulatory considerations, while in others limited resources and rapid urbanization are behind the use of smart developments.

Smart buildings incorporate sensors into almost every conceivable part of the asset's fabric, backed up with software, hardware, analytics platforms and the cloud. If we take the example of the humble air filter, by using today's technology to monitor the air quality and function of the filter, owners can remove the guesswork from when it should be replaced. Rather than having scheduled maintenance programs, sensors can alert the building manager when the filter is reaching the end of its life, saving money on parts and labor for unnecessary replacements (i.e., if the schedule meant replacing too early) or on energy costs (if the filter was scheduled to be replaced too late).

This is clearly a tiny example of what can be achieved. Yet consider the incremental cost savings of having sensors on filters, windows, window shades, elevator parts – all pieces of equipment. Add to this the ability to control all the moving parts in a building remotely from smart devices, removing the need for employees to physically walk around buildings adjusting settings. These developments can lead to considerable operational and capital expenditure cost savings in just one building; the effect across a portfolio of assets will clearly be much greater. Depending on the technology deployed, the return on investment can be as little as six months, although it can be as high as eight years for some of the most advanced buildings. One estimate by Intel recently suggested that, with the deployment of IoT technology for heating, ventilation and air conditioning, lighting and some forms of electrical loads, energy costs could be reduced by between 10% and 25%.



Yet it's not just cost savings that can be gained through the use of these new technologies. One benefit is the collection of data that can be analyzed (see section on big data and analytics) to improve efficiency and tailor offerings to tenants. Another is that, if a building's environment is well-controlled and equipment is less subject to failure because maintenance is carried out efficiently, this also has the potential to increase tenant "stickiness" and positively affect occupancy rates, as well as improving the workplace environment, which may improve employee retention.

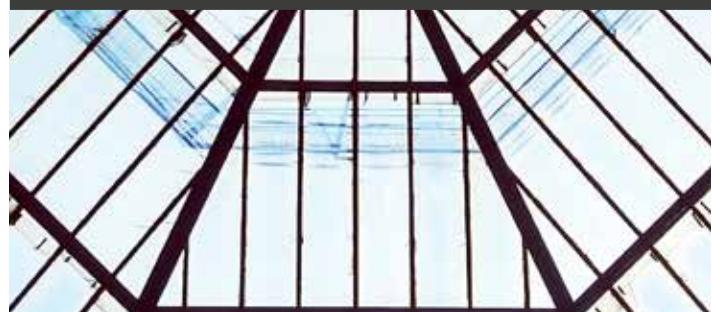
Further, with the environmental agenda gaining importance for a fund's constituents, such as some fund investors and tenants, the ability to demonstrate green credentials through energy-saving smart buildings can bring value to fund managers. The U.S. Department of Energy estimates that commercial buildings account for 36% of the energy consumed in the US, of which 30% is wasted. These new, smart technologies can reduce this waste, offering not just cost savings and a good story to tell investors and end-users, but also the opportunity to claim sustainability credits on tax bills.

Overall, it seems likely that the technology will develop further as urban planning initiatives place increasing emphasis on sustainability and efficiency. The experience of developing existing smart cities, such as those in Abu Dhabi (Masdar), South Korea (Songdo) and Japan (Fujisawa) is feeding into how new urban spaces are planned and designed. In the US, for example, Florida and Colorado are both experimenting with the smart city idea with the creation of Pena Station, a commercial hub, and Babcock Ranch, a "solar" community. In the not-too-distant future, developments such as these may well become the norm. Technology costs are reducing year over year and issues around energy scarcity and the environment are creeping up the agenda. Intelligent buildings look set to become an expectation rather than an innovation, with smart features integrated in the pre-construction phases.



Key considerations

- 1** Is it worth retrofitting existing buildings? While the ideal may be to build the technology into new buildings, retrofitting is not as challenging as you may think.
- 2** What are you hoping to gain through the use of smart technologies? ROI timing varies considerably, according to the type and initial cost of the technology chosen.
- 3** What might be the cybersecurity risks of installing smart systems (see section on cybersecurity)? How can you manage these, and what plans can you put in place to deal with a breach?
- 4** How can you plan for smart buildings in future deals or developments? If intelligent buildings become an expectation among tenants, what can you do to meet those expectations?
- 5** How might the data captured by smart buildings be captured and used by other stakeholders, such as retailers in malls or in mixed-use developments?



Robotics and artificial intelligence



Robotics and artificial intelligence may seem like science fiction, but they are here already. From driverless cars through to digital assistants, this technology is being adopted by a variety of different industries, including and especially financial services.

One of the drivers for adoption here was the increase in regulation following the financial crisis – while banks may have started out hiring new people to manage the processes involved in compliance, they soon discovered that the cost was unsustainably high. This led to many using robotic tools for repeatable, rules-based processes, a shift that is continuing to develop toward artificial intelligence. IBM, for example, recently acquired Promontory Financial in a bid to boost its Watson artificial intelligence system and create a new arm that will use the technology to advise financial institutions on risk and compliance.

From evolution to revolution?

In many ways, the developments in robotics and artificial intelligence are the natural evolution from technologies and processes applied to industries over the last 20 years, from enterprise resource planning, outsourcing and offshoring through to digital labor. All have been designed to reduce costs, increase accuracy and reduce the time needed for management of tasks to allow skilled laborers to concentrate on more strategic tasks. This next phase – sometimes termed “robotic process automation” – is no different. While robots have replaced manual labor in many industries, new technologies now allow processes to be automated – at a fraction of the cost of even offshored employees.



Many back-office functions can now be automated, from processes involving finance and IT through to human resources, including resume checking and sifting. And the fact is, automation doesn't require significant investment beyond acquiring the robotic tools themselves, because they can use existing interfaces and software. So, for example, in accounts payable, you can program a robot (which is itself simply a piece of software) to access a package such as SAP, check invoices that come in (including overnight – robots don't need rest like humans do), download all the information into Excel and set up the invoice for payment. Provided the tools are correctly programmed, this not only reduces cost, but it can also improve accuracy and help manage the risk of fraud (after all, robots can't collude to steal as people can).

This clearly has a significant impact both on fund managers that continue to run back-office operations and property management in-house and on outsourcing providers. If these tools can work 24 hours a day, 7 days a week for a fraction of the cost of employees, at a faster rate than people can work, while also reducing the need for ancillary employees (as a general rule, you only need one IT professional per 100 to 200 robots) and reducing the scope for error, the cost savings are significant.

More than cost reduction

Yet to gain maximum benefit from the technology, users need to consider other factors than cost reduction. These tools can transform the way a business is run and managed as long as the technology is embedded into processes, rather than simply layered

on top. This requires some strategic thought, looking at end-to-end processes rather than point solutions – the technology is best viewed in a programmatic light rather than as the solution to a single issue. The other point to bear in mind is that different tasks will require different automation tools – using one type of robot to try and execute a number of different tasks is far from optimal.

The effect on human resources is considerable. Companies no longer need staff with low-level skills, but can retrain them to work in areas that are of higher value and greater strategic significance, and they can free up those with more experience and higher-level qualifications to do what they were hired to do, rather than getting mired in process-driven tasks, which can take up to 30% of people's time. They will also need to manage the process effectively, so that staff are not fearful of the new technology, but embrace it as a new way of doing things. Management structures may need to change, with dual reporting systems: one that is business resourced and the other governed by IT. They need to think carefully about what future skills the business will need, as they will likely be quite different from those required today. And it's quite likely that qualifications will start looking very different in tomorrow's world. There may well be less need for so many people to spend four years gaining a degree and more need for specific skills-based training. Even elementary, middle and high school education will need to change to equip tomorrow's children for the new employment environment.

Get started

The fact is that this technology is here, and it is already being used by many industries. To remain competitive in such an environment, real estate fund managers cannot afford to ignore it. That doesn't mean they should dive headlong into investing large amounts in the latest artificial intelligence systems; what it does mean, though, is that fund managers need to get started by automating some processes and then reviewing the outcome before investing further: one of the benefits of automation is that it can be continuously improved and refined to meet business needs as they emerge or evolve. Automation is a trend that's here to stay, and the earlier fund managers can get comfortable with it, the more benefit they stand to gain by using the technology to change the way they run their business.

Cybersecurity

There is no doubt that cybersecurity has moved up the agenda among most real estate fund managers. Yet the simple fact is that few really understand the true nature of the threats they face. The financial services industry in general has stepped up to the mark, having recognized the risks of not only holding large amounts of electronic data (both personal and commercial) but also of the large IT networks organizations such as banks run to manage wire transfers, online banking, trading and credit card payments, for example. As a result, the sector as a whole has become the number-one innovator in cybersecurity management and development of technologies to reduce risks. Real estate fund managers, meanwhile, rank low on the maturity scores of taking steps to manage this issue.

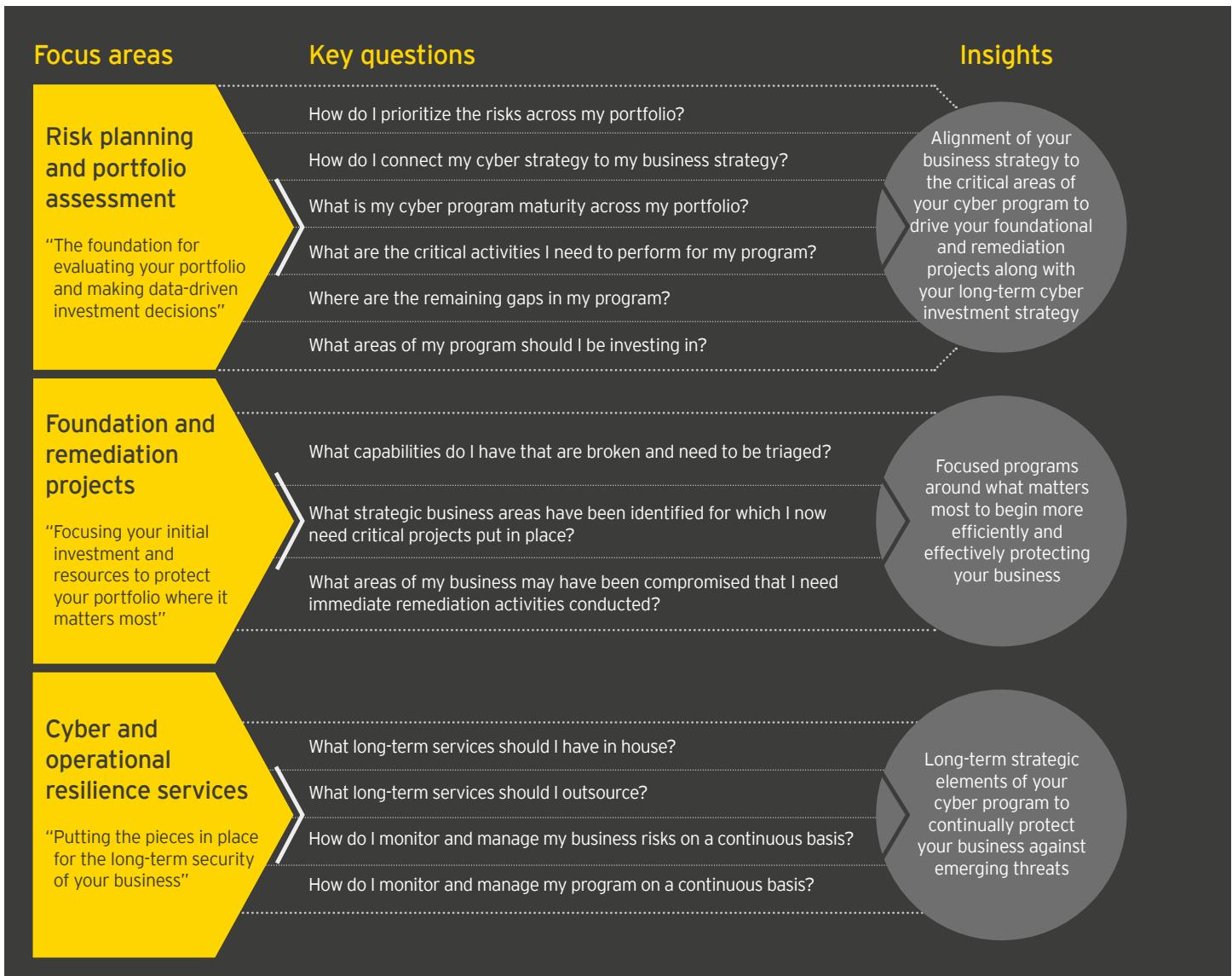
New technology, new risks

The adoption of new technologies, such as the ones we've outlined earlier in this section, clearly makes cybersecurity more of a pressing issue than ever. The collection and analysis of large volumes of data, the systems used to operate smart buildings and the move toward increasing automation of processes all present security challenges as information and controls are increasingly digitized, stored and managed electronically.

RE-specific threats

However, even without the use of these new technologies, there are risks real estate fund managers face that most have yet to recognize or identify. The threat goes well beyond the internal IT systems that fund managers control, containing information on LPs, employees, deals and other commercially sensitive data. Take building management systems, for example. Widely used to enable building managers, security services and tenants to control the building and its environment, they are usually disparate and are often patched onto the internet despite being initially designed to be operated separately from conventional IT networks. They tend to be operated by facilities managers or security guards, who will usually have little or no background in IT or networking.

