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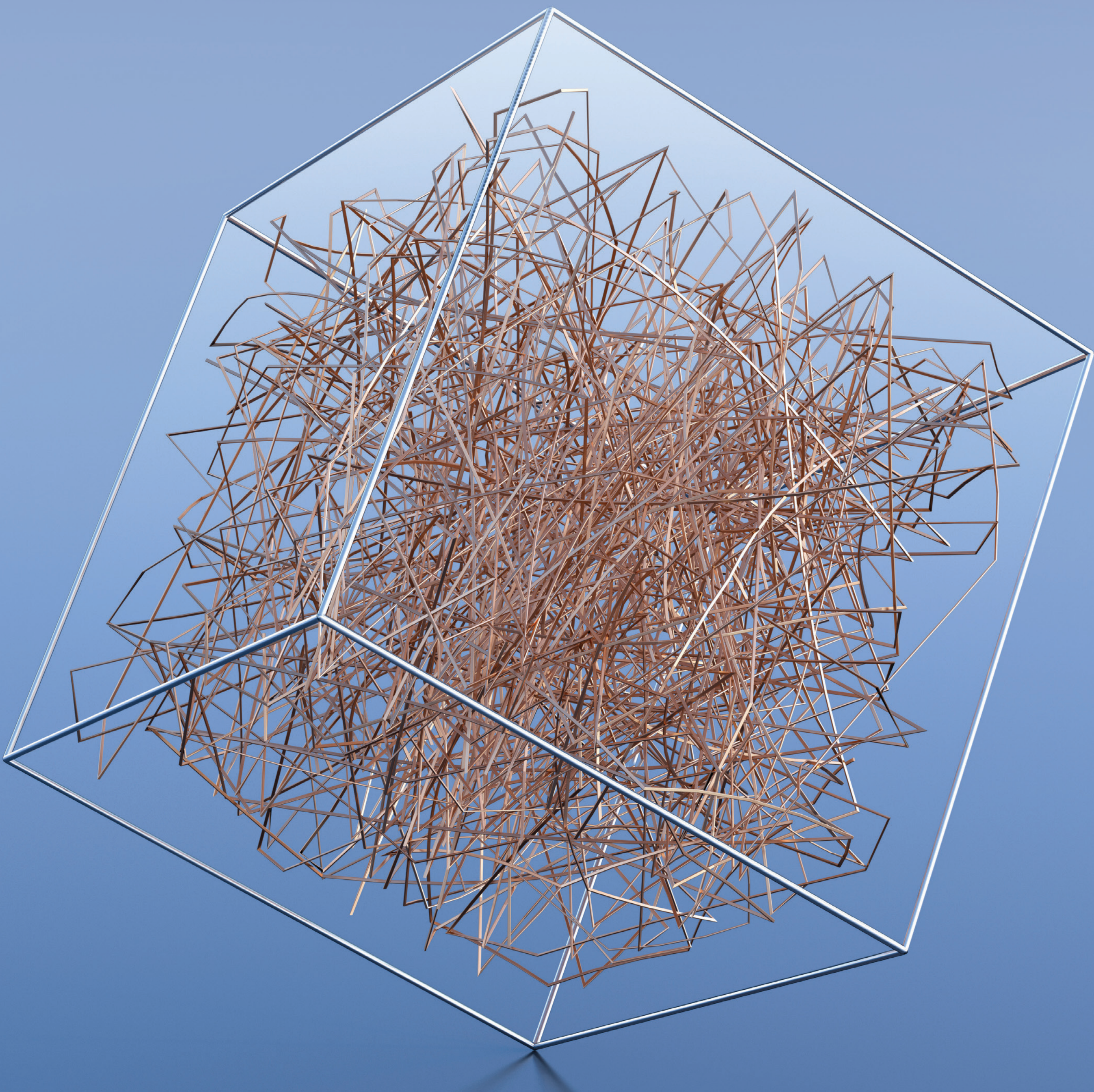


UK Real Estate Report – Warehouses Unpacked

Box Clever

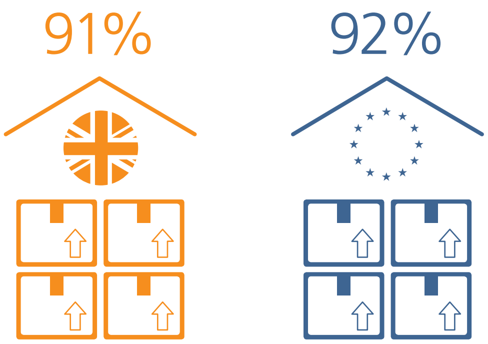
Outlook

31% of real estate professionals are now feeling optimistic, compared with just **14%** in the wake of the EU referendum in summer 2016. However, **79%** feel the uncertainty in British politics is having an adverse impact on their organisation.

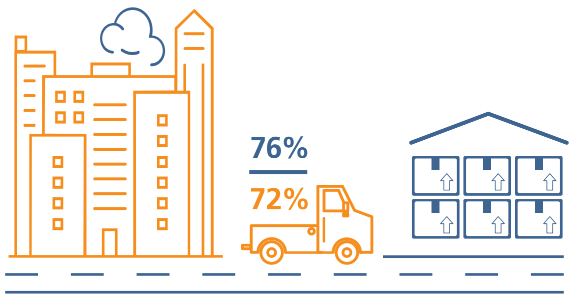
The top two concerns for retailers regarding Brexit centre on new customs requirements (**44%**) and the declining popularity of British brands and products among EU buyers (**35%**).

Manchester remains comfortably in the top spot of preferred regional cities with **63%**, though Bristol with **38%** and Edinburgh with **32%** have both made gains of almost **10%** since 2016.

Opportunity

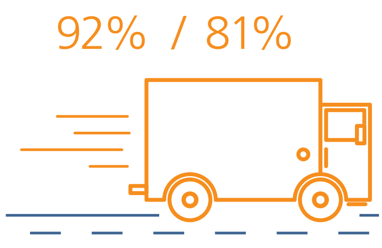


91% of real estate professionals think demand for warehouses will increase in the UK and **92%** across Western Europe over the next 2 years.

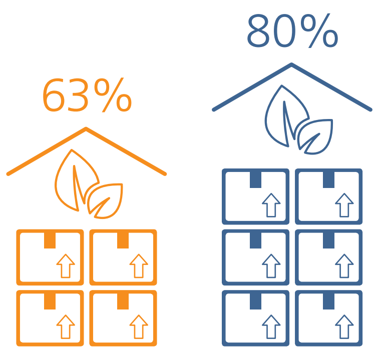


Large, out-of-town warehouses are almost equally as popular among real estate sector respondents (**76%**) and retailers (**72%**) who both envisage increased demand in the short-term.

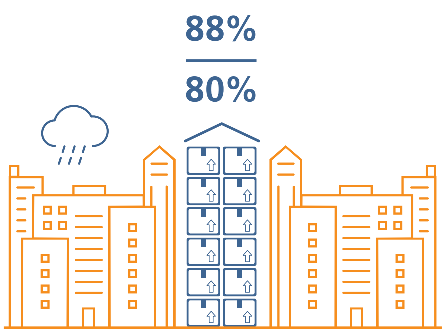
Challenge



92% of real estate sector respondents and **81%** of retailers see consumer demand for ever faster delivery as being a key challenge.



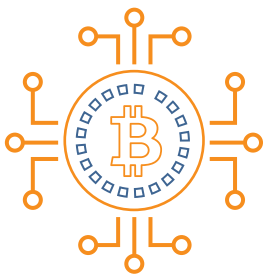
Creating efficient and sustainable warehouse buildings is highlighted as a challenge, but real estate professionals (**63%**) appear to underestimate its significance relative to retailers (**80%**).



88% of real estate professionals and **80%** of retailers believe that demand is so strong that warehouses will need to be extended vertically in space constrained cities.

Distribution and logistics is by far the most appealing asset class at **74%**, with industrial property not far behind at **61%**. By contrast, retail property has dropped from **35%** of those polled saying it appealed in 2016, down to a mere **7%** in 2018.

86% of real estate professionals and **55%** of retailers agree that there will be increased demand for small, centrally located warehouses, which are essential to guaranteeing fast turnarounds for urban deliveries.



85% of real estate professionals and **83%** of retailers agree that keeping pace with technological change is a challenge for the logistics industry; big data (**79%**), autonomous vehicles (**69%**) and blockchain (**67%**) are seen as having the greatest impact.

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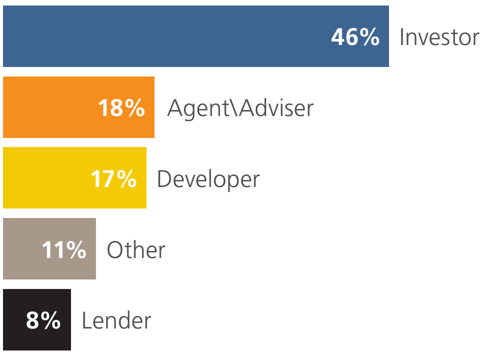
About the research

In the summer of 2018, international law firm CMS, in conjunction with FTI Consulting, conducted a major piece of research into logistics property comprising two polls and seven interviews.

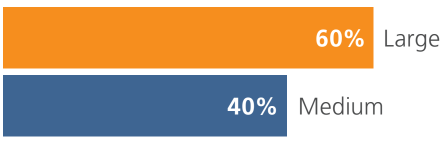
We polled over 350 real estate investors, developers and advisers responsible for assets worth more than £400bn.

The profile of this group is broken down as follows:

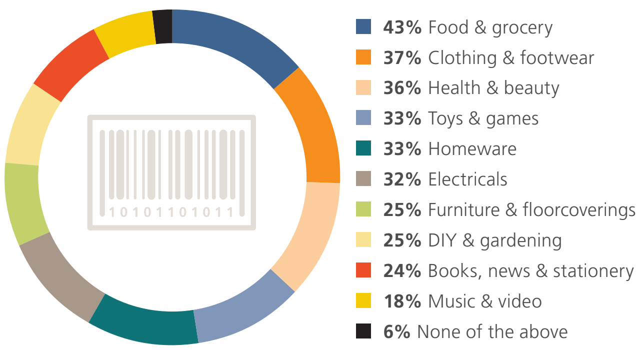


We also polled over 250 UK retail decision makers with the aim of finding how their supply chains and retail estates are changing in the face of the e-commerce revolution. These retailers were all large (250+ employees and/or annual turnover of over £50m) or medium in size (50 to 250 employees and/or annual turnover of between £10m and £50m). They retail a broad range of products, in a multi-channel format, across key European geographies:

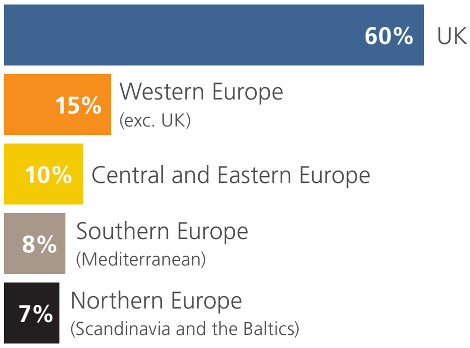
Size



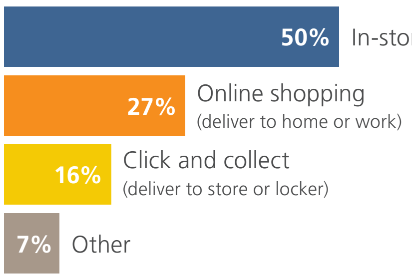
Products



Locations



Channels



In addition, we conducted six in-depth face-to-face interviews with leaders in the logistics property field and one interview with a leading online fashion retailer on an unattributed basis.

> “Ten years ago the warehouse sector was on the wrong end of the decline in western manufacturing. Now it is on the right end of a fundamental transformation created by the digital age.”
>
> *David Sleath, SEGRO*

Reversal of fortunes

Logistics property has seen a stellar rise in its fortunes over the six years that our real estate team has been carrying out its annual research into the UK real estate sector.

It is no exaggeration to say that even in 2013 warehouses were seen as the Cinderella of property, with the greater appeal and perceived glamour of mainstream office and retail assets often leaving logistics and industrial properties neglected among investors.

However, something was beginning to stir, and a tide of capital has flowed into logistics over the last five years as global players have been captivated by the transformative impact of e-commerce on the sector.

In this report, we consider the overall mood of the real estate market and then go on to 'unpack' the warehouse sector in detail. We not only look at the drivers making logistics property a highly attractive asset class, but also consider the varied challenges facing the sector as it evolves in the face of rapid technological change and intensifying consumer demands.

With e-commerce predicted to be on an upwards trajectory, players in the retail and property worlds are looking to reinvent their approach to logistics so they can service this. With centrally located assets in short supply and environmental pressures growing in cities, new solutions are being examined.