All this means building management systems can fail basic security requirements and can therefore be vulnerable to attack. Not only could hackers gain control of the building and create havoc with HVAC, elevators, or security cameras, but these building management systems can provide them with a gateway to conventional IT networks.



This is not a theoretical risk. We know of instances where building management systems have been used to gain access to retailers' data, such as customer credit card information. And this kind of breach carries the risk of losing significant capital. There is clearly the cost of disruption to tenants, notifying affected businesses, the

loss of productivity while the issue is dealt with, plus remediation. Moreover, the increasing take-up of cybersecurity insurance among many businesses increases the risk of the building owner being sued by the insurance company if lapses in security are discovered during an investigation of how the breach took place.

Other risk areas

Building management systems – and how to manage the threat

As we've outlined, building management systems are a specific cybersecurity risk for real estate fund managers as owners of the assets that run them. However, there are some steps you can take to identify the threat and manage it.

- 1** Recognize that building management systems present a risk. Just because no breach has yet been identified doesn't mean one hasn't occurred.
- 2** Start the assessment process by identifying assets with the highest risk, such as those with building management systems installed after the mid-1990s.
- 3** Identify tenants with the highest risk of breach. Financial services and health care businesses are the most commonly targeted, so the buildings they occupy should be prioritized.
- 4** Assess your assets building by building, looking at how systems can be monitored comprehensively and in a centralized way.
- 5** Add on layers of security to reduce risk, including basic features such as firewalls and virtual private networks.
- 6** Add security checks on building management systems to the due diligence process when acquiring new assets. This should include investigations into whether breaches have already occurred, as well as a review of existing security software and procedures.

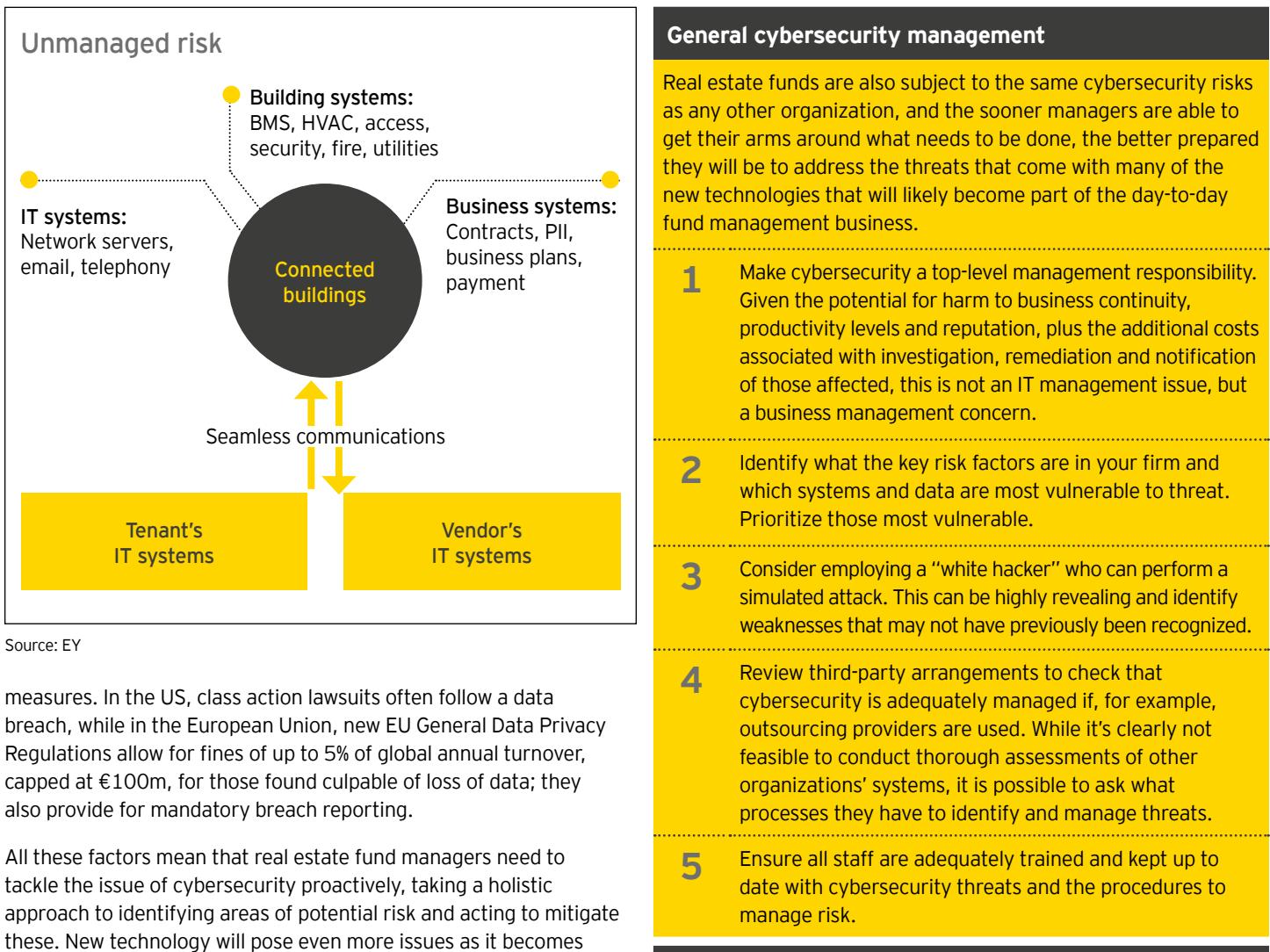
Part of the problem with managing cybersecurity effectively is that organizations need to deal with constantly evolving threats. While the old trick of coaxing staff to open links and attachments that then download malicious software has been well flagged, those seeking to gain access to systems are increasing the sophistication of their attempts. There are now many examples of companies that have fallen prey to highly legitimate-looking emails directly from the finance director or CEO asking for funds to be transferred. There is also the risk of losing portable devices, such as smartphones or laptops, which increasingly contain sensitive information that could be highly valuable to those with criminal or malicious intent. This type of vulnerability can be managed, however. A recent Symantec report found that of the 46% of laptops reported lost that contained confidential information, only 30% were encrypted and just 10% had other anti-theft technologies. Ensuring the correct procedures are in place and – importantly – followed by employees, backed up with sufficient staff training are some basic steps that can mitigate the risk of breach.

Failure to follow some of these more basic steps puts the business at risk. While it may be tempting to feel safe in the knowledge that real estate fund managers may not big targets for organized groups of hackers, the fact is that many are opportunists who will browse around systems looking for vulnerabilities and a lack of security.

And, as we've outlined already, the financial pain can be significant. A 2016 Ponemon Institute study into the consequences of data breach found that companies faced average costs of \$4m (although some can cost into the hundreds of millions), with lost business among the biggest contributors. However, it also found that factors such as encryption, employee training and early identification of breaches reduced the cost.

Regulations catching up

There is also regulatory risk associated with poor cybersecurity. Many countries are adopting statutory requirements for remediation if data protection is deemed inadequate. This varies according to jurisdiction, but the move is in one direction – toward increased costs for those failing to put in place adequate security



Source: EY

measures. In the US, class action lawsuits often follow a data breach, while in the European Union, new EU General Data Privacy Regulations allow for fines of up to 5% of global annual turnover, capped at €100m, for those found culpable of loss of data; they also provide for mandatory breach reporting.

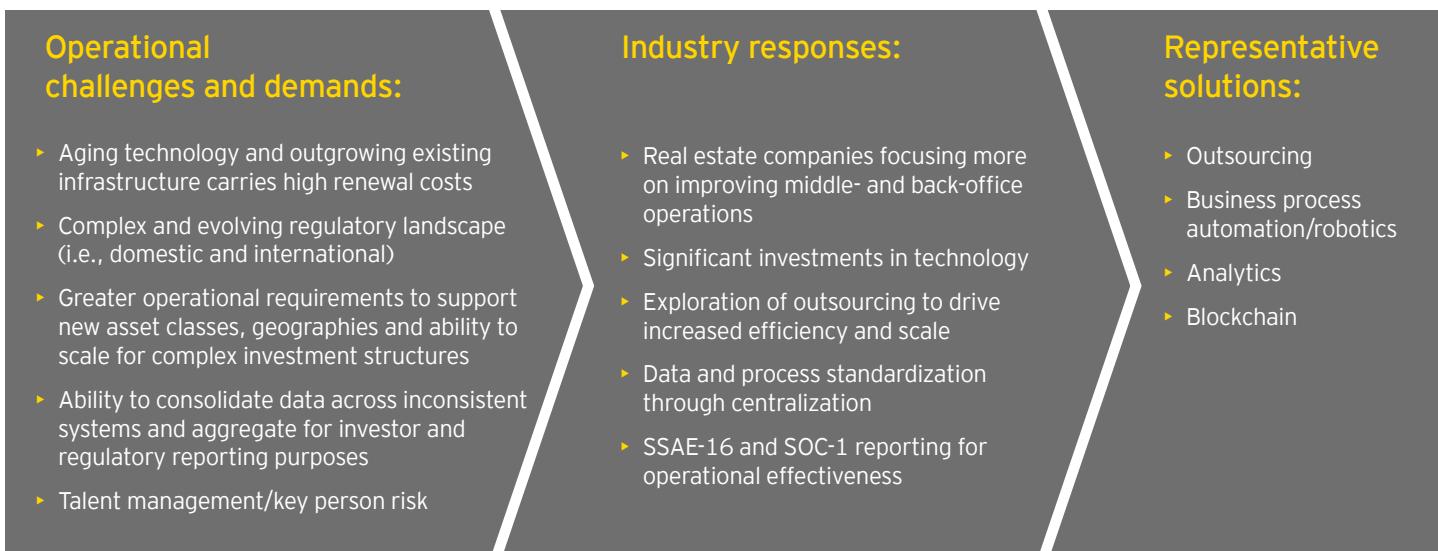
All these factors mean that real estate fund managers need to tackle the issue of cybersecurity proactively, taking a holistic approach to identifying areas of potential risk and acting to mitigate these. New technology will pose even more issues as it becomes increasingly adopted, but firms must first tackle the threats they face currently, putting in place the right security measures and procedures that they can then build on as systems become more sophisticated, integrated and complex.

Operational enablement: the tools of today and tomorrow

There is no doubt that the real estate fund management space has become increasingly complex over the last few years.

Once, managers may have pursued a given strategy, raised a series of funds over time to target those opportunities and provided regular reports to fund investors. Now, all but the smallest firms follow a variety of strategies and invest from a number of funds across increasingly diverse geographies. Most have to manage side vehicles, separately managed accounts and co-investments. And all have to deal with ever-more-demanding information requests from investors, who need granular data more quickly. In this environment, firms face more complicated operational challenges than ever. That's even before taking into consideration the increased transparency and reporting now required under new regulations and tax regimes.

This level of complexity, plus the increasingly competitive nature of the real estate investment market, means that funds need to find ways of operating efficiently and cost-effectively. Over the last several years, that has led to a trend toward the creation of shared service centers for back and, to some extent, middle office operations or toward outsourcing many of the transaction-based activities inherent in fund management entirely to specialist third parties.



Outsourcing and shared services

The last few years have seen many real estate fund managers outsource much of their transactional work to enable them to focus on the core areas of identifying opportunities for investment, completing deals, identifying areas for adding value and, ultimately, finding good sources of exit. From a standing start a decade ago, an increasing number of private equity and real estate fund managers now outsource at least some of their operations.

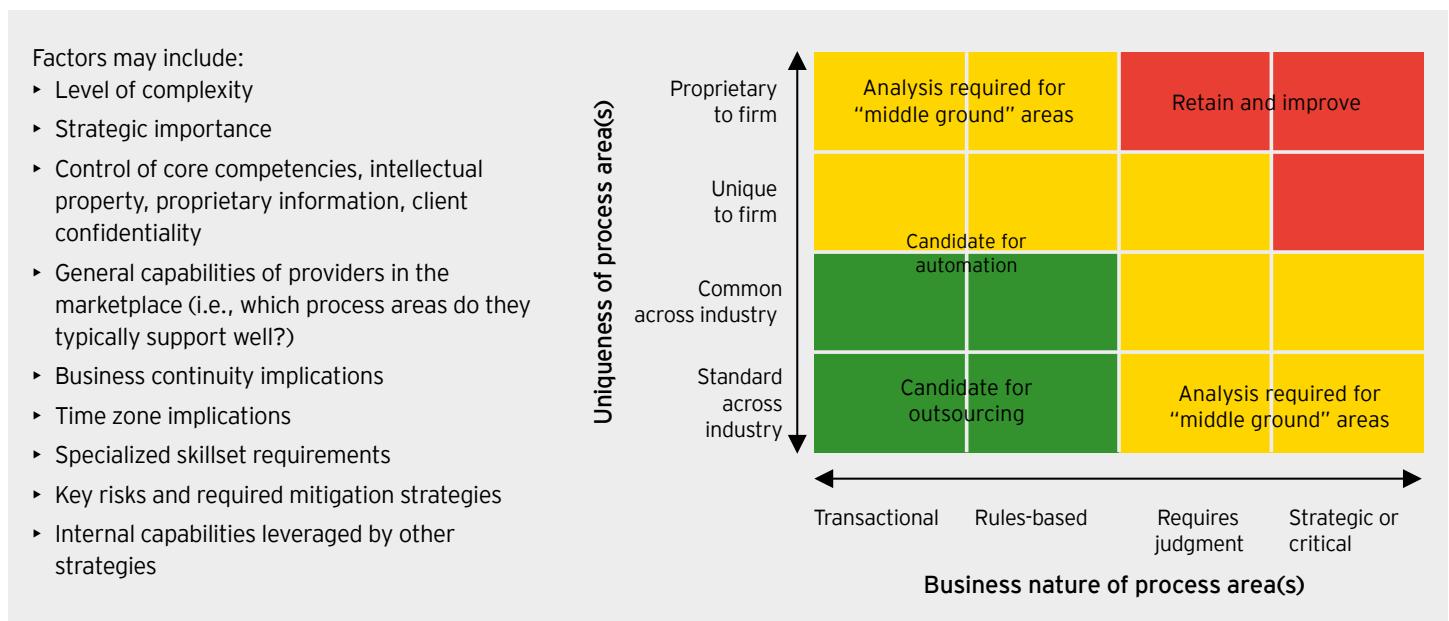
As we've noted, this has been driven by increased complexity in, and number of, the products real estate fund managers offer as well as increased regulation in the real estate fund management space. These developments have emerged alongside technological advances that have enabled a more bespoke and cost-effective approach to managing back office functions. Much of the growth in outsourcing and creation of shared service centers has so far been led by the larger players, although mid-market funds are now, too, considering outsourcing accounting, reporting and valuation functions.

Global providers on the rise

For their part, outsourcers are exploring the development of software packages for the real estate industry (and many are watching developments in process automation with keen interest – see the previous section on robotics and artificial intelligence). They are also increasingly global in nature, as the last few years have seen significant consolidation in, for example, the fund administration space. This allows funds to operate on a more global footing both in terms of investments and attracting funding from investors worldwide. When launching a suite of new funds, for example, a manager can opt to outsource the back office to an external party rather than having to take the time and considerable effort to recruit a team of new employees.

The benefits for funds can be considerable, both in terms of efficiency and ability to focus on core operations, providing the ability to scale the business more quickly and simplify the way the firm is run. It can also offer cost benefits. The pooling of specialist functions either in a shared service centers or by using those of an outsourcing provider has the potential to reduce employee and management costs, while providing a more focused and reliable service for the fund and its investors. Many outsourcing specialists also now use lower-cost centres for some of the lower skilled and highly replicable tasks, with the cost savings passed on to their customers. In addition, the move toward outsourcing has addressed some concerns around independence of information and should help reduce errors in reporting.

Firms will need to identify a strategic direction (e.g., outsource, insource, shared services, automate) at the real estate enterprise level for in-scope operating models. Based on the outcome to this decision, each process should be assessed to identify its capability to be outsourced or further automated.



Source: EY

A need to simplify

Nevertheless, some of the earlier adopters are moving toward a more strategic outsourcing model. A number of larger managers, particularly those that offer a variety of different alternative asset investment options to investors and those that have acquired new business lines, are currently undergoing this process – many have found that managing a number of different outsourcing providers for various products has become too cumbersome. With more large, global providers developing, their ability to consolidate outsourcing with one or two providers has improved.

This last point highlights the need for fund managers to take a holistic, long-term approach to managing their business operations. Any moves toward outsourcing or building shared services will need to be led by senior management, taking into consideration the future direction of the firm, if the full, transformative benefits are to be reaped. While cost, for example, may be one potential benefit, a focus on cost is unlikely to deliver the operational enhancement many firms may be seeking.

In addition, what works for one group may not be the right solution for another, given the different perspectives and agendas inherent in different real estate fund managers. Identification of services to be outsourced and detailed planning of how these should be separated from the business as well as the effect on existing employees are essential. Potential risks also need to be identified well ahead of any separation.

Another key consideration is the perspective of investors – some, for example, welcome the independent verification a third party can bring to reporting; others may view the use of an outsourcing provider as an extra layer between them and the fund manager and therefore see the development as less positive.

While outsourcing can help solve a number of headaches for real estate fund managers, a lack of proper planning and oversight following the transfer carries the risk of creating even more headaches if the process is not managed effectively.

Steps to outsourcing

Effective outsourcing requires careful planning and systematic analysis. These are the main steps that need to be taken.

- 1** Look at your business plan. Where do you want to be in 2020 and beyond? How do you need to build your platform to service these plans?
- 2** Is outsourcing the right path, or should you create a shared service center? How might developments in technology, such as process automation and robotics, affect the attractiveness of outsourcing over the longer term?
- 3** What is the right scope for your outsourcing? Where is the boundary between what your organization does best and what is more optimally provided by an external provider? What effect will this have on your people? Where should the people servicing your firm be located, taking into consideration the regulatory and tax environment?
- 4** What data do you need to collect and for whom (including regulators and investors)? Who owns the data? Can a third party manage the data?
- 5** What are the governance considerations? How will the outsourced services be managed? How will their performance be measured and how regularly?



Global capital transformation

It's clear that investors continue to see value in real estate investing. In a quest for yield, capital from institutions is flowing away from more traditional investments such as fixed income and toward property assets. And, while fundraising by private equity real estate groups trended downwards through 2016, the dry powder held by these funds had reached record levels of US\$238b by June 2016, according to Preqin data.



Yet deal volumes globally are down on previous years as a lack of product in the market has prevented the deployment of much of this capital. While the different markets are at different stages of the cycle, there is high competition for the assets that do come up for sale on a global level. While this has had the effect of pushing up real estate valuations in most markets worldwide, a gap in price expectations between buyers and sellers is either putting a brake on transactions getting completed or leading to investors seeking alternative places to deploy their money.

Here, we take a look at some of the forces at play in some of the world's key markets.

US – caution is the watchword

The fall in real estate deal activity in the US demonstrates the caution with which investors are approaching the market. While the early part of 2016 saw the sharpest falls (Q1 2016 was down 17% on the same period in 2015, according to RCA), the decline

moderated through the year as the presidential election campaigns entered full swing, market participants became more comfortable with the prospect of future interest rate rises and foreign capital looked to the US as a safe haven following the UK's vote to leave the European Union. By Q3 2016, commercial property sales volume was down just 2% from the same quarter year over year Q3 2015, RCA figures show.

While there remains high appetite for US assets, investors are proceeding with prudence and discipline in mind; there is a strong sentiment that the US has reached a high water mark, particularly as far as the major cities are concerned. As a result, fund activity looks set to continue to center around B and C locations where they see greater opportunity to generate expected returns. The Southeast, for example, continues to see population growth, with some companies setting up headquarters in lower cost locations such as Atlanta, Miami and Charlotte. Development and redevelopment activity in office, retail and hotels remains steady, providing opportunities for investors well plugged into these areas

or for those seeking joint ventures. Other secondary cities of Seattle and Dallas also remain on the radar for some managers.

Over the longer term, the US will remain an attractive destination for real estate capital as the trend for re-urbanization continues. At 1.3 times the size of the baby boomers, millennials are the biggest generation seen in the US, and they are seeking a better work-life balance by living closer to their work spaces, while empty nesters trade down to smaller units in or close to city centers. Multifamily and office therefore remain attractive spaces for many investors in the US.

Malls, however, are facing greater difficulty as customers continue to migrate online – between 2009 and 2016, e-commerce doubled its share of the retail pie, according to Commerce Department data. Announcements by some of the bellwether retailers such as Sears, JC Penney and Macy's of store closures reflect the tough trading conditions many face in bricks and mortar sales. As a result, interest in redeveloping malls to become entertainment dining and retail destinations will remain high, with investment in redeveloping viable sites set to continue over the medium to long term. That said, there will be distress in this sector, with losses on CMBS loans continuing to show through and a prediction by Green Street Advisors of up to 800 department store closures – or a fifth of all anchor space in US malls – over the next few years.

As the shift to online shopping continues, however, logistics assets remain in demand from investors, particularly as the development of hubs closer to urban centers picks up to service customers seeking same-day or next-day delivery times.

And while some larger institutional investors continue to build out in-house real estate capabilities in the US, demand for fund manager expertise in the asset class remains high, particularly as North America is seen by global investors such as pension funds as the most attractive area for investments (63% of public pension funds worldwide ranked North America as one of their preferred real estate locations, according to Preqin figures, higher than any other region). Niche players with strong track records look set to continue to raise funds successfully, but the door for new managers is opening, albeit slightly, as certain LPs add new managers to their rosters.

Canada – continued appetite among investors

The outlook for Canada is broadly positive should the low interest rate environment continue. The market is currently mixed, with Vancouver and Toronto driving deal activity levels and pricing – these cities are exhibiting a shortage of real estate supply in the face of high demand from both fund managers and, increasingly, institutional investors seeking to invest directly. Driven by a low interest rate environment, many Canadian pension funds are now actively looking to develop rental apartments in key cities to generate yield and a source of good, risk-adjusted returns.

High levels of competition in these key locations is therefore driving fund managers to look at some of the other, smaller cities in Canada. Ottawa, for example, is attracting some interest, given its stability drawn from its status as the nation's administrative center, while in Alberta, opportunities are coming online from companies divesting non-core real estate through sale and leaseback arrangements. Yet in Calgary, an increase in office supply is creating a more difficult environment for sellers. While an appetite for Calgary office is emerging on the buy-side, this is exclusively for office buildings with long-term leases. We are seeing signs of a gap in pricing expectations between buyers and sellers, who have yet to adjust to a market that is seeing a 20% vacancy rate in office property. We expect more deal activity to flow through in Calgary over the coming year, however, as owners with poor occupancy rates start to feel the strain and bring assets to the market at a discount.

Demand will continue to be high from buyers as Canada's institutional investors increasingly acquire or develop internal real estate investment platforms. One of its largest investors recently announced the creation of a real assets division, bringing together its real estate, agriculture and infrastructure investments and BCIMC internalized their real estate platform this year. Having long invested in real estate funds, many of these investors are now developing their own capabilities to invest directly. Many are also increasingly seeking joint ventures with other institutions or with fund managers to share risk. And while consolidation in the real estate fund industry has not yet been significant, this is set to change over the coming years as many managers find fundraising more challenging as investors seek to go it alone. This is leading some to adopt more specialist strategies, such as consolidating medical office buildings in a single portfolio, in a bid to differentiate themselves and create value for investors.

Investors will be watching interest rates closely, however, as upward movements may well cause the cycle to turn in many of the cities where there has been high demand and high pricing. Meanwhile, as the nation's pension funds continue to seek out real estate investments, many will increasingly look beyond domestic markets for opportunities, where supply may be greater than in Canada, competition lower and growth prospects higher.

Brazil – improving fundamentals

With Brazil's political situation on a more stable footing as Michel Temer has taken the reins from his impeached predecessor Dilma Rousseff, confidence is now improving in the economy after a difficult few years. The government revised its GDP growth forecasts in August for 2017, up from 1.2% to 1.6% – a marked improvement on several years of negative numbers and, indeed, on forecasts for 2016, which suggested the economy would shrink by over 3%.

This renewed optimism looks set to feed through to Brazil's real estate market over the next 12-18 months. The last year has seen low levels of activity in the country, with just \$2.2b of commercial real estate deals completed in the 12 months to June 2016, according to RCA figures, significantly down on the peak year of 2011, when \$11.7b of deals were struck.

The few deals that have been agreed over the last year have largely involved vacant office buildings acquired from developers,

with some vacant residential assets that developers have been unable to sell as individual units. These opportunistic acquisitions have been secured at a discount where developers have been under stress. Debt-based deals have also played into the market, where refinancings have resulted in longer repayment schedules, higher interest rates and more guarantees for borrowers. Yet the Brazilian market's aversion among sellers to sell at discounts and a preference to hold where possible has meant that few deals have come to market, and where they have, they are often characterized by earn-out-type arrangements or equity kickers (in the case of debt funds), leaving the door open for developers to earn some upside should the market pick up.

With an improving economic outlook, many in the market believe that the Brazilian real estate market is at, or approaching, the bottom of the cycle. We expect deal volume to pick up over 2017 should valuations start to tick up, with the window for opportunistic, distress-driven deals closing by 2018. While many of the larger real estate investors already have a strong foothold in the market, there are signs that others may join them. And while many of the country's domestic institutional investors may have their hands tied, overseas institutions are taking an active interest in completing direct real estate deals, with the Canadian investors leading the way.



Another contributor to a market pick-up will be the trend for companies to trade up premises as we see a flight to quality in office leasing. With strong competition in leasing, many are finding they can rent AAA space at prices that are comparable to, or even cheaper than, their older building rates. As vacant spaces are filled, valuations look set to rise, prompting developers to place more real estate in play in the market.