To better understand the challenges facing the sector we interviewed six logistics property leaders and one major online fashion retailer. We also polled over 350 real estate sector experts (including 160 investors) and over 250 UK retail decision makers, to get a full view of the demand/supply equation at play in retail logistics in particular.

What's clear is that as the sector's popularity inevitably generates increasing competition, investors, developers and retailers alike need to 'box clever' to stay ahead of the pack.

We hope you find the results interesting and look forward to discussing them with you.

Ciaran Carvalho.

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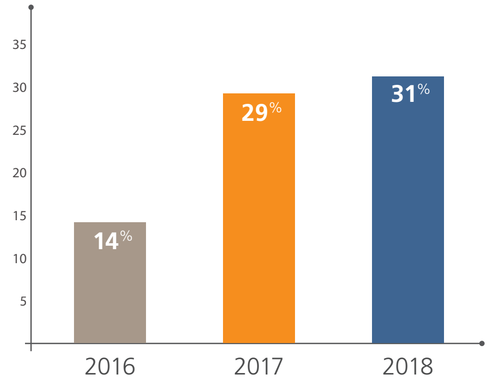
#boxcleverCMS

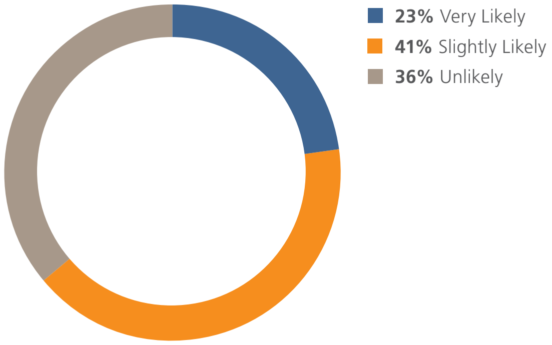
Market snapshot: mid-cycle dip or late cycle slowdown?

Mood of the market

Real Estate Sector: How optimistic do you feel about the UK real estate market in the short-term? % Optimistic



Real Estate Sector: How likely do you think it is that interest rates will rise in the next two years?



Between our two polls in summer 2017 and summer 2018, the UK property market has remained in a state of phony war, trying to 'keep calm and carry on' in spite of the ongoing uncertainty surrounding the terms of Britain's departure from the European Union. 31% of our real estate sector respondents are optimistic, inching up just 2% from 2017.

There are two schools of thought prevalent right now.

The first is that the property cycle takes 15 years from bust to boom, signalled by cycles between 1974 and 1989 and 1992 and 2007, meaning the current cycle still has seven years to run having begun in 2010.

The other school of thought is that speed of communication and information, combined with structural changes triggered by technology such as e-commerce, will shorten the cycles and that in summer 2018 we are in the early stages of a retail property-led downturn.

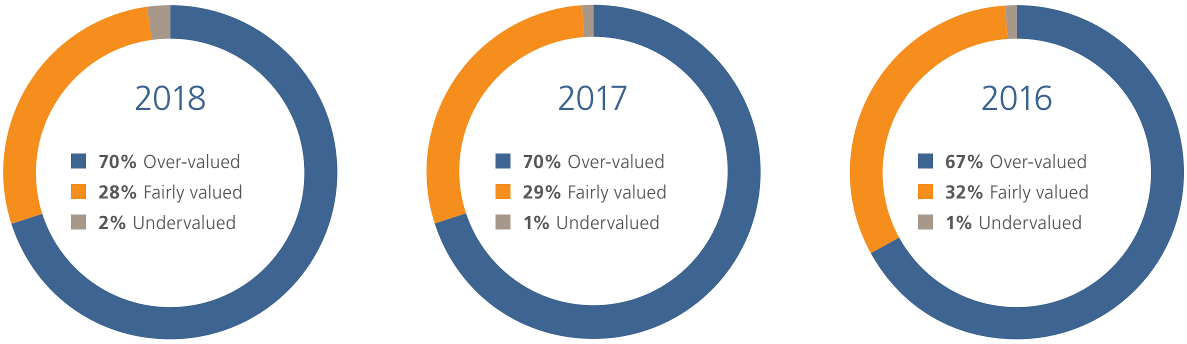
At the time the poll was conducted, 64% of the real estate sector respondents thought it was likely interest rates would rise, and this was borne out shortly after, when The Bank of England raised interest rates from 0.5% to 0.75% (August 2018). Expectations of a strengthening economy, solid employment levels, more consumer spending and the potential for wages to rise have all played a part in the decision.

While rising interest rates pose a challenge to property pricing, the Bank of England will likely tread cautiously to avoid negative effects on growth rates and consumption.

> "With more interest rate increases forecast, further yield compression is likely to be marginal, meaning logistics projects conceived with unrealistic financial models will find no headroom in tougher trading conditions."
>
> *Michael Hughes, Verdion*

London: loved from afar?

Real Estate Sector: What is your current view of the London real estate market?



The view that London real estate is over-valued has remained remarkably consistent for the last three years, with 70% agreeing in 2018, the same figure as in 2017. The real shift in sentiment took place between 2015, when 50% believed London was over-valued, and 2016, when the figure rose to 67%.

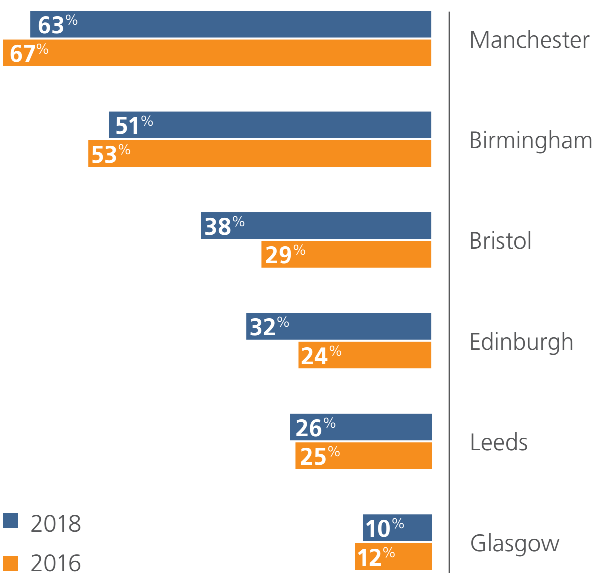
Despite this, City office investment volumes reached a record high in Q2 2018, with £3.6bn of stock traded over the course of the quarter according to CBRE. It wasn't surprising that overseas capital represented 82% of the investment total, with many domestic investors still deterred by pricing.

As well as continued activity from Hong Kong, investors from Singapore, Japan and South Korea have also been very active, a trend which is set to continue. Over the past 12 months CMS has advised on major deals for investors from across the wider region including Hanwha Life, Mitsubishi Estates, R&F Properties and Hao Tian to name but a few.

Asian players have also been very active in the logistics sector with major European investments by China Investment Corporation and Singapore's GIC. CMS recently advised Global Logistics Properties (GLP) on the UK aspects of its acquisition of Gazeley, a major European developer, investor and manager of logistics warehouses for US$2.8bn. Backed by Chinese private equity, Singapore-based GLP is a leading global provider of logistics solutions and is the largest warehouse operator in Asia.

Regional reshuffle?

Real Estate Sector: Of the 'big six' regional cities listed below, which do you think are particularly appealing as investment prospects?



Though Manchester remains comfortably in the top spot of regional cities with 63%, Bristol and Edinburgh have both made gains of 9% and 8% respectively since 2016.

There is a range of exciting projects which will continue to transform Manchester over the coming years. CMS is advising on three iconic schemes in the city: the Northern Gateway, a housing-led regeneration project, expected to generate more than £1bn of investment over the next 10 years; a joint venture to develop the 20 acre derelict Mayfield Depot area of Manchester in a 15 year project; and the £750m Circle Square scheme comprising grade A offices, an hotel, student accommodation and build-to-rent units.

Manchester's world-class airport also positions it as an important logistics hub for the whole of the North West. The Airport City scheme features Global Logistics, a prime site with major occupiers including DHL and Amazon, which is set for further expansion.

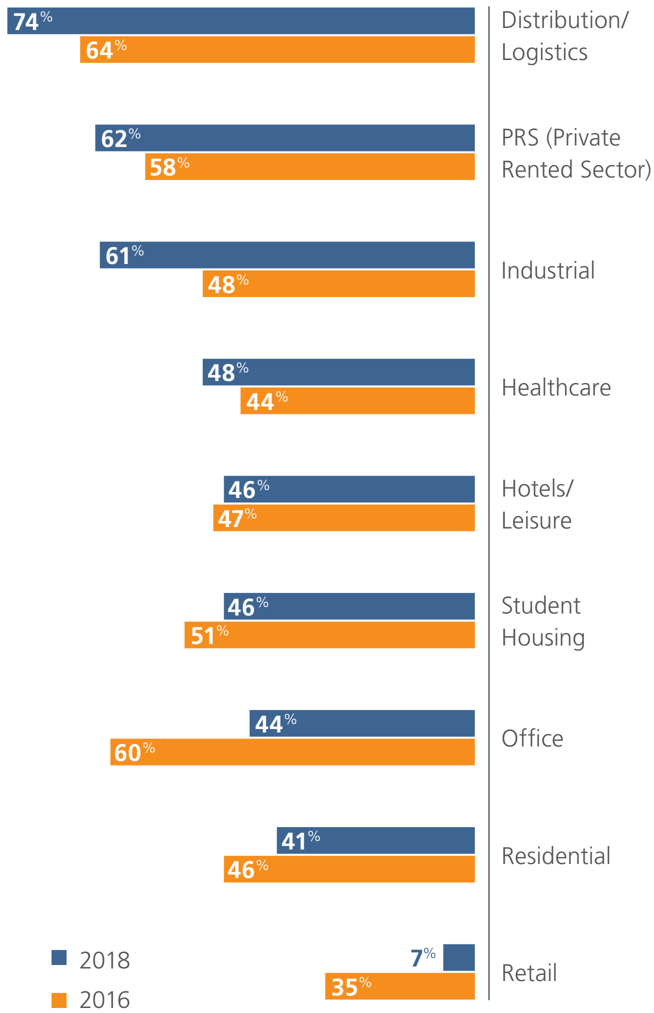
The Edinburgh commercial property market continues to perform well with office space in prime locations in short supply, which coupled with a trend towards conversion of town houses back to residential and hotel use is leading to falling vacancy rates. CMS continues to advise TH Real Estate on the flagship Edinburgh St. James development spanning 1.7m square feet and comprising prime retail, leisure, a hotel and new homes, set to further enhance the Scottish capital's appeal.

Bristol continues to make a strong showing and is gaining a growing reputation as a digital leader in the UK. In Huwaei's Smart Cities Index 2017, Bristol leapfrogged London to be ranked top of the table thanks to initiatives like 'Bristol is Open', its dedicated smart city operations centre and connectivity testbeds. Furthermore, the ongoing development of the area surrounding Temple Meads station is enhancing the city's gateway offering, complemented by the electrification of the Great Western mainline.

> "In the UK, Greater London is an obvious focal point alongside the Midlands, which has been the traditional logistics hub, and Manchester – all of which are locations that stand out due to the size of their populations and younger demographic."
>
> *Stephen Young, Goodman*

Attractive assets

Real Estate Sector: Please rate the following asset classes on their level of appeal.



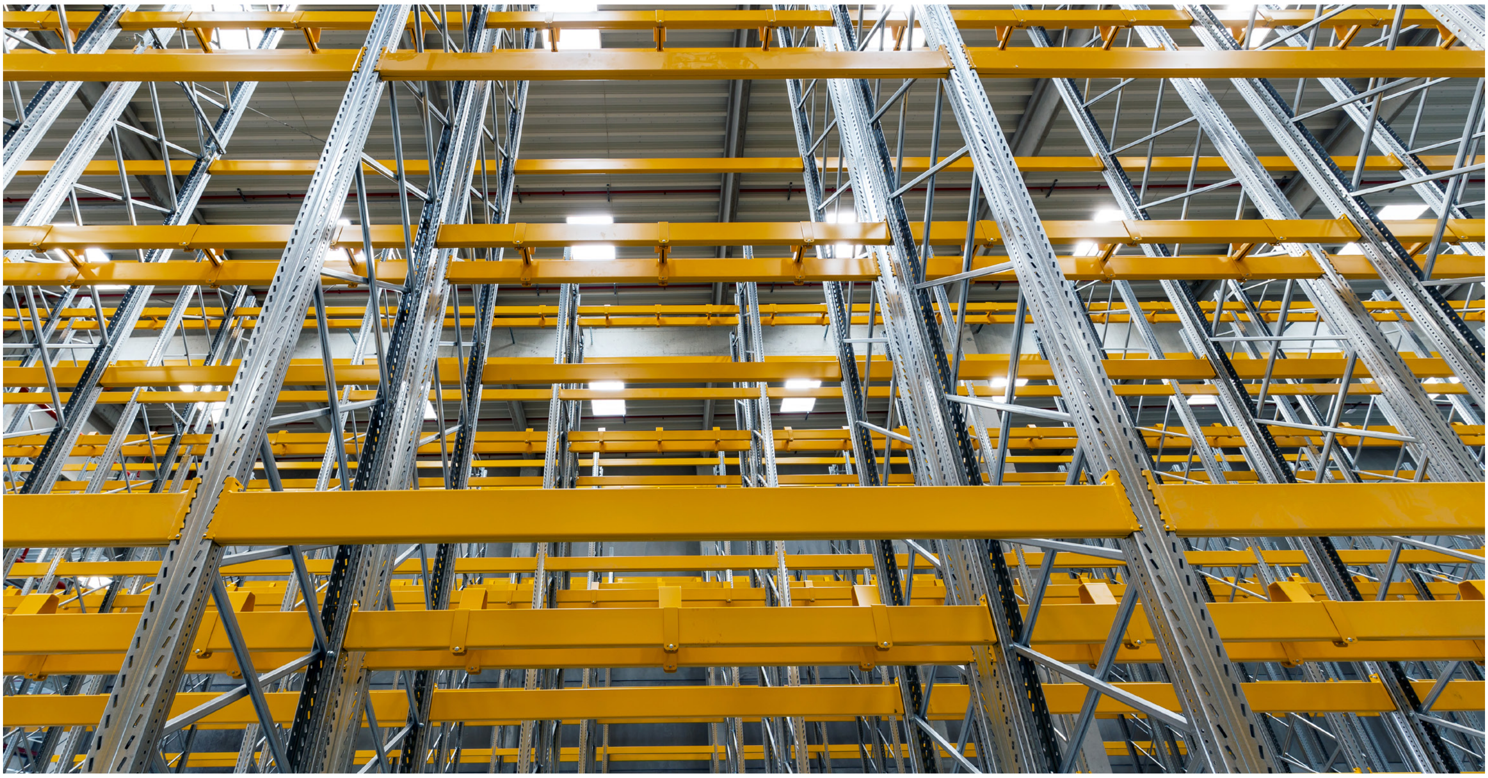
Two of the property market's great staples – retail and offices – have seen the sharpest fall in appeal to investors over the last three years.

The collapse of interest in retail is the most stark. Still accounting for up to half of most UK institutional investors' property portfolios, retail is only appealing to 7% of the real estate experts we polled, dropping from 35% in 2016.

The sharp decline in sentiment towards the retail sector can be dated back to Black Friday in November 2017, when the power of e-commerce truly resonated with the property sector. Add in subdued Christmas trading, the failure of a string of retailers in the first two quarters of 2018, the spread of company voluntary arrangements undermining the very nature of the UK commercial lease, even adverse weather in the form of snow from the `Beast from the East', followed by the summer's extended heatwaves, and retail property has been under huge strain. Britain's biggest landlords are now seeing 10% plus falls in the value of even prime retail assets.

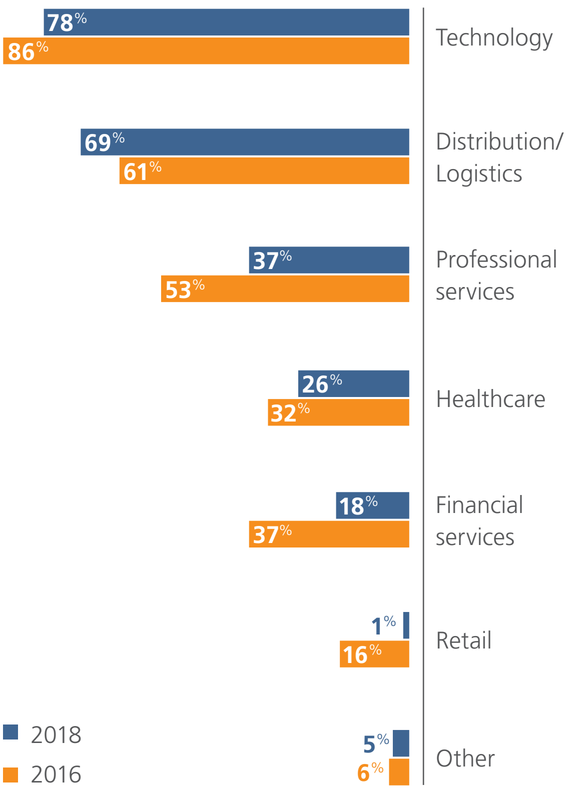
At the inverse of this trend is the rise in popularity of distribution and logistics property, which appeals to 74% of the real estate professionals we polled, with industrial property also appealing to 61% of those we polled. It is this sector that has been the beneficiary of the structural shift towards e-tailing, since online fulfilment requires about three times the warehousing space of traditional store-bound models.

In this context, investment in UK industrial property continued its upward trajectory throughout 2017, with the £11bn invested representing an increase of 80% on 2016 levels, according to Knight Frank.



Keeping occupied

Real Estate Sector: Where do you see occupier demand coming from in the next two years?



The uptick in investor interest in the logistics sector is matched by high anticipated occupier demand, with logistics gaining on technology as the hottest occupational sector, chosen by 69% of respondents, showing an increase of 8% on 2016.

Expected occupier demand for retail has fallen back to just 1% from 16% in 2016. There is a growing acceptance that for some ailing stores in secondary locations the decline may be terminal. The shops that will remain are those that are going through a period of reinvention to offer enhanced shopper experiences and act more as showrooms than sales hubs.

Despite an understandable focus on the negatives of retail closures, it is worth noting that there are several great British success stories in the online retail world, notably Ocado and ASOS.

Ocado announced a deal in November 2017 to supply its software to French giant Groupe Casino and build an automated warehouse for them. Future growth plans focus on becoming a provider of technology to other grocery retailers, including warehouse robots, shopping websites and delivery scheduling software.

Aspiring to be the world's number-one online shopping destination for fashion-loving 20-somethings, ASOS is also enjoying remarkable growth in Europe, Asia and the US. It is reportedly spending £241m on infrastructure for warehousing and logistics. CMS provided advice to ASOS on its new purpose designed and built fulfilment centre, known as Eurohub 2, which has more than doubled stockholding capacity in continental Europe and almost quadrupled throughput capacity.

> “UK big box logistics is set for ongoing strong demand. The structural drivers are huge factors in its favour. I always say, ‘the internet trumps Brexit’, because that is what we have seen since the EU Referendum in 2016.”

Camden Town Brewery, SEGRO

SEGRO

David Sleath, Chief Executive

Tell us about your company
SEGRO is a FTSE-100 warehouse owner and developer with activities across the United Kingdom and Continental Europe, including France, Germany, Poland, Italy and Spain. We are focused on both big boxes and urban distribution facilities increasingly used for last mile delivery. We have a stock market capitalisation of more than £6.5bn and assets under management of £10bn.

We have more than 10 million square feet of development under construction across more than 50 projects, with a total development cost of c.£750m.

Particular successes so far in 2018 have included SEGRO Logistics Park East Midlands Gateway, a rail connected ‘inland port’, adjacent to the M1 and East Midlands Airport where we secured 2.5 million square feet of pre-lettings at East Midlands Gateway in the first six months of 2018.

How are you seeing demand for big box warehouse property?
Big box logistics demand is set to remain supportive in the markets we serve across the UK and Continental Europe. The structural drivers are huge factors – ‘the internet trumps Brexit’ is the phrase I’ve used consistently ever since the EU Referendum in 2016.

In the big box market we are seeing continued major investments from e-commerce specialists like Amazon and Shop Direct, but we are also seeing traditional retailers such as M&S reconfiguring their supply chains and investing in automation to allow them to operate more efficiently.

If there was too much new supply of warehouse space being built, that would be a concern, and there certainly has been an increase over the past year, but for now demand and supply are well balanced.

How are you seeing demand for urban logistics warehouses?
In urban logistics the e-commerce factor is also important because the real battle between online and traditional retailers is being fought over speed and quality of service and delivery.

Amazon Prime is now operating from one of our buildings in Park Royal, West London, and they are delivering within the hour. Similarly, we have recently leased space to Ocado, John Lewis, DPD and DHL, all needing to be located close to the ‘chimney pots’.

But urban warehouses are also supporting a large and growing population which has needs beyond shopping. We house food suppliers serving the West End, we have data centres powering social media and we have studios, film and theatre prop companies serving the entertainment industry.

Some of this is new, incremental demand associated with urban population growth and increased online retailing, and some of it is driven by displacement. Many customers for London warehouses have had to leave their previous homes because mixed-use schemes such as Nine Elms, Stratford, Shepherd's Bush and King's Cross have taken land previously used by industrial occupiers.

What is your view on industrial land supply?
SEGRO launched a report, `Keep London Working', in partnership with Turley in 2017, which revealed that London industrial land has been re-zoned at an alarming rate.

If you turn every piece of brownfield land into homes or flats you may solve the housing crisis – but there won't be any jobs for the people living there to do and London won't have the industrial space to make the city function properly.

There needs to be an understanding that industrial and employment land doesn't just need to be protected, it needs to be enhanced. E-commerce, modern lifestyles and urbanisation mean this issue just isn't going to go away.

How do you see industrial rents moving?
London has been delivering 5-10% of annual rental growth, and whilst that level of growth may not be sustainable, I am confident we will continue to see mid-single digit rental growth in London in the years to come.

Top rents in London warehouses are now £15 to £16 per square foot with some examples well above that. £20 per square foot could soon become the established norm in prime buildings in West London. There is most scope for growth in East London and North London, where there is strong demand and rents are coming off a lower base.

Outside London and the South East, in the big box market rental growth is likely to be more modest due to greater land availability and the ability of developers to bring new supply through.

Which innovations do you see influencing the warehouse sector?
We have done a lot of work exploring the impact of autonomous vehicles and drones, and I think that for now the implications in the UK are limited.

But in bigger countries like the United States and Australia I could foresee, within a few years, convoys of driverless vehicles led by a manned pilot truck at the front for long haul journeys through unpopulated areas.

Drones are even further away as an idea – there are just too many parcels being delivered every day to foresee the skies being filled with these deliveries. And there are serious technical and regulatory reasons why drones will never be used as a mainstream delivery vehicle in densely populated urban centres.

But I can see very small, high value and light parcels – such as emergency medical supplies – being delivered by drones in hard to reach locations.

The big changes, in my view, will be increased warehouse automation for big boxes and the growth in electric vehicles in urban locations. EVs are much more imminent because the pressure on air quality will only grow as deliveries increase. We know several customers are trialing a range of electric vehicles for last mile delivery. With EVs, battery limitations will mean that urban warehouses will need to be very close to the final delivery point.

How much further can e-commerce go?
Everything in the modern lifestyle is geared towards further growth in e-commerce. Technology enhancements and improvements in online platforms are making it increasingly easy to buy online. If you think of millennials they have little interest in spending their valuable leisure time physically travelling to go out buying products that they can order on line whilst travelling to/from work and have delivered 'free' at a time and place of their choice.

E-commerce penetration is now averaging approximately 17% of UK shopping but it's continuing to steal market share. I don't think the ratio is going to be 17% online and 83% traditional shops in five or ten years' time. It's only going to go in one direction.

What leadership qualities do people need in today's warehouse sector?
A lot of surveyors have been trained to focus on the deal – be it a leasing transaction or an asset purchase. At SEGRO we are encouraging our teams to look towards the horizon, and examine what will be happening years down the line. Having an interest and an understanding of the changes likely to impact our customers' businesses in five, ten or more years' time is a vital skill today. What will be the impact of technology, will space be leased in the future or be supplied as part of a package of services – thinking about these types of issue will be increasingly important – and not just for the leaders!

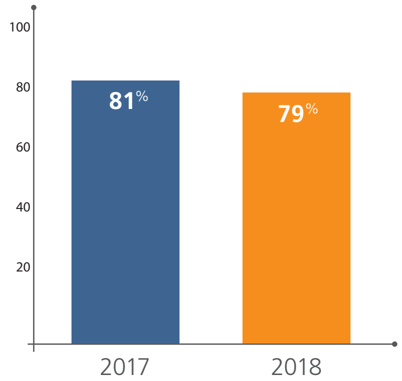
Ten years ago the warehouse sector was on the wrong end of the decline in western manufacturing.

Now it is on the right end of a fundamental transformation created by the digital age. Where will it be in another ten years' time?

Pandora's box? Brexit impact

Still feeling stuck?