And finally, further out, we may see some benefit from the Olympics held in Rio in 2016. While this had little immediate impact on the real estate market in the city, investment to improve infrastructure and the revitalization of some districts will start to feed through over the coming years.

Southeast Asia – activity increase further out

The Southeast Asian real estate market looks set for increased activity over the latter half of 2017, as clarity around US interest rate rises emerges. The market has been clouded in uncertainty for much of 2016 as concerns around currency movements in response to any Federal Reserve decisions on interest rates has damped deal volumes. However, there were reasons for optimism in mid-2016 as the Qatar Investment Authority acquired Singapore's Asia Square Tower 1 from Blackrock in a deal worth US\$2.5b – the transaction offered some confidence that foreign investors continued to see the region as an attractive area for investment, especially as competition was strong for the asset.

Nevertheless, the recent interest rate increase and any further movement by the Fed may well expose some of the weaker players in the market, given that much of the leverage present in the market is denominated in US dollars. Developers that are focused on mid- to high-end residential projects are facing challenges to recycle capital due to the decline in demand, and higher interest rates may well force a number of these to consider M&A or recapitalizations. There is no shortage of buyers: dry powder remains high in the region – since 2014, approximately US\$27.7b (Preqin Online Sept 2016) has been raised by 71 Asia-focused closed end private real estate, with local institutional investors, fund managers and overseas investors seeking yield, yet few assets up for sale, particularly the trophy assets many of these investors seek. Should the developers start divesting or recapitalizing, this may well start to unlock the deal pipeline, although there remains a question mark over how large the value gap will be between acquirers and vendors, given where the market is with the property cycle. Sellers'

price expectations have been high over the past few years, but the recent geopolitical development in the US and Federal Reserve commitment to raise rates, developers based in emerging market economies will have to decide on whether their balance sheet can withstand both soft market demand and increasing interest rates.

We expect further consolidation or M&A activities in the REIT sector and, to some extent, the fund market over the coming year as growth becomes more of a challenge and yields harder to sustain – many players will need to expand into other areas (geographically or take greater development risks) to generate the returns they require. REIT structures has been a positive capital recycling strategy for a number of developers in Singapore, Malaysia and Thailand.

Australia – reaching the top

One of the big trends in the Australian market is the move by institutional investors to co-invest directly alongside fund managers in an effort to prevent fee leakage and gain more transparency and control over opportunities. This is being led by the sophisticated, large superannuation funds, many of which have been investing in real estate for a considerable time. Some of the largest have achieved this by increasing their internal capabilities in this area as they focus on real assets – real estate and infrastructure.

Yet when it comes to sourcing deals domestically, they face stiff competition. Asian investors, from mainland China in particular, but also Hong Kong, Singapore and Malaysia, are being joined by German investors and UK funds, with a particular focus on core, core-plus, retail and commercial assets. And, given that their cost of capital is somewhat lower than that for domestic investors, foreign capital is often willing to take lower yields than many of the homegrown real estate groups. Indeed, the dry powder in the system is reducing yields to below 5% for prime properties, a level that is almost unprecedented in the Australian market. As a result, we expect deals during 2017 to continue to go to foreign investors, while domestic investors sit tight and seek opportunities elsewhere.

And while it looks as though the top of the cycle is not far off in terms of commercial and retail core and core-plus opportunities, development is facing greater difficulties, particularly in the residential space in Sydney, Melbourne and Brisbane (although Perth lags behind in all categories). One of the issues is a lack of senior bank finance for developments, even for those in the low-risk classifications, which is increasing the cost of capital –

pricing has risen from around 4% to as much as 6%. As a result, developers are looking overseas for debt, with Singapore a favored destination. While this may flow through to the market for mature assets, we expect to see a two-speed real estate market for much of 2017, with development continuing to face funding issues, but no slowdown for commercial and high-quality retail assets.

UK – uncertainty prevails, but liquidity remains

The UK's vote to leave the European Union has, to some extent, de-coupled the UK's real estate market from the rest of Europe. Activity levels dropped considerably in the run-up to the referendum as uncertainty around the outcome prevailed. Yet while there was some initial shock following the result (with the suspension of redemptions of publicly listed UK funds demonstrating this clearly), the true Brexit effect on real estate has yet to be felt. While the UK's share of European investment in real estate fell from a long-term average of just below 30%, according to RCA data, to below 25% for the year to the end of Q3 2016, the market remains highly priced in key cities, supported by a loose monetary policy environment and a devalued sterling: foreign investors, while more cautious than in 2015, remain interested in the UK market.

With prices and competition remaining high, the large number of funds with capital to deploy are taking a pause to assess whether they ought to be moving further up the risk curve or look elsewhere for opportunities. We are seeing some look to the Netherlands, Germany and Spain, for example, where the markets are less subject to uncertainty.

Over the coming year, we expect downward pressures to be felt in the UK market, with the referendum result having brought the top of the market forward by around six to nine months. Those in the market should expect a period of volatility, given the lack of visibility over the country's future direction of travel and negotiating ability with its EU partners, but we are not anticipating a sharp downturn. Demand for real estate from tenants will depend on how business confidence shifts over the coming months, but also on how government policy evolves around overseas workers. And while there may be overtures from some European finance centers to attract UK businesses, if these moves are successful there will be a lag as any departures will take several years to complete.

In the meantime, liquidity looks set to remain high for the medium-term at least, suggesting that when deals come on the market,

there will be demand, especially if values start to soften. However, it is difficult to predict any major trigger for sales, with sellers unlikely to want to crystallize losses. We expect the bid-ask spread to remain wide for some time.

Germany – Europe's safe haven?

In many ways, investors are viewing Germany as Europe's safe haven. We've seen a large weight of capital chasing a scant number of deals in the market for some time, and there is little prospect of this changing any time soon. In the months following the UK's vote to leave the European Union, uncertainty around the future direction of the real estate market in London and the UK's other key cities has led many investors to switch their focus toward Germany, where economic growth remains solid and the demand for housing as a result of strong migration to the country is boosting the residential market. The number of residential building permits are up by 30% in 2016, compared with 2015, according to figures from the OECD.

Asset owners remain reluctant to sell, given the low interest rate environment and need for yield, plus strongly differing views about where the market is in the real estate cycle – few wish to crystallize gains only to find prices continuing to increase over the months ahead.

Shortages of assets on the market in the core light industrial, retail and residential sectors over the last 12-18 months have already led investors to seek out B locations, increasing prices and compressing yields, with many moving further along the risk spectrum. 2017 may see investors scoping out assets in C locations. Opportunistic appetite also remains high for distressed assets and NPLs, yet little is coming up for sale. The few large deals that have made it to the market over the last two years have attracted considerable interest from the private equity real estate funds.

With little supply, some unusual features are emerging in Germany. Many investors are actively seeking out development pipeline opportunities – an area considered too risky just two to three years ago.

In such a competitive market, where pricing is high and yields low, investors need to move intelligently. This is in contrast to the top of the last cycle in 2004-2007, where speed was of the essence. Today's market is characterized by investors attempting to get in early, be part of the process and seek exclusivity on deals, followed by rigorous due diligence, as opposed to moving quickly.

The last two years have also seen the rise of mezzanine funds in Germany, and we expect the numbers of these to increase. This is partly driven by Basel III/IV and Solvency II regulations, where capital requirements on equity positions are driving investors more toward debt-type funds and structures, but also by the increased risk being taken by funds in their quest for opportunities – while banks are lending into deals with lower risk, with LTVs increasing up to 85% for residential and 75% for office/commercial, the higher risk opportunities face difficulties in raising senior debt, leading investors and developers to seek out more expensive, non-recourse finance options.

Meanwhile, consolidation looks set to continue. While some M&A among residential public companies has been attempted, only one large deal has so far reached completion over the last two years. We expect some movement in this area, plus more consolidation in the commercial office sector, where there are 10 public companies, in the next 18-24 months. The asset management space, where there are a number of smaller and less well-managed platforms, as well as established platforms looking to exit with scalability potential, will continue to see further activity as appetite among larger players remains high.

Netherlands – cycle has some way to go

If Germany is heading toward the top of the cycle, the Netherlands is a little behind. The last two years have seen demand pick up as foreign investors have entered the market – from Korea, China and other Asian countries, the US, the UK and Germany. Where domestic investors, such as the large local pension funds, used to dominate the Dutch market, now foreign investors account for around 55-60% (year 2015, source CBRE) of real estate capital being invested. Given the worldwide search for yield among investors, we expect this to increase over the next two years, with many overseas buyers seeking to partner with local investors to acquire or – more likely – to develop, especially in the residential space.

This high demand has led to a feature familiar in most other markets – a shortage of property and yields are now starting to compress across key cities such as Amsterdam and Utrecht. Spreads between these opportunities and those that are less well-located and where there is little demand have widened considerably. While appetite for residential is high, there remains a large stock



of office space constructed pre-crisis in out-of-city locations where vacancy rates are high and demand among investors is low. This issue has still to be worked through, although some value-add investors are cherry-picking some of these developments for conversion to residential as demand in this segment is high and the potential for increased returns is good.

Retail remains a tough market for those operating in the space as sales continue to migrate online, but there remains high demand for assets that are well-located (A1 locations) in key cities. We expect this to pick up further as some foreign retailers, in particular from North America, have entered the market and as online retailers add bricks and mortar channels to their offering.

Yet one of the hottest real estate areas in the Netherlands remains in logistics. As an important European hub for many of the online retailers, manufacturers and producers, we are seeing the development of larger centers, in particular closer to city centers as customers increasingly expect faster delivery times. Demand among investors for this segment is high, but access low as owners are looking to hold these assets rather than sell.

The upcoming elections in the Netherlands will be watched closely by investors, given the prospect of a fragmented outcome, although few expect the results to slow the market considerably.

Dealing with market shocks: the valuations question

If there is anything the past decade has taught us, it must be that volatility is now a long-term feature of our markets. From the effects of the financial crisis that rippled across the globe through to last summer's stock market falls in China, the oil price drop seen over the last 18-24 months and the surprise outcome of the UK's European Union referendum, the economic shocks have come thick and fast over the last few years.



And while this lack of predictability in global and local events can make generating good, consistent returns something of a challenge, it clearly plays havoc with attempts to report accurately to investors around the valuations of illiquid assets and portfolios. This is particularly so when the disruption occurs just before quarter-end – as was the case with Brexit – when it is evident that an event will affect valuations to some degree, but the hard evidence has yet to emerge.

In some instances, where the shock occurs right up against the end of the quarter, the course of action can only reasonably be to disclose in a statement in the accounts that the event has happened but that it is too early to understand what the impact will be on asset values. However, following the UK referendum result, a number of UK-focused funds imposed fair value adjustments to reflect likely drops in the value of their assets.

Given a little more time, however, gathering market intelligence can help provide a more accurate analysis of how much an asset is worth to make valuation more scientific and less of an art form. Clearly, the most helpful data source on which to base valuations is transaction information on similar assets, but in the absence of trades, there are other indicators to turn to. One is a survey of investors to gather their perceptions on the market following the shock (given that their level of confidence or otherwise in a given

area would ultimately determine the value of an asset if it were to be sold). This should be conducted to bring in the views of a broad range of investors to guard against false optimism among those who are invested in the real estate assets affected by the shock in question. Following the oil price decline, for example, local investors in oil-producing Houston remained engaged in the market there, believing the drop was temporary, while those outside the market assumed it was more long-term and were therefore more sanguine and cautious about the market's prospects.

Another is to take the pulse of existing tenants. Falling occupancy rates clearly provide hard evidence of a decline in asset value, but the issue here is that there is often a lag between the disruption happening and any decision to cut staff numbers or vacate the premises. In this instance, tenants' relative optimism or pessimism about future business gauged through conversations and surveys can offer some indication as to their future course of action.

While there is no perfect answer to providing accurate valuations at a time of market dislocation, fund managers do need to offer some evidence for how they have arrived at their numbers, particularly when there are no recent transactions to which they can refer – and the perceptions of both investors and tenants can provide useful information on which to base the judgment.

Sustainability agenda on the rise

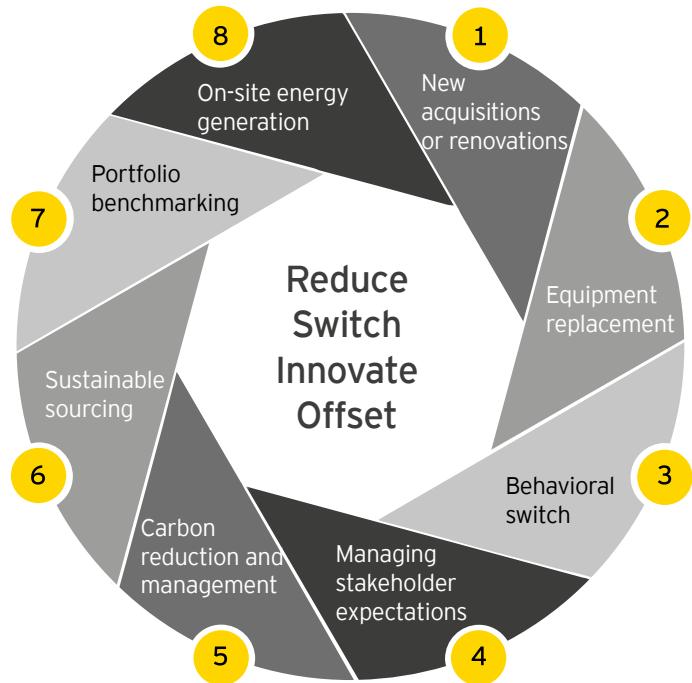
Where once the issue of managing sustainability may have been viewed as a “nice to have” for real estate funds, today’s business and investment world is increasingly viewing responsible investing and environmental, social and governance (ESG) matters as essential to good practice and risk management.



A recent EY study of more than 200 institutional investors¹ demonstrates this clearly. Nearly two-thirds of respondents (61.5%) now consider non-financial data relevant to all sectors, a significant rise from 2014, when just 33.7% said this. More than a third (37%) also said they used a structured methodical evaluation of ESG impact information, up from 19.6% in 2014, and nearly 60% said they considered corporate social responsibility (CSR) or sustainability reports essential or important when making investment decisions. And finally, 80% now believe mandatory board oversight of non-financial reporting essential or important, up from 63.8% in 2014.

The shift is clearly significant and critical to fund managers seeking to raise capital from investors. The good news is that, first, there is much that real estate funds can do to meet investor demand for sustainable investing and reporting, and second, that this focus on sustainability provides new opportunities for investments and driving returns.

Triggers for sustainability incentives



Source: EY

¹ Tomorrow's Investment Rules 2.0, EY.

Reporting frameworks

The real estate industry has not been slow to respond to investor concerns or the opportunities presented by the shift – as the establishment and growth of GRESB, the industry organization that assesses ESG performance, shows. It now has more than 200 members, and its latest data demonstrates improving scores across a range of ESG measures in the real estate industry. On environmental measures, for example, those reporting to GRESB show a reduction in energy use of 1.2%, in carbon emissions 2.0%, water use 1.9% and waste 1.97%. At the same time, renewable energy (generated onsite) now accounts for 0.6% of energy consumption and members in North America, Europe and Asia all reported improvements in stakeholder engagement scores (which encompass employees, tenants, supply chains and communities).

Yet the GRESB benchmarking tool is just one way in which funds can address sustainability reporting to investors. Sustainability accounting standards, established by SASB, provide industry-specific guidance on how to report non-financial data, contained in the Asset Management and Custody Activities research brief, published in February 2014.



Risk management

As a starting point, managing sustainability issues is about identifying and managing risk. Reputational risk is one of the key items here, as an environmental, governance or social issue that is poorly managed can have direct consequences for a firm's ability to remain in business. Conversely, those able to point to certification and strong reporting on sustainability can gain a competitive advantage as they become known for owning premium, high-quality assets that are sought-after by tenants.

Yet there are a number of other strands to this. More than two fifths of respondents (42.1%) to our investor survey on sustainability said they believed companies are motivated to report non-financial information to demonstrate management of risk (up from 29% a year earlier). And one of the principal risks investors identified as a concern was stranded assets, mentioned by 62.4%. In real estate terms, this would translate into buildings and developments that are at risk from, for example, climate change and environmental degradation that might cause population shifts or migration. Imagine a setting where buildings are located in a dry area (think Las Vegas or Reno, for example) and water supplies become affected by long-term drought. The value of assets held in this area would necessarily drop as populations were forced to move away. Areas at risk of floods are the opposite side of the same coin.

Opportunities on the ground

Clearly, the ability to attract investor capital by measuring and reporting on impact and risk is just one side of the equation. The rise of the sustainability agenda also presents some significant opportunities to drive improvements in returns for real estate funds.

As we've noted in the section (see page 5), developments in technology are enabling asset owners to improve energy efficiency and therefore reduce carbon footprint. This leads to lower costs of operation, which can have a positive impact on returns, provided the return on investment in such technologies can be recouped in a suitable time frame. There are a number of studies that attempt to assess ROI levels on this type of technology. One of these is Green Alpha, developed by Impax Asset Management in conjunction with JLL, which attempts to measure excess returns generated through sustainability in real estate. It provides a tool for understanding the potential return on investment of sustainable buildings or retrofitting energy efficiency features in an existing building. By

its estimates, based on sustainability-led core plus assets it has assessed, 10% to 15% of total unlevered differential return is attributable to "green alpha."

While the cost of investment in such technologies varies (and is reducing over time), real estate investors need to take account of increasing regulation around new developments and existing assets. In the EU, for example, new standards apply to new developments under the Energy Performance of Buildings Directive and the Energy Efficiency Directive, which state that all new buildings must be nearly zero energy buildings by the end of 2020 (with public buildings meeting this standard by the end of 2018).

The European Commission estimates that buildings are responsible for 40% of energy consumption and 36% of carbon dioxide emissions in the EU. New buildings need less than five liters of heating oil per square meter per year, while older buildings often require between 25 liters and 60 liters. Retrofitting energy efficiency technology can therefore result in some significant gains, especially given that around 35% of buildings in the EU are more than 50 years old.

And while new regulation in various markets is providing a stick approach to ensuring greater energy efficiency, what is often overlooked is the fact that there can be financial incentives for those seeking to make improvements, such as tax reductions under the Energy Policy Act of 2005 in the US and investment tax credits for solar and wind developments. Real estate firms that understand what is on offer in the markets in which they operate can integrate improved sustainability into their overall strategy.

The benefits of well-being

The environmental and operating cost benefits of investing in sustainable practices and buildings are therefore well-documented. However, there are other possible benefits on the social side that can play into return enhancement. Leadership in Energy and Environmental Design (LEED), the green building certification program, suggests that LEED-certified buildings can improve occupancy rates by up to 20% compared to average.

Part of this is due to the increased productivity in buildings where the work environment is considered to be superior to others – LEED suggests that if current trends persist, 21 million workers will be housed in LEED-certified commercial real estate by 2030, with a productivity increase worth \$90b. A study² showed, for example, that building retrofits that improved the indoor environment of a building resulted in healthier and more productive people through reductions in communicable respiratory diseases (9%-20% reduction) allergies and asthma (18%-25%) and non-specific health and discomfort effects (20%-50%).

Sustainability is clearly going to stay on the agenda for both investors in funds and tenants. This makes it a pressing issue for real estate fund managers, which need to manage and report non-financial information. Yet it is also an opportunity for identifying new investment strategies and ways of enhancing returns.

Sustainability questions for real estate funds

There are a number of different strands to managing sustainability issues. These questions can help direct your fund to some of the areas to consider.

- 1** How are you responding to growing investors and stakeholder information requests on sustainability drivers?
- 2** Are you currently benchmarking against your peers (i.e., GRESB)?
- 3** Do you have a sustainability report? Are you considering assurance of KPIs?
- 4** How are you monitoring key industry regulatory/policy issues?
- 5** Do you have a strategy to respond to the emerging regulations on energy use and transparency?
- 5** Are you measuring energy use of tenants?
- 6** Are you considering on-site power generation?

² Health and Productivity Gains from Better Indoor Environments and their Relationship with Building Energy Efficiency, William. J Fisk, Lawrence Berkeley National Laboratory.

Open for business

The last several years have seen a steady increase in the number of open-ended real estate funds being launched globally. In 2015, there were nearly 450 open-ended funds worldwide, compared with fewer than 200 in the pre-crisis years, according to Preqin figures. Almost half of these are based in Europe, where there has historically been a stronger market for open-ended structures.



However, the last 18-24 months have seen rapid growth in these vehicles in markets such as Asia, but also among North American players that already have open-ended structures and are expanding or that have, up until recently, focused on raising opportunistic closed-ended funds but are now branching out.

Supply and demand

The drivers for this trend are clear. On the demand side, appetite for these vehicles among institutional investors has increased over recent years as interest rates have remained persistently low and monetary policy interventions in many economies have led to a quest for yield. Open-ended funds, given that they tend to focus on core or core-plus assets, are increasingly being seen by institutions as providing stable, low-risk investments with regular cash flows plus a lower fee burden. At the same time, fund managers are

viewing the opportunity to raise these funds as a way of diversifying their overall investment portfolios and offerings to investors who are seeking to reduce the relationships they have by investing more capital with fewer asset managers.

Larger funds

While in the US, open-ended structures have traditionally tended to be larger funds, the situation in Europe has, until recently, been different. Funds have often been smaller and targeted at individual markets or regions. However, some managers are now looking at raising larger funds to achieve diversification, to mitigate shocks in individual markets and to compete with some of the larger US groups now eyeing the continent with interest.

A shift in the making?

The increase in funds and capital allocated to this space inevitably raises questions about competition for assets. To date, core has meant key US cities, plus a handful of European centers, but there is clearly a limit to the number of investment opportunities in these prime locations. Yet appetite is strong outside the US, and with more Asia-focused funds coming to market, these two factors may well lead to a shift in what investors and managers consider to be core over the coming years – Asia, for example, has not traditionally been viewed as a location for core assets. As ratings agency Fitch noted in a research paper at the end of 2015: "It is possible that some investments blur the line between core and core-plus, or core-plus and opportunistic, introducing fund allocation considerations."

A different animal

For managers that have traditionally focused on private, closed-ended vehicles, the launch of open-ended structures presents opportunities in the form of new investment types and assets, plus the ability to better cater to investor needs. Yet they can also present some operational challenges.

Reporting is a key item here, given the need for increased transparency involving different types of information disclosure in open-ended structures compared with more traditional private equity funds. These structures can require significant investment in infrastructure to ensure that a fund manager can meet investor (and wider market) reporting requirements. This is leading many managers to look to specialist third parties to provide outsourced reporting and investor relations services, including many firms that have not previously considered outsourcing models.

In some ways allied to this is the inherent illiquidity of open-ended structures. While these vehicles may not be as liquid as company stocks and shares, investors clearly expect to be able to redeem their investments at short notice. This may not present a problem in a more stable economic environment; however, as experience over the last few years has shown, financial and market shocks often lead to a rush of redemption requests. This was apparent in the depths of the financial crisis in 2008-2009 – indeed, some German open-ended real estate funds are still dealing with issues that arose back then; they have sold €14bn of real estate assets since 2012 and are predicted to sell a further €10bn by the end of 2017, or 12% of the total assets under management in Germany, according to Cushman & Wakefield estimates.

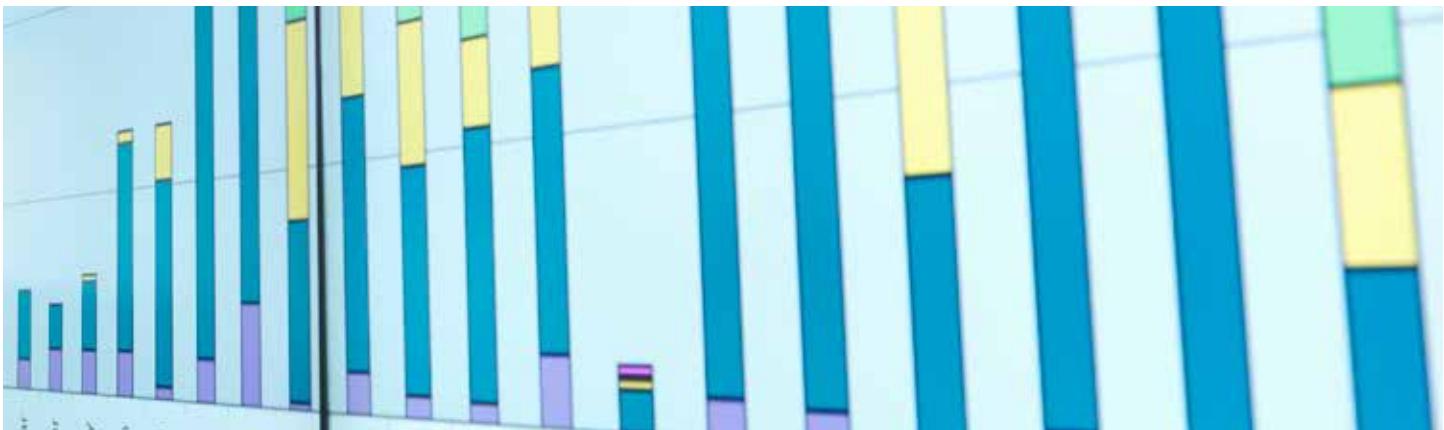
More recently, the weeks following the shock of the UK's referendum vote to leave the European Union also saw a number of investors seeking to withdraw from open-ended funds. Several UK-based funds were forced to gate their funds and, while all have now re-opened their vehicles to redemptions, the rush pushed them into the position of being forced sellers, with an inevitable impact on performance (over the short term at least).

Longer-term trend?

Such market disruptions may well give investors – and some fund managers – pause for thought. Nevertheless, the UK example demonstrates that shocks can be absorbed by open-ended funds if managed quickly and efficiently and if investors are reconciled to the potential for bouts of illiquidity if funds have to be gated for a period of time. This is the price that many institutional investors seem prepared to pay while interest rates remain low and sources of yield hard to come by. And as long as investors are looking for new ways of generating stable income-style returns, it's highly likely that the open-ended fund market will continue to grow.