Real Estate Sector: Do you consider that the uncertainty in British politics is having an adverse impact on your organisation? % Agree



A striking 79% of real estate sector respondents agree that uncertainty in British politics is having an adverse effect, falling back just 2% from 2017. The continued frustration is clear: two years on from the EU Referendum, a solution giving businesses the certainty they need is no closer to hand.

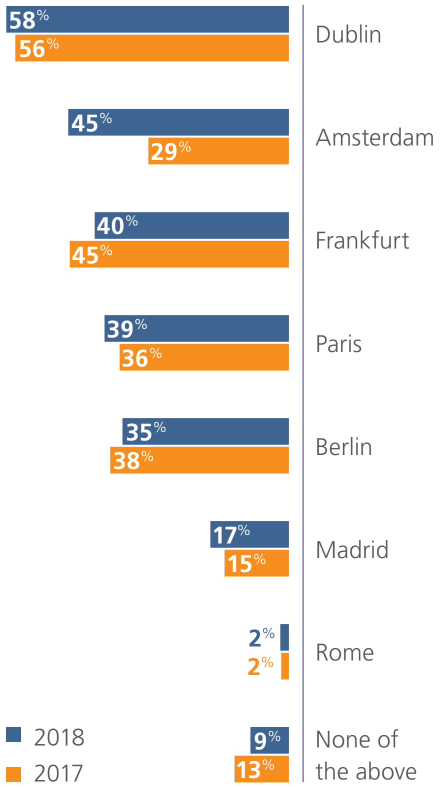
On top of this, anaemic UK GDP growth compared with other advanced countries adds to the feeling that Britain is currently in the slow lane, with politicians overwhelmed with the Brexit debate unable to improve the framework for businesses in other areas.

Brexit leaves a nagging doubt that overseas organisations' expansion plans will be increasingly diverted towards continental Europe.

> "Brexit is also now taking its toll on occupier sentiment. This disconnect has resulted in some market players marginalising leasing risk on speculative development, which we think is a mistake."
>
> *Jeremy Greenland, PLP*

Looking further afield

Real Estate Sector: Which of the following European cities do you think are particularly appealing as investment prospects in the next 12 months as a result of Brexit?

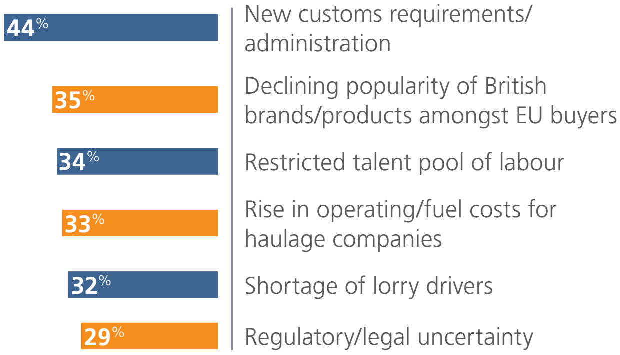


Dublin is the most appealing location amongst 58% of the investors we polled. With a relatively small office market, it is clear that much of the success is being driven by small but significant relocations from London. According to Knight Frank, Ireland was the fastest growing economy in Europe for a fourth consecutive year in 2017, as the economy expanded by 7.3%. Office take-up reached 3.6m square feet in 2017, the highest level ever.

In a major shift from 2017, Amsterdam has overtaken Frankfurt as the second most popular choice and its position as a key logistics hub no doubt plays a part in this. Amsterdam is home to one of Europe's busiest airports and seaports. Benefitting from its gateway position, the Amsterdam port region tranships around 100m tonnes of cargo per year.

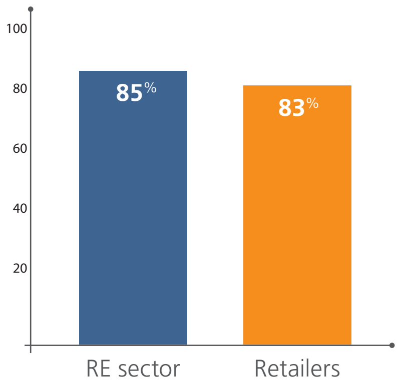
> “While land and buildings don’t cross frontiers, their contents and users do. The reimposition of EU immigration controls could make the UK less attractive for executives and investors, and may lessen the demand for the real estate they need to live and work.”
>
> *Simon Morris, Head of Financial Institutions, CMS*

Retailers: If the UK leaves the EU, which of the following do you think would most negatively impact your organisation?



Political priorities

Real Estate Sector and Retailers: Do you consider that securing a balanced UK/EU trade agreement is critical to the future of the UK logistics industry? % Agree



It comes as no surprise that both the retailers and real estate professionals we polled were overwhelmingly in agreement that the future health of the logistics industry depended upon securing a balanced trading agreement between the UK and EU.

The outcome of the negotiations will undoubtedly influence real estate decisions among many occupiers of warehouse space, notably those with European supply chains and that operate in regions with strong trading links with the EU.

It is unlikely that the EU will agree significant concessions in terms of the movement of goods and as a result it seems inevitable that customs controls in the UK will become tighter. This could lead to bottlenecks while goods are being processed, thus impairing all-important delivery speeds. This is clearly the number one concern of the retailers we polled at 44%.

Second most concerning is the declining popularity of British products. Brexit has done ‘Brand Britain’ no favours amongst EU buyers and the ‘Britain is open for business’ campaign reflects the government’s attempt to counteract this.

> 44% of retailers are concerned about new customs requirements.

Fuel prices are also of concern to 33% of retailers. The UK’s North Sea oil fields cannot meet the country’s needs and just over a quarter of all petroleum products used in the UK arrive through EU countries, so rising import costs are likely to have a big knock on effect.

Further concerns for the logistics industry relate to a shrinking talent pool and driver shortages. EU nationals make up around one-tenth of the UK’s commercial drivers and even though Brexit negotiations are ongoing, some EU citizens are already considering employment in countries where they can be more certain of their future rights. The Freight Transport Association has expressed concerns the sector will lose over 43,000 EU nationals who are drivers, with disastrous consequences for UK supply chains. In view of this, there is growing impetus to implement driverless technology, which we explore on page 34.

DCAM Amsterdam Park, Delin Capital Asset Management

Delin Capital Asset Management

Ekaterina Avdonina, Managing Director

Tell us about your company
We started Delin in 2012 and have built up a portfolio of EUR 1bn of assets under management. We are aiming to create a company with EUR 5bn of assets.

We were fortunate enough to set up a company with a fresh vision and a clean sheet of paper, unencumbered by any baggage from the Global Financial Crisis, which had hit so many warehouse and industrial developers.

Why did you choose to start a warehouse focused group?
Over the past decade we had become fascinated by online retail and the trends coming to the UK and Europe from the United States. These structural changes in consumer spending had huge implications for global trade, European supply chains and manufacturing. We're pleased we got into the logistics sector ahead of the pack.

How has your strategy evolved since 2012?
We started with a core-plus portfolio of income-producing assets, but moved into development in 2016 when standing investments began to look expensive. We set a new direction, going up the risk curve by buying value-add investments. Altogether, we now have a 500,000 square metre development programme and a portfolio of EUR 1bn in completed assets.

We operate from Spain, Benelux and the United Kingdom. We want to be big and deep in the markets in which we operate, though our ambition is certainly to become pan-European. The next frontier for us is Germany, followed by France.

Encouragingly the Eurozone is still growing at a healthy rate. Germany and the Netherlands are gateway markets with a high level of stock per capita.

It is interesting to contrast Spain with the UK. Spain is a recovery market where there's been a lack of development activity and poor quality stock. It is here that e-commerce is seeing its fastest growth.

How do you see demand for warehouse space in the UK?
This all hinges on e-commerce penetration. In the UK it's between 17% and 20% so demand has been incredibly strong, far in excess of the 10-year averages calculated by agents.

With 30-40% of occupier demand related to online, the key question is whether online retailers will grow their space further. Some analysts believe the e-commerce penetration driving warehouse demand will peak at 22% in the UK, others think it could go higher.

It is possible that warehouse rents and shop rents may begin to converge in future and this could reshape the market again. The high street and malls are not dead; they are reinventing themselves. Shops are becoming showrooms and advertising channels for brands. It's interesting to see that pure play online retailers are now opening stores too.

How does continental Europe compare?
Will every European country reach the same level of e-commerce penetration as the UK? There's no single answer, but there is a trajectory of growth.

In general, the Germans and Dutch tend to be bigger savers than people in Britain, so this has an impact.

The success of e-commerce in the UK is a real phenomenon. One theory of what's driving this is the fact the British people tend to commute further to get to work than in other European countries. They are well off but time-poor, which incentivises the convenience of shopping online.

There is a question mark about what will happen to overall UK retail spending with Brexit looming, fluctuating exchange rates and rising inflation, but so far the UK has been resilient.

How will warehouses evolve in future?
What fascinates me most is the level of investment customers are making in their warehouses. Some are spending between EUR 30m and EUR 100m to innovate and stay ahead of the curve on digital sales. Online fashion and grocery retailers tend to be the most kitted out in terms of cutting edge robotics and automated pickers. In fact, Ocado is selling some of its technology solutions to US retailers.

At the same time, we also have sympathy with customers wanting shorter leases. Even though they have been investing heavily up front, it's also very hard for them to plan for the next 10 years at a time of such rapid change.

How are consumers shaping the market?
All retailers must respond to the 'want it now' culture. Typically, it is younger generations who are the most demanding. Having grown up with so much technology at their fingertips they are sophisticated and impatient shoppers.

That said, the supply chain of the future won't be driven by the demands of the millennials or even Generation Z. The habits and behaviours of today's five-year-olds are what should be observed.

Amazon Prime can now do two hour delivery in London and will continue to push the boundaries.

> “What fascinates me most is the level of investment customers are making in their warehouses. Some are spending between EUR 30m and EUR 100m to innovate and stay ahead of the curve on digital sales.”

How will we see leases change?
We now live in a sharing economy and every aspect of real estate will be affected.

Just as WeWork has reshaped the office sector, warehouses will also become part of the sharing economy, with occupiers able to rent pallet space and racking space by the day or week.

How many Uber drivers are circling London with empty cars, when they could be doing the delivery job that vans are now doing? It won't be long until they move into logistics.

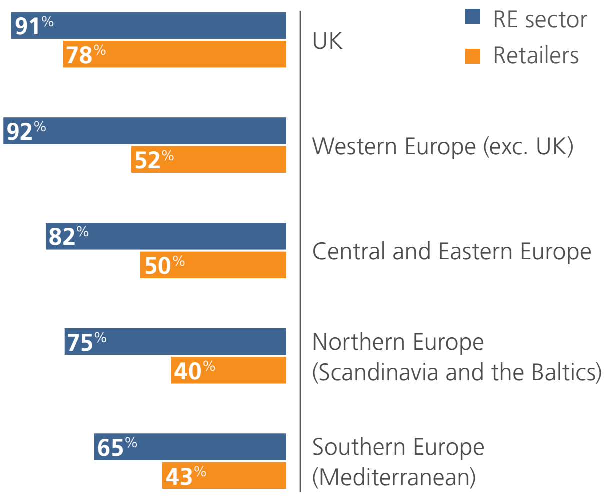
In addition to the sharing economy, I also think that blockchain will affect the biggest changes in warehouses and logistics in the next 10 years. Blockchain is set to overhaul the supply chain, helping with the tracking of parcels and returns efficiency, creating huge savings. It's an exciting time to be in the logistics sector.

Where-houses: location strategies across Europe

At a macro European level, the logistics sector continues to go from strength to strength. Industrial and logistics investment in Europe stood at EUR 40bn for 2017, up 62% on 2016, according to BNP Paribas Real Estate.

Overall demand remains strong, with average vacancy rates sitting at just 5% as the shift to online retailing gathers pace across Europe, set against the backdrop of economic recovery across the continent. The UK and Germany were the most active markets, with the Netherlands and Italy showing the highest growth compared to 2016 investment levels.

Real Estate Sector and Retailers: Where do you expect demand for warehouse and logistics space to increase over the next two years?



There is an imbalance in expectations in terms of short-term demand between the property experts we polled and the retailers who sit at the interface with customers and the coalface of the e-commerce revolution.

91% of real estate professionals believe demand will increase in the UK, compared to 78% of retailers. This drops to 52% when retailers consider the change in demand in Western Europe (exc. UK).

There are signs of over-optimism among some real estate professionals. So far, online retail has mainly just been filling the void left by the retreat or inertia of traditional players.

It is worth noting that the markets across Europe for retail vary not just because of their economic fundamentals and being at different stages of recovery from the global financial crisis. There are also cultural differences in shopping and saving habits and this plays out in terms of e-commerce penetration.

To date, not all European markets have seen firm evidence of rental growth for prime distribution assets, but the expectation is that growth may pick up and broaden over the coming years with big cities such as Paris, London, Amsterdam and Milan outperforming as occupiers compete for the best-located stock.

Turning to the UK specifically, after an exceptionally strong Q1 2018, occupier demand for logistics space returned to more normal levels in Q2 2018, with leasing volumes totalling 6.3m square feet, according to Cushman & Wakefield. Take-up by pure-play occupiers accounted for just less than 50% of take-up in Q2, highlighting once again the contribution of e-commerce to the sector. The geographical spread of take-up by this occupier group, extending to regions such as the North East, which had seen little activity so far by e-commerce players, is evidence of an increasingly encompassing trend.

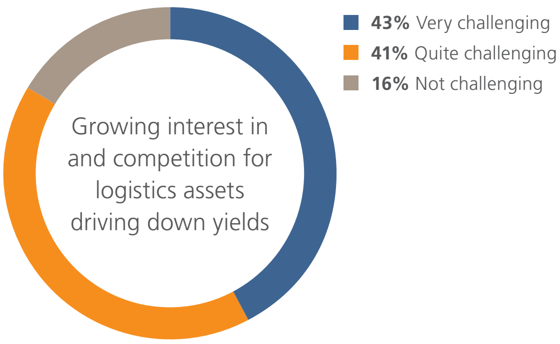
"In most countries across continental Europe e-commerce penetration remains below 10% today, with some major economies still in the low to mid-single digits: Italy for example sits at 6%, whereas China by contrast is approximately 30%, so you can see the meaningful potential for continued growth."

Peter Krause, Blackstone

On the supply side, the widespread shortage of good quality space in the UK has prompted developers to build more speculatively, with c8.7m square feet of space due for completion in 2018, just below the previous peak of 9.3m square feet in 2016, according to Cushman & Wakefield.

Despite the numbers looking strong, some of the leading logistics players we interviewed expressed some concern about there being over-exuberance in the sector.

Real Estate Sector: How challenging do you think the following will be for the UK logistics industry to overcome over the next two years?



84% of the real estate professionals we surveyed also feel that growing competition for assets is leading to inflated prices, in turn impacting the yields that can be achieved.

The European logistics yield fell to 5.95% for the second quarter of 2018, according to Cushman & Wakefield. It is the first time it has fallen below 6% since Cushman's began tracking the sector in 1992.

Finding value will be an increasing problem for investors. Rising demand for warehouses has been priced into stocks, which typically now trade at a premium to net asset values.

> "We are concerned at the moment that a disconnect exists between the very bullish investment market and the occupational market in the UK. We are seeing record-breaking land prices across the country but at the same time a different retailer is closing stores or entering voluntary administration every week."
>
> *Jeremy Greenland, PLP*

Waitrose, Coulsdon, PLP

PLP

Jeremy Greenland,
Chief Executive Officer

Tell us about your company
PLP (Peel Logistics Property) is a specialist owner, developer and manager of UK logistics and industrial real estate. The business is owned by Peel Group, Macquarie Capital, Ivanhoe Cambridge and the senior management team.

While the company is headquartered in London, we focus on the prime logistics markets across the UK. We have a strong foothold in the prime North West and Yorkshire markets which we believe continue to deliver attractive risk-adjusted returns.

We also have a significant advantage in these markets given our close relationship with Peel Group (one of two founding partners) and our exclusivity arrangement over their logistics and industrial-focused strategic land bank. The key focus of the PLP platform is to partner with institutional capital to develop and retain high quality logistics assets across the UK. In-line with this strategy, PLP raised its first managed venture ('PLP UK Logistics Venture') in November 2017.

The venture has a develop-to-core strategy and has been capitalised with £400m from Ivanhoe Cambridge alongside a £100m co-investment from PLP.

PLP currently has £150m of assets under management with further investment capacity in its first venture of over £850m.

How are you different from other industrial property companies?

We are partner focused. Our aim is to be a multi-client, multi-strategy, multi-venture platform that delivers attractive risk-adjusted returns. PLP's first venture is a medium to long-term play with a develop-to-core strategy, which contrasts with a large number of the short-term trader/developer players in the market.

We are also more 'hands-on' than most of our competitors. At PLP we love a challenge (whether it's planning, environmental, design or delivery) and we are always on the lookout for an opportunity to unlock value across the development and asset life-cycle.

Finally, we take a holistic approach to the UK market as we believe that there is significant development value to be unlocked in prime areas outside of the Midlands and the London/South East markets.

How does the North compare with the Midlands and the South as a logistics property market?

Occupier-driven changes mean that the market is now arguably less focused on the 'Golden Triangle' (spanning from Northamptonshire up the M1 to East Midlands Airport, and West as far as the Tamworth area). There are many reasons for this, but one of the drivers over the last ten years has been the increase in retailers taking up space at the expense of third party logistics (3PL) operators. 3PL operators have traditionally wanted to be in the 'Golden Triangle' to give them the best possible access to motorway networks and full UK reach, but retailers have shifted their requirements towards a focus on proximity to the UK's major urban conurbations, closer to their customers.

With extensive experience in all of the UK's largest urban conurbation markets, PLP expects to continue to benefit from this trend.

"3PL operators have traditionally wanted to be in the 'Golden Triangle' to give them the best possible access to motorway networks and full UK reach, but retailers have shifted their requirements towards a focus on proximity to the UK's major urban conurbations, closer to their customers."

What is your current view of the UK logistics property market?

The long-term dynamics of the market are great; we believe that the e-commerce trend is here to stay, and there is still constrained supply in most markets. However, we are concerned at the moment that a disconnect exists between the very bullish investment market and the occupational market in the UK. We are seeing record-breaking land prices across the country but at the same time a different retailer is closing stores or entering voluntary administration every week (44 retail administrations last year versus 54 at the peak of the financial crisis in 2008). Pure online retailers have to an extent filled the gap left by lower acquisition rates from bricks and mortar retailers, but overall Grade A take-up is no greater than an average year. Brexit is also now taking its toll on occupier sentiment. This disconnect has resulted in some market players marginalising leasing risk on speculative development, which we think is a mistake.

The senior team at PLP are sector specialists with extensive through-the-cycle experience. Given the long-term attitude of our capital partners, we are being very measured in our investment approach and we are not just buying for the sake of it. We're not here to chase the market!

What future innovations do you think will impact on the sector?

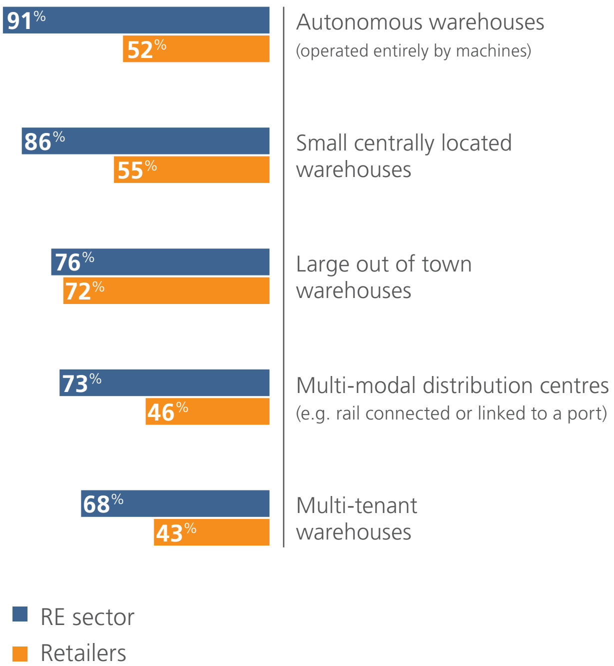
There has been a lot of discussion about drones, but these have yet to have a major impact on the logistics world. Increased mechanisation will continue as technology advances and costs decrease, especially with homogenous products. But I think it's solar and battery technology that could have the most radical impact on both the cost of energy and movement of goods. Exponential growth in battery technology is predicted during the next 15 years and some foresee advances comparable to the microchip in the 1980s and 1990s.

Cheap energy and clean, driverless vehicles would have a major impact on both the environment and the way supply chains work in the future, which would naturally feed through to logistics real estate dynamics.

In the near future, I think we're likely to see more bespoke development, more intensive use of vertical warehouse space by occupiers, and more large, flexible multi-user warehouse designs appearing in the UK.

Sizing up the options: types of logistics space

Real Estate Sector and Retailers: In which types of logistics space do you expect increased demand over the next two years?



Real estate experts are more optimistic overall than retailers about the scope for increased demand for warehouse space in all its forms. This perhaps reflects the excitement about logistics property in the market currently, which is not fully matched by retailer sentiment.

Autonomous warehouses

91% of real estate professionals think demand for autonomous warehouses is set to increase, compared to 52% of retailers.

Perhaps explaining this mismatch is the enormous cost attached to creating a fully mechanised warehouse, which sits predominantly with the occupier. Given current tough trading conditions, not all retailers are prepared to make this kind of investment. Furthermore, automation also makes it difficult to deal with product changes or have the flexibility to move location.

The e-commerce players are investing most heavily in automation. For instance, Ocado is reinventing how warehousing should work for grocery logistics. Impressively, they can pick a 50-item grocery order in under five minutes using robotics in their warehouses.

Multi-modal distribution centres

Though the second least popular amongst the retailers we polled, activity in the European industrial and logistics markets shows there is increasing interest in multi-modal logistics. But progress remains slow due to reliance on the development of new infrastructure, which is essential to boost the competitiveness of this type of freight relative to road-only transport.

Utilising waterways and railways to complement road transportation helps reduce traffic congestion and carbon footprint, so this is likely to be driven up the agenda as environmental pressure grows on the logistics industry.

There are numerous multi-modal centres in operation in the UK, with major ones including Dirft, the Daventry International Rail Freight Terminal near Rugby and iPort near Doncaster. Planning has recently been approved for Mossend International Railfreight Park, which will be the largest in Scotland.

Large out-of-town warehouses

Large out-of-town warehouses are almost equally as popular amongst both the real estate sector and retailers with 76% and 72% respectively.

In the 'big box' market (typically distribution units of 100,000 square foot and over) retailers are the most active source of demand, acquiring around 45% of all industrial units so far in 2018, according to Radius Data Exchange.

In the rankings of the largest warehouses globally, three of the top ten are in the UK: Morrisons Distribution Centre, Sittingbourne; Shaw National Distribution Centre, Lancashire; and the Amazon Fulfilment Centre, Dunfermline, which all come in at around a million square feet.

In early 2018, Lidl announced its plans to build the UK's largest warehouse near Luton on a 58-acre site, which will be more than double the size of any other Lidl UK warehouse and will create up to 1,000 new jobs.

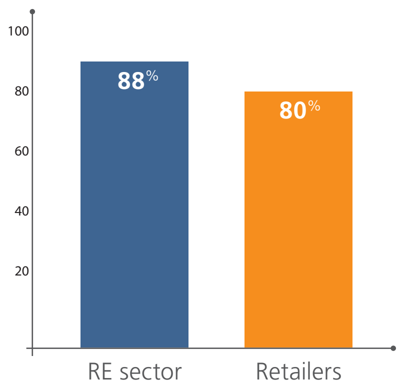
However, it is not in the 'super shed' market that demand is growing most significantly. The next 'space race' for industrial stock is set to be focused around urban locations. Radius Data Exchange shows that units of up to 45,000 square feet have been taken up with greater intensity, growing from 54% to 61% of overall activity in terms of square footage let.

Small, centrally located warehouses

86% of real estate professionals and 55% of retailers agree that there will be increased demand for small, centrally located warehouses. Their popularity is being driven by retailers' increasing requirement for satellite hubs to fulfil online retail orders as quickly as possible.

So called 'urban logistics' warehouses command a high premium because of their location and the limited stock available. Therefore, the mismatch in views in our poll (a difference of 31%) may be explained by the fact that not all retailers are prepared to or have the resources to pay higher rents at present. E-commerce retailers, who tend to compete more fiercely on delivery times, are driving demand in this space.

Real Estate Sector and Retailers: Over the next two years, do you consider that warehouses will need to be extended vertically to meet future demand in space constrained cities? % Agree



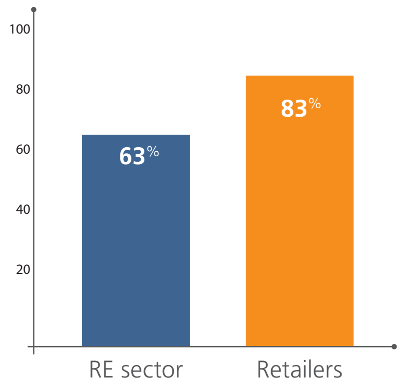
Since land is so scarce and expensive near towns and cities, the vast majority of both the real estate professionals and retailers think it is inevitable warehouses will have to become taller to accommodate demand.