New partnership audit rules on the way

Starting January 2018, new audit rules apply that will have a significant impact on most partnerships, including real estate partnerships, in the US. While the exact detail and guidance from the Internal Revenue Service have yet to emerge, the fundamental changes center around new obligations on the partnership in relation to the Internal Revenue Service's examination of a partnership.



Under the new system, the provisions for which are contained in the Bipartisan Budget Act of 2015, the TEFRA (Tax Equity and Fiscal Responsibility Act) and the ELP (elective large partnership) procedures are replaced under a single set of rules. The rules are applicable to all partnerships with more than 100 partners and any flow-through partner (other than S corporations). Those that do not meet this threshold will have to elect out of the audit regime each year or they revert to the default position of being under the Budget Act rules.

The aim of the new system is to simplify partnership tax audits and collection for the IRS, given that the TEFRA regime (the most commonly applied in real estate partnerships), which was enacted in 1982 and intended to streamline the process, has in fact resulted in a complex administrative system. In addition, the increase in tiered partnerships has made it difficult for the IRS to determine tax liability in many cases.

Key changes

Many of the specifics of the new regime and how it will be applied are not yet clear and subject to change by Congress, although there are two basic points that currently seem immutable:

1. **The new regime could shift the tax payment obligations of partners to the partnership level** – a far reaching and significant change from the status quo. This means that, the partnership might have to pay any tax owed after the audit has been conducted. The partners in the year the underpayment is paid bear the burden of such payment. Those partners might not be the partners who were partners for the tax year of the underpayment, creating intergenerational tension among the partners. In addition, a partner not typically subject to tax (a tax-exempt investor, for example) could bear a portion of the burden of the partnership's payment obligation.
2. **The new regime generally does not permit refunds for underpayments of tax.** The partnership would merely adjust its current year's tax liability for an underpayment in a prior year.
3. **Each partnership is required to nominate a partnership representative** (who has a "substantial presence" in the US) to be the sole person with authority to act on behalf of the partnership and its partners. The representative has the authority to bind all partners to any audit adjustments and therefore has far greater power than the current tax matters partner under the TEFRA regime. Partners will no longer have a statutory right to participate in an audit or litigation.

The implications for partnerships

Given that this is such a significant change to the current regime, real estate fund managers will naturally have some concerns, including how the new rules impose a payment obligation on the partnership, affect intergenerational partner dynamics, the effect on tax-exempt partners, how the partnership representative arrangement will affect partners' procedural rights with the IRS, and shifting the audit burden from the IRS to the partnership/partners. Firms will need to change how they plan for audits, consider the new regime when planning future relationships, work out how the rules will affect partners joining and leaving the partnership and the rights and obligations they therefore would want to impose on partners.

The lack of clarity around many of the details means there are significant challenges in preparing for the changes. However, it's evident that real estate firms will need to consider that the above changes are coming when drafting new partnership agreements to ensure they have adequate flexibility. They may also want to review existing partnership agreements with a view to amending the wording to build in additional flexibility.

Finally, a note on timing. The current schedule is for proposed regulations to be published in the first part of 2017, with a view to them being finalized by the end of 2017, ready for the 1 January 2018 start date. There are, however, proposed technical corrections under consideration by Congress that could impact both the substance of the new audit rules and the timing of the release of the proposed regulations.



BEPS: the final stages

The Organisation for Economic Co-operation and Development (OECD) is now finalizing its work on the Base Erosion and Profit Shifting (BEPS) initiative. While the initiative was designed to reduce tax avoidance by multinationals, the project captures all taxpayers that operate internationally, including real estate funds, pension funds and sovereign wealth funds.



This overhaul of the international tax system is based on a 15-point Action Plan, with focus areas around coherence, substance and transparency. The actions are recommendations for OECD and G20 countries, plus other nations, such as China, Brazil and India, for how they should amend their international tax laws and tax treaties.

As countries undergo an implementation process to adapt the BEPS recommendations to their existing laws it is becoming clear that taxpayers need to brace themselves for a period in which there is a lack of clarity and a risk of double taxation in some instances.

Key action points that affect real estate funds

Many of the 15 Action points will affect real estate funds to some degree. However, the following three are the most significant points for the industry to note.

Action 6 – outline

Action 6 is intended to prevent perceived tax treaty abuse. The effect on the real estate industry will relate to how real estate funds hold and finance their investments. Currently, real estate funds often use a variety of holding companies to aggregate investments. The jurisdiction of the holding company is typically located in a country with a broad treaty network to prevent investors from being disadvantaged in tax terms compared with a situation where they would have invested directly. However, Action 6 calls into question whether these arrangements constitute inappropriate treaty shopping.

Action 6 recommends that countries will need to implement one of the following provisions in their tax treaties:

- 1. Limitation of Benefits (LOB) rule:** This is based on one of the components already included in many US treaties. It allows a treaty country to look through to the ultimate owners and check whether they would have been entitled to benefits under a treaty had they invested directly. The rule provides for a series of objective tests, based on characteristics such as legal structure, ownership or activities to identify a link between the person (or owner) and the residence state. This determines whether a person is considered to be qualified and therefore eligible for treaty benefits.



- 2. Principal Purpose Test (PPT):** This test is more subjective and focuses on the main business purpose of the holding company. It denies tax treaty benefits if one of the principal purposes is to obtain tax treaty benefits. This would be the case when it is reasonable to conclude, based on all relevant facts and circumstances, that obtaining treaty benefits was one of the principal purposes of any arrangement or transaction. The exception to this is where it can be established that granting the tax treaty benefit would be in accordance with the object and purpose of the relevant provisions of the tax treaty.

Having a holding company between the asset and the fund is unlikely to meet the test unless there are reasons or activities for the holding company other than treaty access.

- 3. A combination of LOB and PPT.**

Action 6 therefore potentially will have a significant effect on the real estate industry and its use of holding and finance companies, to the extent they were predominantly driven by treaty shopping motives.

Collective Investment Vehicles (CIVs), such as mutual funds, are exempted from these Action 6 recommendations. These are funds that are subject to investor protection regulation in the country where they are established and that are widely held and hold a diversified portfolio of securities. Countries have adopted different measures in relation to CIV funds: some countries have granted treaty benefits to CIV funds that are registered in a contracting state, while some adopt a look-through approach for investors. Other countries consider a CIV to be resident if a percentage of investors would otherwise receive the same treatment.

The OECD recognized that further work on non-CIV funds (including private equity real estate funds) would be carried out to address the concern around treaty entitlement of funds but also take into consideration the economic importance of such pools of capital and the need to ensure that treaty benefits be granted where appropriate. This led to an OECD discussion draft in March 2016 with respect to which 523 pages of public comments were received, most of which stressed the importance of the industry and the impact on economic growth if no solution is provided in the BEPS guidance. On January 6, 2017, the responsible Working Party at the OECD issued a discussion draft with three draft examples specifically relating to Action 6 and non-CIV funds.

These draft examples are under consideration by the Working Party for inclusion in the Commentary on the PPT rule. Comments should be submitted by 3 February 2017. The draft examples and the comments received will be discussed at the Working Party's meeting in February 2017.

In the meantime, in November 2016, the OECD released the text of a multilateral instrument (MLI). The MLI will enable countries to implement tax treaty BEPS related measures in a coordinated and consistent manner across the network of existing treaties without the need to bilaterally renegotiate each such treaty. One of the four areas of anti-avoidance BEPS measures addressed in the MLI is Treaty Abuse Measures under Action 6, requiring participating countries to adopt a PPT, a LOB provision or combination thereof.

The outcome of MLI discussions seems to be that most countries are likely to adopt a PPT rule only.

The treaty changes under the MLI may create unexpected costs for non-CIV funds, including private equity real estate funds. For example, failure to meet the PPT may lead to the imposition of domestic withholding tax rates rather than a proportionate treaty rate that would have applied had the investors invested directly.

The MLI is open for signatures as of 31 December 2016, followed by ratification, acceptance or approval per country. For early adopter countries, MLI provisions could be effective as of 1 January 2019.

Action 6 – real estate recommendations

- 1. Consider commercial rationale for fund structure.** Substance, in the sense of office space and employees, may no longer be sufficient to satisfy treaty eligibility requirements. Fund sponsors may want to consider having their holding company located in the same jurisdiction as their fund. If an AIFMD-regulated manager, fund and holding company will all be located in the same jurisdiction, it may require that some people are moved.
- 2. Think about separate accounts and joint ventures.** Designing commingled fund structures with a variety of different investors and therefore tax attributes may be too complex. Instead, some fund managers may opt for separate accounts and joint ventures, grouped according to investors with similar profiles.
- 3. Consider the use of different vehicles.** Some funds may decide to use local REITs or regulated vehicles such as the OPCI in



France, SOCIMI in Spain, Spezial Fonds in Germany, FBI in the Netherlands and SIF/RAIF in Luxembourg. These vehicles are tax-efficient, embedded in local legislation, and have the potential to render the question about non-CIV fund treaty access less relevant.

- 4. Review fund documentation and underwriting.** Consider the potential for increased documentation and compliance as a result of BEPS implementation.
- 5. Communicate clearly.** Make sure investors and stakeholders understand how BEPS may impact the fund and how decisions are reached.

Action 4 – outline

Proposals to limit interest deductions generally suggest that countries limit net interest deductions to between 10% and 30% of an entity's EBITDA, although governments may allow taxpayers to deduct a larger amount based on the average third-party debt across the group.

For the real estate industry, the change is significant in that the traditional measure of loan capacity has been loan to value ratios (to reflect the fact that underlying assets act as security), while the OECD tests measure interest as a proportion of earnings rather than value. The interest rate and the amount borrowed will therefore affect interest deductibility.

Under the recommendations, the OECD has introduced a main test and a supplementary group test:

- 1. Main test:** Tax relief for net interest (including third party) is limited to between 10% and 30% of EBITDA for each entity. EBITDA measures will be determined by individual states.

-
2. **Group test:** This is optional for countries and would be based on the worldwide ratio of third-party interest expense to income, measured according to consolidated financial accounts. This is intended to be an income-based test, but countries can opt to adopt an asset-based test.

As far as the main test is concerned, it is as yet unclear which jurisdictions will factor in underlying income from rental streams for EBITDA calculations and which will take account of the fact that many funds generate most of their returns from the sale of an investment.

The group test may be beneficial to real estate funds in that it recognizes that banks will lend significantly more than the standard EBITDA test would allow, particularly when the loan is secured against property. Nevertheless, in order to be eligible for the test, a manager would need to prepare audited consolidated financial accounts purely for that purpose (as investment entities do not prepare fully consolidated accounts under BEPS, IFRS or US GAAP). It also remains unclear how the group test will be implemented in different countries. Germany, for example, has had a group test for a number of years, but the anti-avoidance measures are difficult to comply with and so it has only been used in limited circumstances.

The US and Germany already have EBITDA-based limitations, but many other jurisdictions have yet to implement BEPS recommendations, and for some, such as Ireland, Luxembourg and the Netherlands, there would be a significant transition. The European Union has enacted the ATA Directive, which provides for a 30% of EBITDA limitation, although this includes third-party as well as related-party debt. However, it does allow for a 100% deduction if the annual net interest expense is below €3m.

Action 4 – real estate recommendations

1. **Review existing investment holding structures.** Consider how the group test might be applied to your funds and whether a potential restructuring is feasible or desirable (although with the caveat that restructuring strategies will need to depend on how the recommendations are implemented locally).
2. **Review external debt arrangements.** Consider how they will be affected by the proposed rules. For example, leverage may need to be distributed differently among various jurisdictions.

This may not be possible for existing investments (although this depends on local implementation), but should be considered for new investments.

Action 7 – outline

Action 7 changes the definition of what constitutes a permanent establishment. Initially proposed to combat avoidance by multinationals through internet selling and commissionaire structures, it affects real estate funds that have local deal teams involved in buying and selling investments. It also affects situations where a local entity is established in the location of an investment to provide advice to the fund manager. In the past, these activities have not created a permanent establishment, because key decisions were taken by a board or committee outside the investment country, and the activities of local investment teams were considered ancillary.

However, under the Action 7 proposals, a permanent establishment arises when local teams habitually negotiate contracts on behalf of the fund and these contracts are concluded without material modification by fund management – even if an investment committee takes the final decision. If permanent establishment does arise, three main implications could arise: double taxation for fund investors; increased compliance costs; and higher overall tax on the investment because profits would be attributed to the permanent establishment. In addition, the rules around so-called independent agents have been tightened under the recommendations.

Action 7 – real estate recommendations

1. **Monitor changes to permanent establishment rules in each country where you operate.** These changes may happen through multilateral or bilateral double tax treaties. Countries that have already signed treaties with such provisions include Australia, Chile, Germany and Japan.
2. **Consider operating arrangements.** Look at the involvement of onshore and offshore teams and their international travel policies to determine how they might be affected by changes to the permanent establishment definition.

Real estate platform deals on the rise

As real estate investment continues to increase in popularity, many investors are now also looking to platform-level deals, with fee streams earned by management companies fast becoming a new investment frontier. The last 12-24 months have seen a wave of platform deals, where investors have acquired stakes in management companies and mergers and spin-offs have been completed with investor backing.



So what's driving investor interest? Part of it is down to the emergence of mega-funds in the private equity real estate industry – in aggregate, these often represent 30% of an investor's commitments in a given year. This select group of managers has a significant amount of assets under management and as such have contracted management fees and promote opportunity, which is proving highly attractive to some investors. For fund managers, these deals provide the opportunity to cash out (especially where there is just a handful of founding executives), raise capital to expand the platform offering or to lock in valuations ahead of a future IPO.

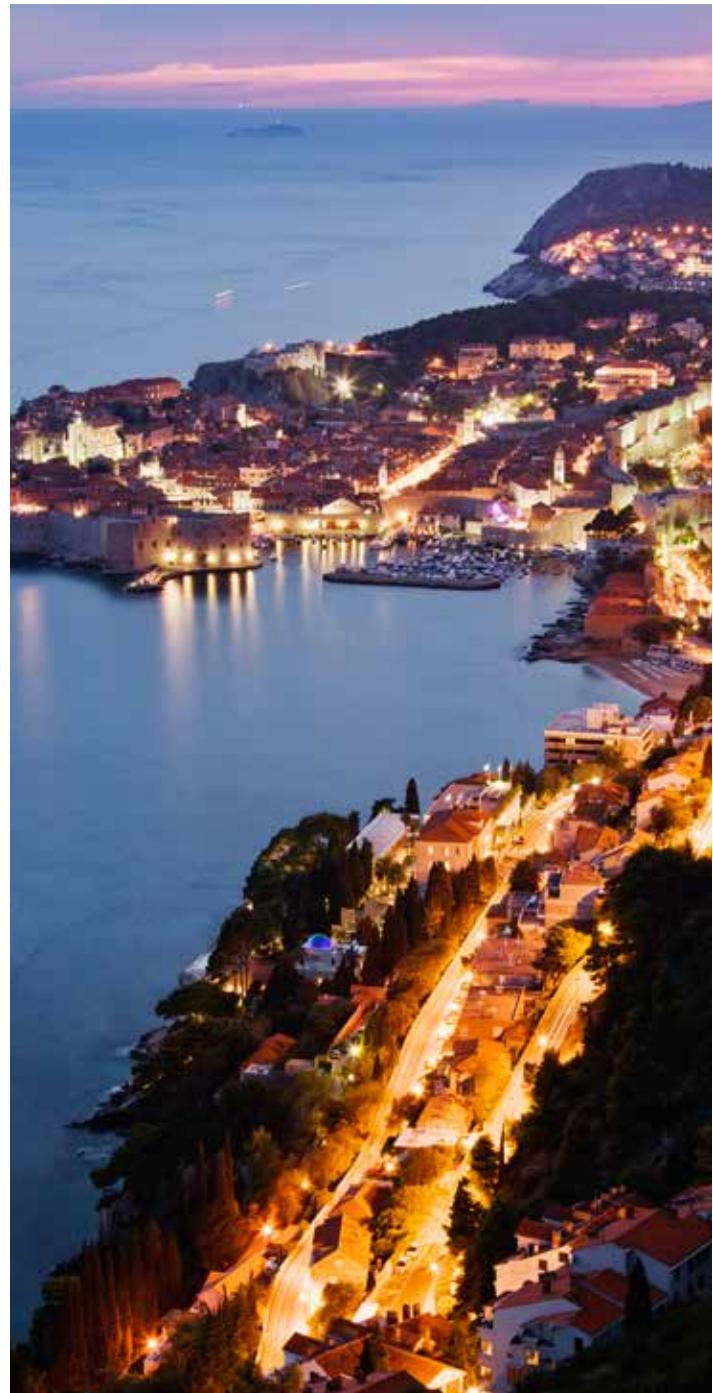
While the volume of these platform deals will be limited, given the challenge of aligning the often unique requirements of buyers and sellers, we expect there to be more large transactions completed over the coming years.

Yet making these deals a success requires careful attention and a different approach from traditional asset-level and pooled fund investments. These are just some aspects to consider:

1. **Investment analysis:** Underwriting a management business requires a completely different investment analysis from more traditional real estate investing. The fund manager is a business enterprise, secured only by talent, reputation and timing. To the fund manager, assets are fluid. As a result, both investors and managers need to exercise great care in considering each deal's qualitative and quantitative characteristics and the motivations on either side for the deal. For example, in straightforward acquisitions, a non-real estate fund manager might simply be looking to add real estate to the product mix. However, in a merger of two organizations, the parties seek to either gain greater scale, access to investors, or diversification of regions or property types. Meanwhile, investors acquiring a minority stake in real estate management companies are likely to be seeking attractive returns in an investment with relatively low volatility. In some cases, an entity-level investment can also be a way of aligning strategically with industry leaders and obtaining a lens into leading practices and investment strategies.

- 2. Cultural fit:** When considering potential offers for a merger or acquisition, real estate fund managers should look beyond the financial aspects of the deal to the cultural fit between the two organizations. These transactions can be complex, and the way the details are handled often determines the success rate of an integration. Human elements are often the make-or-break factors in these deals. Real estate fund managers need to understand how involved the investor expects to be and whether they will want to have a say in the decision-making process or some level of overall control. The importance of clarifying these roles up front cannot be overstated: in some ways, selling a minority stake can be akin to inviting an activist to join the board who will see how you operate your business. On the other hand, finding a partner who can offer your firm new perspectives can also create a dynamic partnership and become a tremendous asset for the platform.
- 3. Valuation:** Pricing a manager is highly complex and requires a clear understanding of how sustainable future income potential is. Management teams need a solid track record that suggests they are capable of robust future fundraising and are able to deliver returns consistently. Deals where managers have been able to demonstrate these characteristics have typically attracted double-digit pricing.

Executed well, these deals can provide tremendous value to both fund managers and investors. They are also a sign that the real estate market remains in strong health as investors recognize the critical role real estate holdings play in building well-diversified portfolios for the benefit of their constituents.



Conclusion: looking ahead

As we've explored, high demand for real estate, leading to record dry powder, technological advances that can improve operational performance both at asset and fund levels, and high asset prices are all features of today's global real estate market.



After so many years of growth and significant distribution of capital to LPs and then recycled to follow on funds, we are now seeing evidence that pricing in some of the key markets may have hit a plateau. There are concerns in the markets that have grown most strongly that a destabilizing event will transmit quickly through price.

Yet it's worth taking a step back to look at how we reached this point to see where the path may lead us over the medium term. The abundance of capital that has entered the real estate market is a result of central banks' intervention globally in the economy. Low interest rates and loose monetary policy have made the asset class highly attractive to investors seeking yield.

While in some markets, such as the US, interest rate rises have recently been announced or seem likely in the near term, it is relatively certain that increases will be measured and gradual. Central banks have also put in place structures to help mitigate overexposure by banks to more risky assets. The central banks may have heated up the real estate market, but they also have the levers at their disposal to help smooth future volatility.

At the same time, mindful of the cyclical nature of the asset class, investors have maintained a disciplined stance when exploring new deal opportunities. Deal volume is down in many markets not just because of the limited supply of assets on the block, but also because real estate funds have largely remained prudent about

the prices they are prepared to pay if they are to generate the returns expected by limited partners. The diversification into new strategies with the explicit aim of moving along the risk curve is another expression of that discipline – GPs, backed by LP capital, are not simply piling into the most competitive situations in a bid to deploy capital.

As many markets globally face the prospect of a slowdown in the real estate market, it's worth setting the current situation into a historical context. Back in 2006, when the market was last turning, the major markets had just experienced rapid speculative growth, with high levels of development driven by economic growth of 5%. As we know, the result was oversupply on a massive scale. Yet today's market has been preceded by low economic growth and therefore lower levels of development in many markets. Should the market turn, we expect a rather softer landing this time around.

So, while there are clearly good reasons for concern – from high pricing and political uncertainty to the future direction of trade winds – the fact that real estate funds now hold record amounts of dry powder is highly positive. Any turning of the cycle will present many new investment opportunities and with capital to deploy, the global real estate fund markets is in a very strong position to capitalize on these.

Contacts

EY Global

Howard Roth

Global Real Estate, Hospitality and Construction Leader
+1 212 773 4910
howard.roth@ey.com

Mark Grinis

Global Real Estate Fund Services Leader
+1 212 773 5148
mark.grinis@ey.com

Robert Otremba

Global Real Estate Fund Market Leader
+1 202 327 7694
robert.otremba1@ey.com

EY Americas

Mandy Abramsohn

Toronto
+1 416 943 2142
mandy.abramsohn@ca.ey.com

Viktor Andrade

São Paulo
+55 11 2573 3042
viktor.andrade@br.ey.com

Tony Ianni

Toronto
+1 416 943 3476
tony.a.ianni@ca.ey.com

Tom Brown

Atlanta
+1 404 817 4241
thomas.brown@ey.com

Dovid Frankel

New York
+1 212 773 4536
dovid.frankel@ey.com

Henry Gonzalez

Mérida
+99 992 61 450
henry.gonzalez@mx.ey.com

Kevin Hanrahan

Atlanta
+1 404 541 7255
kevin.hanrahan@ey.com

Josh Herrenkohl

New York
+1 212 773 3302
josh.herrenkohl@ey.com

Barksdale Penick

Washington D.C.
+1 202 327 8787
barksdale.penick@ey.com

Chen Shein

Tel Aviv
+972 3 5687101
chen.shein@il.ey.com

EY EMEA

Kai Braun

Luxembourg
+352 42 124 8800
kai.braun@lu.ey.com

Karl Hamberger

Munich
+49 89 14331 13662
karl.hamberger@de.ey.com

Michael Hornsby

Luxembourg
+352 42 124 8310
michael.hornsby@lu.ey.com

Dietmar Klos

Luxembourg
+352 42 124 7282
dietmar.klos@lu.ey.com

Harry Lang

Berlin
+49 30 25471 21270
harry.lang@de.ey.com

Christina Larkin

London
+44 20 7197 9236
clarkin1@uk.ey.com

Matt Maltz

London
+44 20 7951 1886
mmaltz@uk.ey.com

Mathieu Roland-Billecart

London
+44 207 951 5206
mrolandbillecart@uk.ey.com

Christian Schulz-Wulkow

Berlin
+49 30 25471 21235
christian.schulz-wulkow@de.ey.com

Stefan van den Brink

Amsterdam
+31 88 40 72405
stefan.van.den.brink@nl.ey.com

Jean-Roch Varon

Paris
+33 1 46 93 63 89
jean-roch.varon@fr.ey.com

EY Asia-Pacific

Harvey Coe

Hong Kong
+852 2846 9833
harvey.coe@hk.ey.com

Luke McIntosh

Melbourne
+61 438 71 9944
luke.mackintosh@au.ey.com

Seng Leong Teh

Global RHC Lead Advisory Leader
Singapore
+6221 5289 5000
seng-leong.teh@id.ey.com