Densification in the form of multi-storey warehousing starts to look attractive in constrained markets and in Asia, in particular, such facilities are more common. It is rumoured that Amazon is currently looking at sites to build the UK's first four-storey facility.

Multi-tenant warehouses

For multi-storey to be successful, occupiers would need to embrace the idea of multi-tenant warehouses. However, 63% of real estate professionals and a massive 83% of retailers see resistance to collocation in warehouse space as being a challenge.

Real Estate Sector and Retailers: Over the next two years, do you consider retailers being resistant to sharing warehouse space to be a challenge? % Agree



At this stage, multi-tenant warehouses hold more appeal to third party logistics operators and smaller retailers who need space 'on demand' and at varying rates. The bigger players tend to want a more bespoke fit-out and are more concerned about security and brand protection.

However, in the future shared warehousing could become much more of a necessity as space constraints take further hold. A major online fashion retailer we spoke to commented, '*this would make a lot of sense from a sustainability point of view and become yet another aspect of today's growing emphasis on the shared economy.*'

> "In land-constrained locations such as Japan, Hong Kong and China we own and develop multi-storey facilities and we expect to see an increase in multi-storey buildings being developed here in the UK – though primarily in Central London where land supply is heavily constrained."
>
> *Stephen Young, Goodman*

> “I loathe the word ‘sheds’ as a description of what we develop. It has become a much more sophisticated product than even five years ago. This is now a very technical business.”

iPort, Doncaster

Verdion

Michael Hughes,
Chief Executive Officer

Tell us about your company
We founded Verdion in 2010 with the ambition of being a truly pan-European warehouse developer – and that is what we have achieved today.

We now have offices in London, Düsseldorf, Frankfurt and Malmö, with German, Dutch, Swedish, Slovakian and British members of our team. They have worked across all the European geographies, and joined us from the likes of ProLogis, Goodman and Eurinpro.

To go pan-European was always our vision, firstly because the UK market was very subdued in 2010 and 2011 but more because that was clearly what our investor partners and occupier customers wanted. The market was perfect for a fresh, eager team with no legacy issues to go out and secure new business.

Where did your funding come from?
The Healthcare of Ontario Pension Plan (HOOPP) was looking to deploy capital across European countries into logistics development and wanted one strategic partner rather than multiple local partners. We now have the exclusive mandate for all HOOPP direct investments in European logistics property together with strong relationships with other international sources of capital.

Our portfolio’s value is now approximately EUR 1bn, comprising EUR 800m of completed income producing assets plus our land bank.

What has been your most prominent development in the UK?
Our stand-out development is iPort in Doncaster, a 337-acre multi-modal logistics hub, one of the most advanced in the country. It is connected to the M18 and also has its own rail freight terminal with direct access to the UK national rail network and to Europe via the Channel Tunnel and major UK ports.

We are managing the rail freight terminal ourselves, which is an industry first, and by the middle of 2019, we expect to run six trains a day.

Occupiers here so far are Amazon, CEVA, Fellowes and Lidl. We still have three million square feet of six million square feet at iPort to develop, but already we have created a thriving inland port and valuable piece of infrastructure.

We are committed to building more iPorts in continental Europe. Integrated, intermodal, interconnected and international are the defining principles of the iPort brand.

How do you see current demand for warehouse property in the UK?
Do I think occupier demand in the UK is going to continue as it has for the last few years? In short, no.

Occupier demand is cooling off. But at the same time supply (in both land and buildings) is increasing as investors and developers ramp up market activity. In the last five years the planning system has eased too, with local authorities being far more flexible and positive to accommodate logistics than say a decade ago, so boosting the land supply side.

Competition to buy development land remains fierce, however, driving up pricing, often to levels that in our opinion do not make commercial sense, based on unrealistic rent, take up and exit yield expectations. With more interest rate increases forecast, further yield compression is likely to be marginal, meaning logistics projects conceived with unrealistic financial models will find no headroom in tougher trading conditions.

Brexit is delaying some occupier leasing decisions. But Brexit is not the be-all and end-all for the logistics sector. We know that many occupiers are thinking Europe-wide or even globally and ultimately there will still be consumer demand for goods, even if transition is uncertain.

There are great opportunities across huge swathes of Europe and, although there is healthy and vigorous competition here too, it shows itself in different ways to the UK.

As an example, the UK market is closely linked to the control of land supply which is usually held in private hands by developers, whereas in Germany, municipalities take a far more proactive role in allocating their own land for major development, housing, mixed-use and industry, whether directly or through development agencies. This changes the market dynamic and creates a more open, competitive environment. Understanding local market conditions, regulatory processes and technical delivery is vital to finding success in different national markets.

How has warehouse development changed since Verdion was set up?
Without question the market has become more advanced and specialist. I loathe the word 'sheds' as a description of what we develop. It has become a much more sophisticated product than even five years ago. This is now a very technical business, our team being drawn from multiple disciplines, from technical engineers, construction management, capital markets and commercial property specialists. To be an old-fashioned dealmaker is no longer enough to succeed in this asset class.

The occupier market is much more diverse now and the impact of changing technology has been enormous. Logistics needs to serve so many different sectors and must respond well to the detailed needs of individual businesses. Take pharmaceuticals for example. Warehouses are achieving new standards in air tightness, humidity and temperature control, surfaces and structures designed and built with special protection for spills and hazardous goods. Security and safety is fundamental too when working with specialist areas like insulin storage.

Occupiers and their providers are looking at new ways of serving their customers. With the right warehousing, supply chain and security, medicines can be delivered direct to people's doors by outsourced providers, cutting out the need for the sick to leave their homes and go to retail outlets.

What do your customers want now?
The idea of a 'standardised' ambient warehouse as the primary and preferred developed investment product is fast becoming outdated. Occupiers either want something very quickly – which is where the speculative market comes in, or they need something tailored precisely to their requirements. One specification can't achieve both these things.

That is where the built-to-suit (BTS) market comes in. This is what most large occupiers require and where Verdion has longstanding expertise. The most important thing is to truly understand the occupier's operational needs and from that understanding design and execute exactly the right real estate solution. Speed of delivery is always critical and goes hand in hand with the technical knowledge needed to deliver complex projects.

Flexibility is the key and today this is far removed from the past debates on the merits of adding mezzanine floors, for example. Today we are focused on the tech – from temperature and humidity-controlled areas, to the design for robotics and conveyors; all things occupiers need to make their operations more efficient and how we can best deliver a facility to suit them.

'Institutional standards' is an old-fashioned concept too. Global occupiers don't want warehouses developed to outmoded UK ideas. In any case there is no handbook or other written format to meet the highest technical standards. We've developed our own specification using the best of our Europe-wide experience and update it regularly as our work for occupiers evolves.

Any future predictions?
Drones are over-hyped. We can't imagine them being used on a large scale, because aviation laws are too strict, and the UK and most of Europe is too densely populated to accommodate the associated risk.

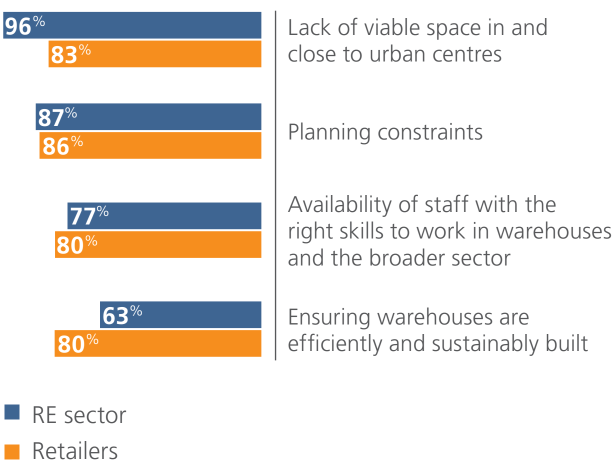
In response to the need for more urban logistics space, we will see logistics integrated into new city centre mixed-use developments as a necessity of urban planning. This will include underground storage in cities – and other areas where space can be repurposed. We are already seeing some of the large car parks from the 1950s and 1960s being used as storage hubs, especially as traffic restrictions get tighter. Many offices have surplus space in basement car parks that could be put to better use.

What's clear is this asset class is not what it was. New solutions and approaches are needed across the board for players in this sphere to succeed.

Boxed in?
Challenges facing the logistics sector

Despite there being strong performance indicators and positive long-term trends shaping demand, logistics property nevertheless remains a sector facing varied challenges.

Real Estate Sector and Retailers: What do you consider to be the biggest challenge for the UK logistics industry to overcome over the next two years?



Space
Most challenging of all, as agreed by 96% of real estate professionals and 83% of retailers, is the lack of space for 'urban logistics' warehousing. This issue is closely linked to another key challenge: planning constraints.

In most major cities, industrial land is rapidly being lost as it is re-zoned for other uses. With land values rising and the housing crisis high on the political agenda, many developers understandably prefer residential development over industrial in central locations.

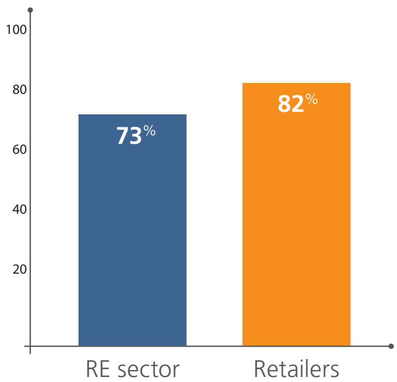
> "In London for example, there has been an intensification of positive supply/demand dynamics with the conversion of industrial land, notably in places like Battersea, to residential. Rents are moving up significantly as a result."
>
> *Peter Krause, Blackstone*

Recent research by SEGRO found that the loss of industrial land in London was happening three times as fast as had been predicted five years ago. However, as London's population continues to expand, the collective demand for goods and services is also mounting.

> "There needs to be an understanding that industrial and employment land doesn't just need to be protected, it needs to be enhanced. E-commerce, modern lifestyles and urbanisation mean this issue just isn't going to go away."
>
> *David Sleath, SEGRO*

73% of real estate professionals and 82% of retailers agree that more land needs to be made available for warehouse and logistics use.

Real Estate Sector and Retailers: Do you consider that more land needs to be made available for warehouse and logistic use? % Agree



In addition, 75% of the retailers we polled think all new housing developments should also have an allocation for logistics space. However, persuading developers and local authorities to create communities and logistics centres side-by-side is an uphill battle.

Staffing

One factor in this is the negative perceptions of the types of job created by the logistics and industrial sectors. 77% of real estate professionals and 80% of retailers cite worker shortages in the logistics sector as being a key challenge and perceptions about low skilled and poorly paid jobs are not helping. In many ways, warehouse jobs fill some important gaps in the employment market. They are ideal for people in transition, such as students and older people stepping back from full-time work.

Particularly acute are UK driver shortages, where 45,000 vacancies need to be filled. The role of a delivery driver is changing in the digital age. Without the interface of stores, there is an increasingly important relationship between driver and customer, so we may see an upskilling of drivers in customer service and sales.

Sustainability

Another key challenge is linked to the efficiency and sustainability of warehouse buildings. Interestingly, the real estate professionals we polled underestimate its significance relative to the retailers with 63% and 80% respectively. Retailers are perhaps more acutely aware of how their green credentials impact their overall brand.

There is a widespread view that big boxes impose upon picturesque countryside, destroy natural habitats and cause pollution. Local resistance has recently led to planning applications for extensions at some facilities being denied. Therefore, efforts are being made to make warehouses blend into their surroundings better.

For example, near Bridgwater in Somerset, a huge Morrisons distribution centre is clad in horizontal strips in shades of green to merge better into the landscape. And Gazeley have planted over a million trees to surround their facility in Lutterworth, creating a publicly accessible wood with a wildlife-rich fishing lake.

When it comes to the inter-relationship between warehouses and the environment, Nike's European Logistics Campus in Belgium is a pioneer. It uses 100% renewable energy and the facility is fed by canals, meaning 99% of inbound containers arrive by water, not road, saving 14,000 lorry journeys a year.

However, creating such expansive green campuses is often not feasible for warehousing close to urban areas. So if warehouses cannot blend in, could a solution be for them to be hidden altogether?

Subterranean

In a number of Europe's cities, warehouses are being set up in underground parking complexes. Functioning as cross docking centres, these 'virtual warehouses' are used by UPS for example to transfer goods from vans to fleets of electric bicycles.

Thinking even bigger, there are examples in the US of the creation of subterranean sheds. In Kansas City, an estimated 10% of commercial space is underground in a 5m square metre, manmade limestone cave, making it the largest underground storage space in the world.

Closer to home, commercial document storage company, Deepstore, uses a 200 million metre cubed salt mine in Cheshire to store over 36 linear kilometres of records for the National Archives.

Recently, plans have been approved to create a 175,000 square metre underground logistics space near to Heathrow Airport where the gravel is due to be extracted for use as aggregate in concrete. Savills estimates that around 50 new occupiers are looking for space in this area, so the demand is clearly there.

However, given the significant cost attached to creating underground facilities, these are likely to remain largely as one-offs when there are factors that make them work in a local context.

Much more likely amongst the alternative options currently on the table is re-purposing other assets. Reportedly, Amazon has been looking at buying 42 stores Homebase is disposing of following its company voluntary arrangement. Shops to warehouses makes sense given the size and location of some retail park units. With Toys R Us, Mothercare and Carpetright all shutting space, there are huge conversion opportunities. 15m square feet has already been released by retailers in 2018 due to administrations and CVAs.

> "As pressure for space increases, relying on creative but ad hoc solutions for central small scale distribution centres will not meet demand. If this is to be resolved, planning policy needs to be reviewed and updated in partnership with the public sector and other stakeholders to provide the policy support needed to plan for demand, facilitate delivery and protect appropriate sites from alternative uses."
>
> *Martin Evans, Head of Planning, CMS*

“In last mile logistics, there’s very meaningful potential for rental growth, with limits to the supply side particularly stark given increasing land values driven by alternative uses and urbanisation trends.”

Urban logistics platform, Blackstone

Blackstone

Peter Krause, Principal, Real Estate Group

Tell us about Blackstone's involvement with the warehouse world
Blackstone began its recent series of logistics investments in the United States in 2010 and shortly thereafter in Europe in 2012 – with acquisitions in France and the United Kingdom first.

The strategy is founded in part on the view that across the globe people are buying increasingly more online.

We have seen online retail penetration grow rapidly across the globe, and this growth is creating additional demand for warehouse space – resulting in decreasing vacancy levels and higher rents. As consumers increasingly expect same-day delivery of goods, logistics and retail occupiers are shifting their distribution strategies to focus on urban, last mile-relevant locations.

As a result, we retain a stake in Logicor, in addition to our sizable and growing last mile logistics portfolio in Europe.

How do you see demand for warehouse space right now?
The last five years have seen very attractive supply and demand fundamentals, which have been fuelled by the online retail revolution. In last mile logistics, there's very meaningful potential for rental growth, with limits to the supply side particularly stark given increasing land values driven by alternative uses and urbanisation trends. We plan to push even further into smaller 'infill' assets within or proximate to the ring roads of major cities.

In London for example, there has been an intensification of positive supply/demand dynamics with the conversion of industrial land, notably in places like Battersea, to residential. Rents are moving up significantly as a result. Over time, secondary office parks may also become locations where e-commerce occupiers try to secure space.

In most countries across continental Europe e-commerce penetration remains below 10% today, with some major economies still in the low to mid-single digits: Italy, for example, sits at 6%, whereas China by contrast is approximately 30%, so you can see the meaningful potential for continued growth.

We are seeing a meaningful shift in the way people shop and how logistics property is operated. Leases vary country-by-country and depending on size. For example, lease terms on large warehouses in the UK tend to be the longest at 15 to up to 25 years, whereas in Italy, it is more usually a six-plus-six year structure. When looking at infill industrial assets leased to smaller tenants, lease lengths tend to be shorter. We see this as a good thing as it delivers the flexibility the market needs and allows landlords to capture reversion potential quicker.

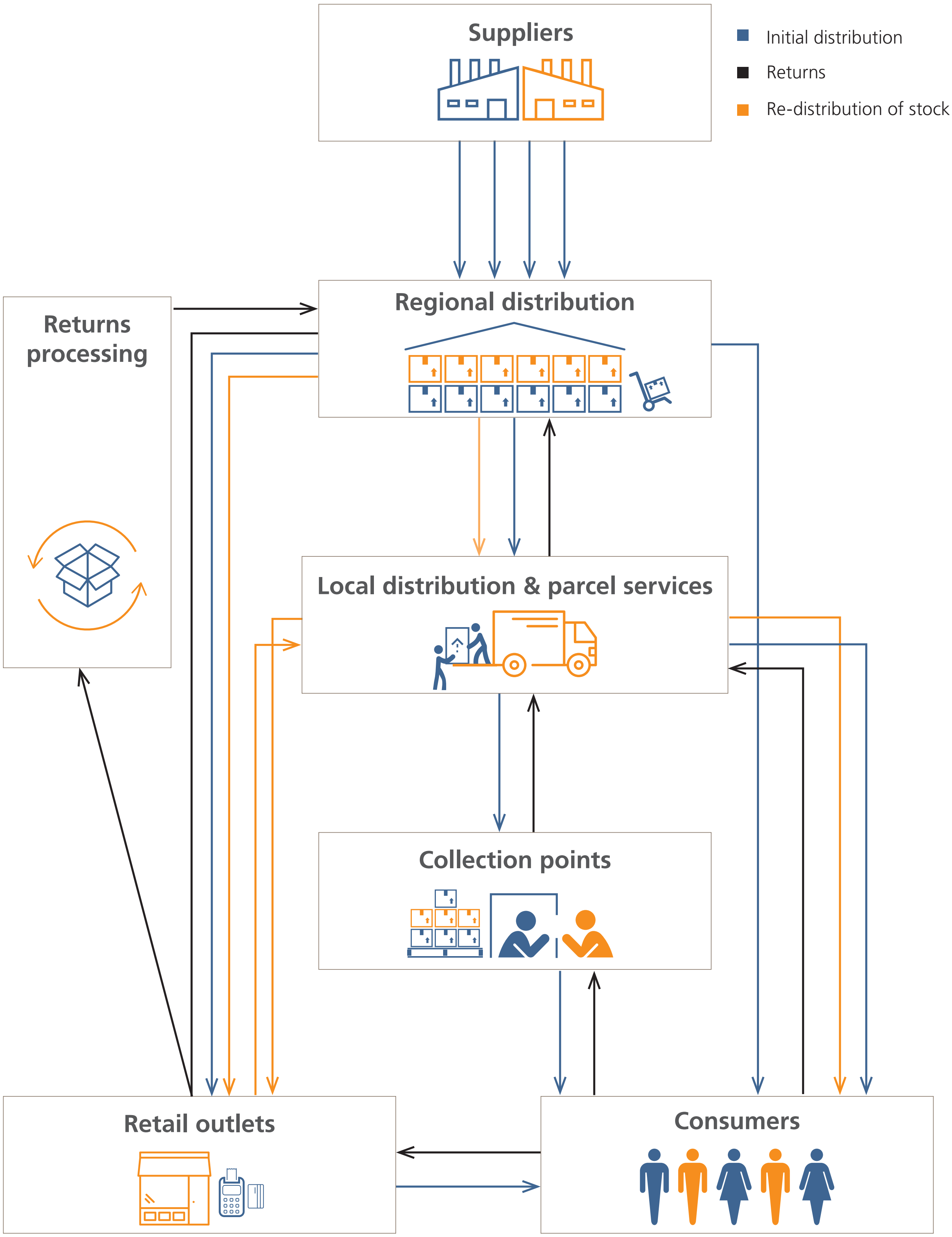
How will logistics property change in the next five years?
You will see more automation, more advanced racking systems, and more demand across markets by third party logistics operators. This evolution is something recognised across our business more broadly, with our private equity team's recent announcement regarding the acquisition of Averys, a leading manufacturer of customised racking and storage solutions for warehouses, for example.

An attractive aspect of investing in warehouses is that they are efficient to maintain with relatively limited capex. While what happens within them is becoming more sophisticated – and we are learning a lot in this regard from our customers as well – the basic physical structure of the building is quite straightforward, leading to lower ongoing capex requirements compared with other sectors.

Rents in continental Europe haven't moved as quickly as in the UK or the US, but with land values moving up in many of these locations, we expect that that will flow through to increased rents.

Could political uncertainty have an impact?
We continue to be bullish on the logistics sector because what is happening is a structural shift which is more profound than short-term political or economic issues. Although new tariff and non-tariff barriers could potentially have an impact on goods flowing in and out of the UK, these positive urbanisation and e-commerce trends are consistent across every major market in Europe.

Distribution in the omni-channel world

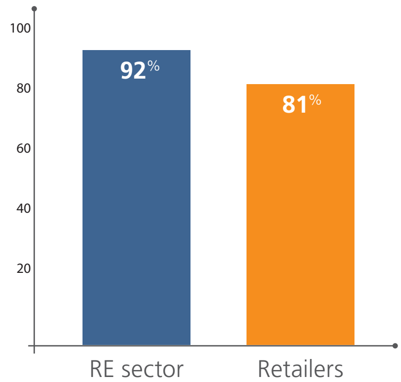


Delivering the goods: responding to 'generation now'

Need for speed

92% of real estate sector respondents and 81% of retailers consider consumer demand for ever faster delivery as being a key challenge for the logistics sector.

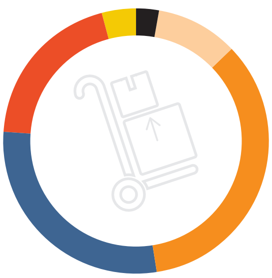
Real Estate Sector and Retailers: Over the next two years, do you consider consumer demand for ever faster delivery to be a challenge? % Agree



According to Google, mobile searches related to 'same-day shipping' have grown over 120% since 2015; they peak first thing in the morning, when people tend to be on their commute.

Driven by consumers, retailers are putting increasing pressure on distribution networks to increase dramatically both the speed and affordability of deliveries.

Real Estate Sector and Retailers: Which delivery timeframe do you think customers will expect to be regularly achievable on most orders by 2020?



RE sector

- **3%** Less than 15 minutes
- **10%** Less than 30 minutes
- **35%** Less than an hour
- **29%** Less than 2 hours
- **19%** Less than 5 hours
- **4%** More than 5 hours

Retailers

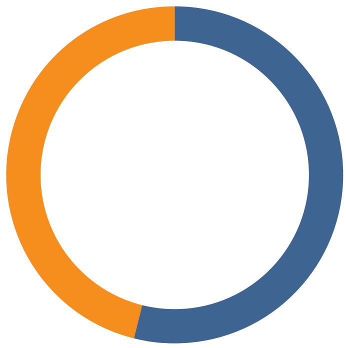
- **4%** Less than 15 minutes
- **19%** Less than 30 minutes
- **28%** Less than an hour
- **21%** Less than 2 hours
- **18%** Less than 5 hours
- **10%** More than 5 hours

51% of retailers and 48% of real estate sector respondents believe customers will expect delivery timeslots of less than an hour to be regularly achievable in less than two years' time. Almost all real estate professionals and retailers agreed that delivery in under five hours will be expected in most circumstances.

Consumers today want the convenience of shopping online to be matched by delivery speeds. This further underlines the crucial importance of urban logistics warehouses from which last mile deliveries are made.

Retailers: What proportion of customers typically choose slower free delivery compared to premium-paid faster delivery?

- **54%** Slower free delivery
- **46%** Premium-paid fast delivery



46% of retailers think customers are typically prepared to pay for fast delivery.

However, as an interesting counter-trend, retailers acknowledged that 54% of their customers typically opt for slower free delivery rather than premium paid faster delivery when given the choice.

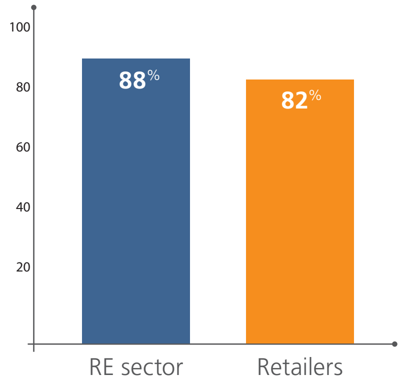
There may be a generational aspect to these findings. In our 2017 survey, we asked a similar question in which we split out our results in terms of demographic groups. 39% of the millennials we polled said they were prepared to pay a premium for delivery in under 12 hours, compared to only 18% of baby boomers.

Delivery times will continue to be a battleground for e-tailers in particular, especially in the fast-paced world of online fashion. In this heated competition, pure-play businesses are investing heavily in new solutions to help them stay ahead of the curve.

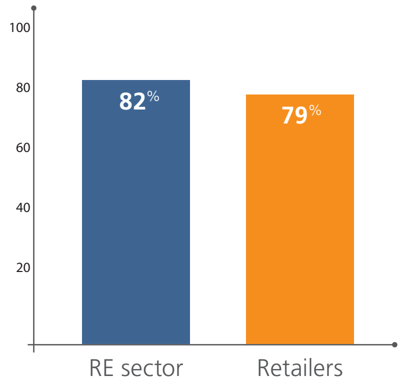
Future-facing logistics

Anticipating demand and the use of big data were both rated highly in our index of sector challenges by retailers and real estate professionals.