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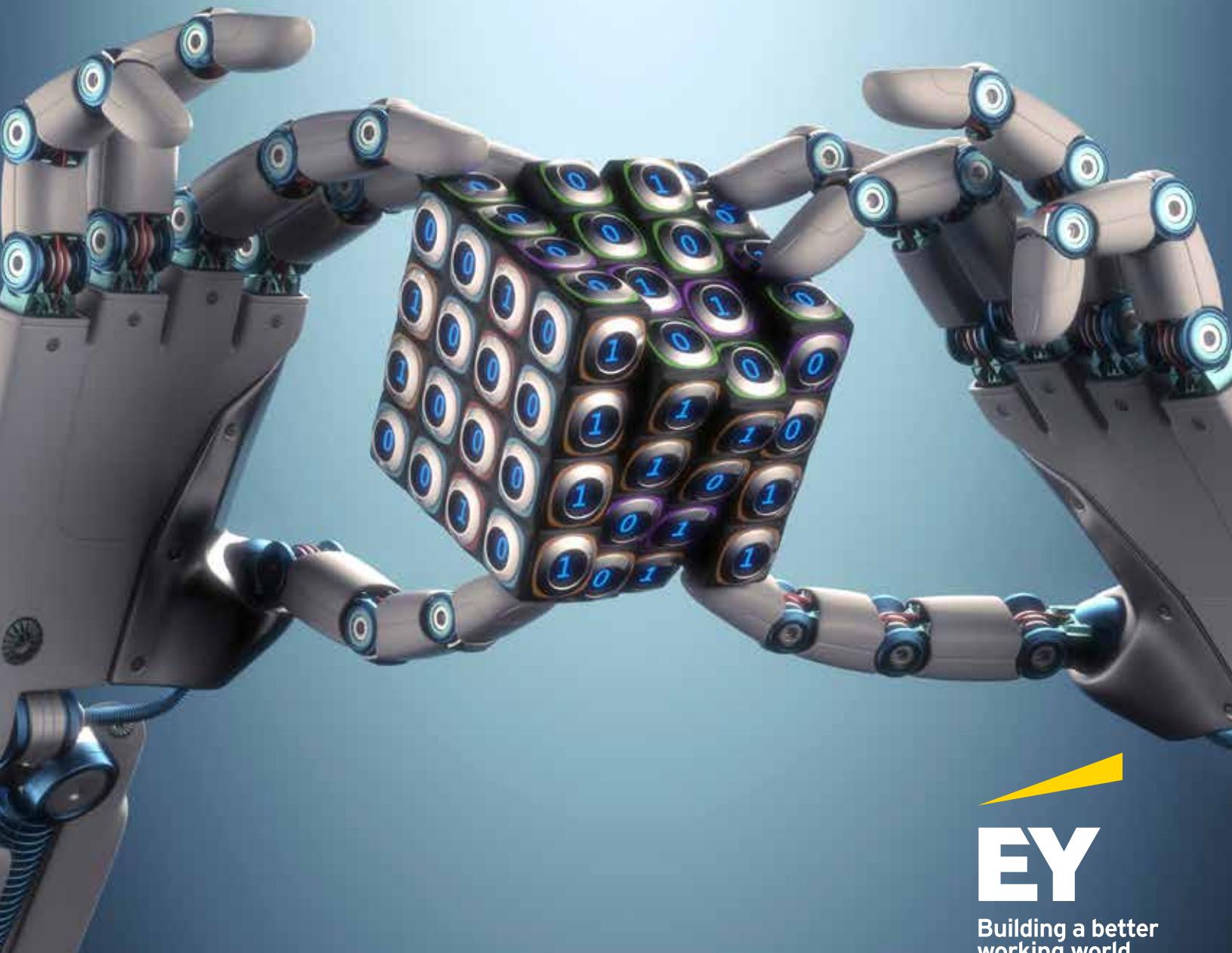
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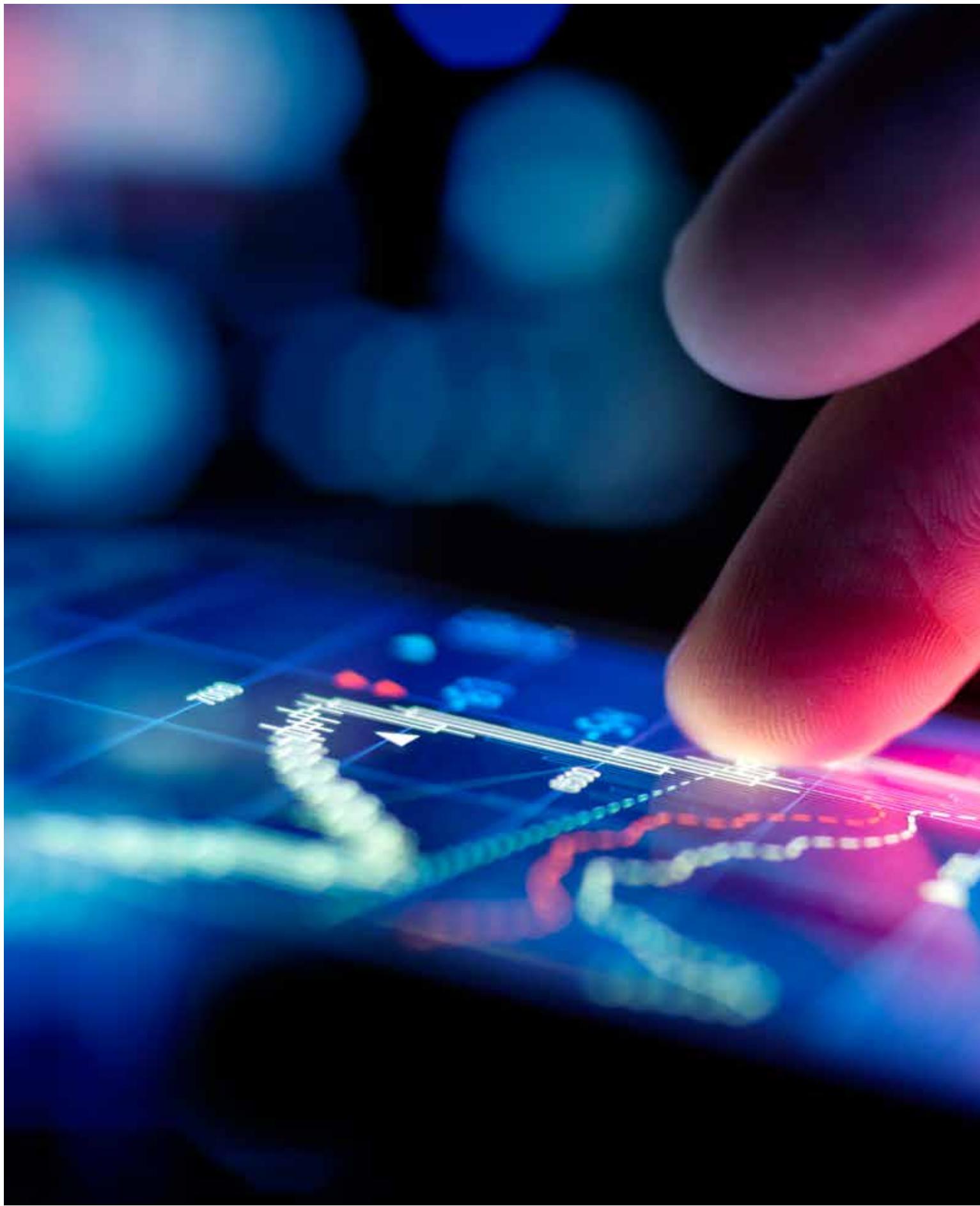
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Digital trends in real estate, hospitality and construction

Building blocks for future growth







How will your business survive and grow in the digital era?

The digital future is here. Whether real estate is center or secondary to your business, the choices you make now will position you as a cutting-edge industry leader or a dinosaur in the age of technology.

All industries have a real estate component, whether they are owners, operators, investors or occupiers of real estate. The importance of considering factors such as customer preferences and expectations, building and information security, cost efficiency and environmental impact in relation to real estate is critical in today's increasingly digital environment. This represents opportunities and challenges.

Having a strategy in place to identify and address current and emerging issues is key in today's fast-paced environment – but developing one can overwhelm companies, even those with well-established teams.

Digital trends in real estate



In the short-term

Disruptive forces can pave the way for explosive growth or take down reputable giants. Having a strategy in place to identify and address emerging disruptive trends, analyze and prioritize their importance, understand their long-term implications, highlight risks and plan for action is imperative for thriving in this business environment.



The sharing economy

The sharing economy provides enhanced leisure experiences, business opportunities and conveniences that were previously out of reach for many.

The real estate, hospitality and construction (RHC) sector has felt the effects of this new economy. UberRUSH has changed the logistics and warehousing business, Airbnb has changed the way people travel, and construction machinery is now shared to generate profits.



Internet of Things/big data

It is estimated that more than 1b "things," excluding smartphones, tablets and PCs, will be connected in commercial buildings alone by 2018. This is up 35% from 2015, according to Gartner.

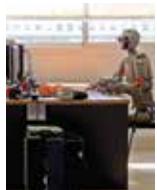
In the RHC spaces, the Internet of Things (IoT)/big data can help enhance customer experience, identify operational efficiencies, analyze building information management for owner/operators and manage project risks.



The last mile

Distribution real estate is rapidly changing, given the rise in e-commerce and explosive growth in urbanization. Advanced algorithms, drones, delivery robots and autonomous vehicles are poised to shape the distribution landscape.

In the short-term, mega warehouses in rural areas and smaller warehouses in urban centers are being built to distribute goods on demand, while brick-and-mortar shops are disappearing or being reconfigured or repurposed due to changes in shopping behavior.



Robotic process automation

Robots can perform rule-based tasks based on pre-defined instructions. They can also understand unstructured data and human communication, and draw conclusions enhancing process automation. Robots can also learn from experience in order to perform complex tasks.

In the near-term, there will be less need for back-office functions, leading to reconfigured and ultimately fewer offices. Rapid data processing in the hospitality space will lead to efficiencies and free up time to focus on customer service. Current construction technology has the ability to connect machinery and workers to the cloud, increasing precision and safety.



Compromised cybersecurity

The average time to detect a cyber attacker's presence in a company's system is 140 days, compromising not only its proprietary business information, but also sensitive customer data.

Building, vendors and tenants are interconnected, and business systems are shared across building networks. Building IT systems have some level of security, but often have deficiencies, exposing companies' networks to cyber attacks.



Autonomous vehicles

The auto industry, as well as technology and logistic companies, are investing millions to create vehicles that can run safely without human intervention, meaning that autonomous vehicles may soon be a common sight.

There is a potential for disruption in real estate's industrial, office, residential and retail segments as a result of different parking requirements as well as warehousing and manufacturing logistical changes.

On the horizon



Virtual brokerage and leasing

Real estate companies are moving rapidly toward a more self-service model. Property owners can enhance their marketing strategies by offering virtual reality tours of pre-construction projects, and also owning more of the customer experience via web technology. Fewer points of contact for leasing or selling space reduces contract turnaround time, allowing for greater capital retention and quicker deployment of capital to other projects.



3-D printing

3-D printing, also known as additive manufacturing, creates objects of any shape from a digital 3D model. 3-D printing could have an impact in warehousing and production facilities. In construction, concrete printing, when combined with a mobile prefabrication center, has the potential to reduce the time needed to create complex building elements.



Blockchain

Blockchain technology allows companies to streamline and accelerate business processes, increase cybersecurity, and reduce or eliminate the roles of trusted intermediaries or centralized authorities.

Execution of contracts in a safe and trustworthy environment remains a challenge. For example, blockchain technology is being piloted for land title registry in Sweden, Ghana, the Republic of Georgia and other countries. It is also being used for financing cross-border projects, real estate sharing applications and varying types of "smart contracts."

EY's core digital offerings

No matter what stage of technology adoption your business is currently in, we can help take your business to the next level with our strategic insights and experience in the following five core areas:



Digital enterprise and execution

Rethinking the business strategy and operation model in the digital age:

- ▶ Development of an enterprise-wide digital strategy, including analytics, cybersecurity, operations, technology, finance and tax
- ▶ Analysis and optimization of marketing channels, including websites and loyalty programs
- ▶ Design of smart building strategy
- ▶ Development of mobile strategy



Experience transformation

Embracing the world of the customer, then design and implement new experiences:

- ▶ Develop data analytics to obtain insight into the customer's experience
- ▶ Develop advanced predictive analytics to develop targeted marketing
- ▶ Use of analytics to identify cross-selling opportunities, customer loyalty and behavior patterns
- ▶ Develop mobile services analytics to improve mobile customer strategy and optimize the customer experience



Digital trust

Scanning the digital risk horizon and building agility to respond to digital risks:

- ▶ Understand cyber risk exposure and develop an advanced threat management process
- ▶ Assess enterprise-wide identity and access management
- ▶ Recommend options for data protection and privacy



Incubation and innovation

Establishing an end-to-end innovation capability to incubate new ideas and business models:

- ▶ Our EYnovation™ program offers start-ups and fast-growing companies EY services, our global network, the opportunity to share relevant knowledge and a dedicated EY mentor.
- ▶ Advisory services are also provided around legal structure, obtaining approvals and protecting intellectual property rights.



Digital operations

Optimizing and automating operations to execute on the promise of digital:

- ▶ Construction of data analytics suite: contracts, revenue, margin, cost, project anomalies analysis
- ▶ Smart operational efficiencies through smart building strategy development
- ▶ Robotics process automation to unlock operational efficiencies
- ▶ Smart cost-reduction opportunities and operational efficiencies through customized analytics

EY is helping companies around the world define their future-state digital strategy and transformation road map.



Global real estate developer

One of the largest developers in Asia, with a primary focus on residential, commercial, retail malls and hotels, was looking to better understand how descriptive, predictive and prescriptive analytics can help drive customer engagement. EY was engaged to identify and help implement a scalable platform to capture data concerning different property types, customers and external sources. Benefits to the client:

- ▶ Built centralized data analytics platform
- ▶ Defined data governance and policies
- ▶ Enhanced analytic capabilities for the following areas: single customer view, family-oriented marketing, top customer analysis and customer journey



Global cruise line company

One of the largest global cruise vacation company's primary goal was to become a more digitally enabled organization, as well as to improve the guest experience. EY helped the company create a future-state digital and customer experience strategy and transformation road map. Benefits to the client:

- ▶ Identified digital gaps and opportunities
- ▶ Defined a future-state digital experience and road map
- ▶ Constructed a digital organization design and operation model

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@EY_RealEstate

Contact us

For more information, please contact:



Josh Herrenkohl

EY Global RHC Advisory Leader
josh.herrenkohl@ey.com
+1 212 773 3302



Mike Magrans

Principal, Hospitality & Leisure
Ernst & Young LLP
mike.magrans@ey.com
+1 212 773 3750



Ad Buisman

EY Global Construction & Infrastructure Leader
ad.buisman@nl.ey.com
+31 88 40 79433



Avishek Banerjee

RHC Advisory Leader, India
Ernst & Young Private Ltd
avishek.banerjee@in.ey.com
+91 226 192 1028