Real Estate Sector and Retailers: Over the next two years, do you consider anticipating future demand of consumers to be a challenge for the UK logistics industry to overcome? % Agree



Real Estate Sector and Retailers: Over the next two years, do you consider better understanding and using 'big data' in the supply chain to be a challenge? % Agree



In the light of this, an area attracting keen retailer interest is the field of anticipatory logistics based on predictive algorithms which interpret big data. If the predictions are correct, anticipatory logistics will enable all businesses to ramp up resources before demand spikes.

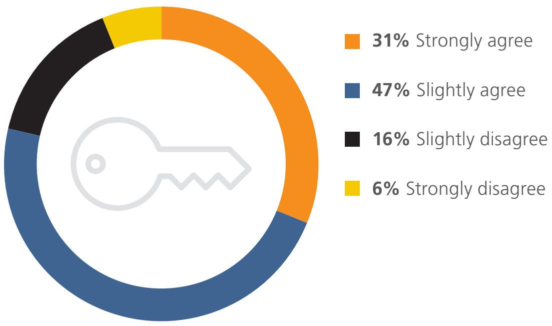
For example, if artificial intelligence predicts impending consumer demand for a new computer tablet, then the manufacturer boosts production with reasonable certainty; haulage companies know in advance how many lorries they need to deliver the tablets on which dates; and the retailer knows to order sufficient stock and prepare for online ordering.

Last mile to last metre

Adding yet another layer to the increasingly complex delivery puzzle, there are some businesses which are now trying to make marginal gains in terms of the last metre and not just the last mile. The last leg of the supply chain accounts for an estimated 28% of the total cost of moving goods.

The cost of failed deliveries is in the hundreds of millions of pounds for UK retailers, making any marginal improvements highly attractive. The concept of 'smart locks' is in development, but will consumers be prepared to give drivers one-off access to the boot of their car or even their home to deliver a package?

Retailers: do you think that by 2025, smart locks allowing the delivery of products directly into houses and car boots will become ubiquitous?



78% of retailers think that by 2025 consumers will be receptive to this.

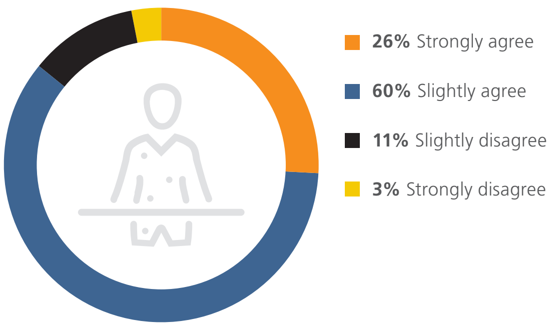
Rising returns

However, far more costly still to the logistics industry than failed delivery is the mounting tide of returns. In the UK, around 30% of all items purchased online are returned and this costs the retail sector £20bn each year, according to EY. This is putting pressure on wholesalers, distributors and manufacturers to optimise how returned products are handled and to find new efficiencies in the reverse supply chain.

A major online fashion retailer we spoke to commented, '*retail tech has a role to play in addressing the challenge of the returns culture, especially given the inability to influence factors such as a shopper's personality type.*'

There is a huge proliferation of technology being trialled by online retailers in particular to try to combat returns. The retailers we polled showed optimism that, by 2025, advanced CGI and new body imaging technology would reduce the number of items being returned by allowing customers to virtually 'try before they buy'.

Retailers: do you think that by 2025, advanced CGI and 3D body scanning technology will more accurately depict online products and reduce returns?



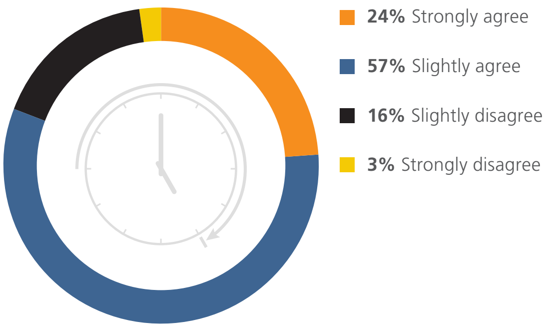
> Speed of delivery and ease of return have been differentiators for certain retailers, but for many this has come at a huge cost. The next step is to use technology, leveraged platforms and partnership across retailers and suppliers to drive the cost down while still improving customer experience. As a result companies will need to consider the impact of intellectual property, data and competition laws when implementing these new structures.
>
> *Matthew Bennett, Technology Partner, CMS*

Showing how a customer will look in clothes before they buy the products has clear advantages. However, consumers will first have to become comfortable with the idea of digitising their body measurements.

Regulate and collaborate?

With the volume of deliveries and returns to and from homes and workplaces increasing, there is growing congestion on our roads during peak hours.
This comes at a time when air pollution levels are reaching alarming levels in cities. According to a report by the Royal College of Physicians, toxic air is linked to more than 40,000 deaths per year in the UK. The retailers we polled overwhelmingly agreed that before 2025 we would see the government stepping in to regulate.

Retailers: do you think that by 2025, increasing regulation around deliveries during peak times will lead to order consolidation and greater industry collaboration?



A major online fashion retailer we spoke to commented, '*pressure from consumers will force the industry to address the growing need to collaborate and share resources better. The best possible outcomes for the industry will happen when government, corporates and consumers work together.*'

The opportunity for industry collaboration is viewed positively. Deliveroo, for example, is planning to expand into 50 new towns and cities in the UK, reaching six million new UK customers by collaborating with other delivery networks.

More consolidation centres and shared networks of lockerboxes for collections are likely to emerge in and around our towns and cities in the future. We also may see other players who have capacity moving into transport logistics.

> How many Uber drivers are circling London with empty cars, when they could be doing the delivery job that vans are now doing? It won't be long until they move into logistics.
>
> *Ekaterina Avdonina, Delin*

"Looking forward, increased automation will be the major influencer on logistics with the potential for a fully autonomous supply chain as robotic forklifts pick and load onto autonomous trucks."

Lyons 135, Lyons Park, Coventry

Goodman

Stephen Young, Director, Investment Management

Tell us about your company
Goodman is a global property group known for its specialism in logistics and industrial space. Our focus is on grade A product: owning, developing and managing large distribution and warehouse facilities of 100,000 square feet or more. We have a 'gateway cities strategy' and our stock is concentrated where demand for goods, services and e-commerce is felt most acutely.

In the UK, Greater London is an obvious focal point for us alongside the Midlands, which has been the traditional logistics hub, and Manchester – all of which are locations that stand out due to the size of their populations and younger demographic.

How are warehouses changing?
Customers want buildings that are flexible and efficient in respect to internal layout and yard servicing. E-commerce is driving a sizeable proportion of UK occupier demand and this is influencing building design as levels of automation increase, impacting building heights and floor loadings. Access to a suitable workforce is also an increasing requirement and influencing decision making on location.

In land-constrained locations such as Japan, Hong Kong and China, we own and develop multi-storey facilities and we expect to see multi-storey buildings being developed here in the UK – though primarily in Central London where land supply is heavily constrained. It will be interesting to see what the next five to ten years bring in this regard and how readily UK-based operators are accepting of multi-storey warehousing.

How will technology change logistics?
The smart phone has been the major technological influence that has impacted our industry, fuelling the growth in e-commerce and growth in demand for logistics space as e-retailers develop their distribution platforms.

Looking forward, increased automation will be the major influencer on logistics with the potential for a fully autonomous supply chain as robotic forklifts pick and load onto autonomous trucks. When combined with the adoption of new intelligent software platforms, this will bring huge efficiencies to retailers and logistics operators, allowing them to meet the customer's increasing expectation for immediate delivery of goods.

These changes will be adopted over time. We are still a long way from seeing convoys of autonomous trucks travelling along our motorways, but the next 20 years will be an exciting time for the sector as technology shapes the future.

Are there new approaches to warehouse design?
We will see more design-led sheds over time as the sector evolves with design influenced by technology and the increased need better to integrate warehousing within urban locations. We are already seeing this impact with the majority of new build take up being on a 'build-to-suit' basis to accommodate increasingly bespoke requirements from our customers. The increased number of personnel employed within warehousing is resulting in increased office and welfare provision that is influencing design.

Interest in multi-level warehousing is also increasing, which brings its own design opportunities and this is one area we expect to see evolve in tandem with increased automation. We have also seen plans for a subterranean warehouse in the UK, which is one way of positively addressing the visual impact of large warehouse facilities.

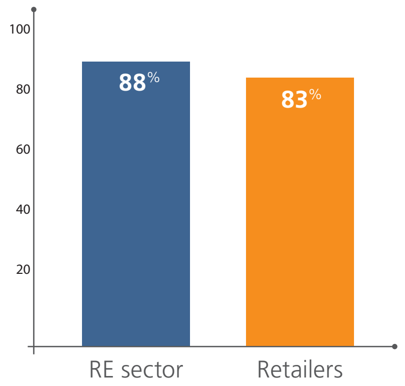
Sustainability continues to be an important topic for both ourselves and our customers, with initiatives extending beyond the building to include access to public transport, provision of cycle routes and facilities to support the use of electric vehicles.

However, for the foreseeable future, warehouses are largely going to remain much like they are today: efficient, flexible spaces located in strategic locations with an increasing emphasis on access to urban populations.

What other market disruptors do you see?
Outside of an economic or geopolitical event, technology will shape the future of the logistics sector. We expect the demand for warehousing to remain strong as the growth of the e-commerce sector continues to accelerate alongside more traditional warehouse uses. In the long-term, supply chains will be more efficient and flexible but the fundamental requirement for warehousing as the principle hub for handling sorting, distribution and customer returns will remain.

Outside the box: sector innovation

Real Estate Sector and Retailers: Over the next two years, do you consider keeping pace with technological change affecting warehouse operations and delivery methods to be a challenge? % Agree



88% of real estate professionals and 83% of retailers agree that keeping pace with technological change is a challenge for the logistics industry.

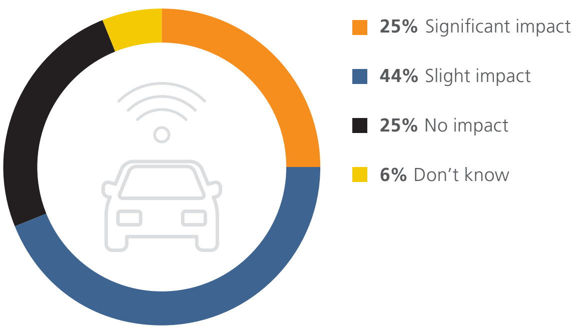
Logistics has been identified as an emerging battleground for some of the largest companies in the world. In addition to Amazon, Alibaba and giants of the delivery industry such as DHL and UPS, retailers of all types and tech firms like Uber and Tesla are investing heavily in the sector.

The growing challenges of cost, efficiency and scale make logistics ripe for disruption. Entrepreneurs and start-ups that are able to offer new solutions have enormous opportunities to make inroads into the market.

We canvassed views on the impact of various emerging technologies over the next two years.

Autonomous vehicles

Retailers: Impact of autonomous vehicles on the logistics sector over the next two years



69% of retailers feel that autonomous vehicles are going to impact the industry over the next couple of years. Autonomous forklifts have already been widely adopted in warehouse operations and these vehicles are now able to pick and on-board orders for delivery four times faster than a human.

The next frontier of automation, however, is self-driving vehicles. Although our interviewees recognised their potential, most felt that they are more on the five to ten year horizon.

When they hit our roads, autonomous vehicles will create opportunities for efficiencies through a process known as platooning. When multiple vehicles are networked, they can brake simultaneously and safely drive close enough together to reduce fuel consumption by 10%. Parking space will also be freed up as they can work around the clock.

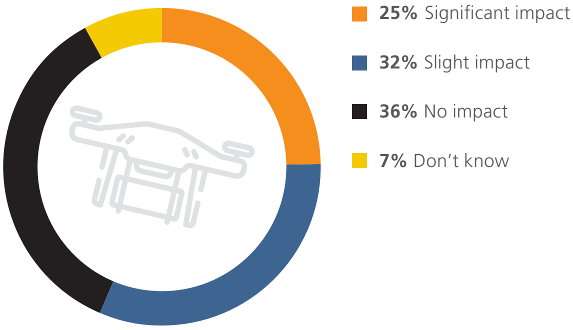
Following successful trials in Singapore, Germany and the Netherlands, the European Automobile Manufacturers Association anticipates that platooning will become widespread by 2023. This will create demand for larger warehouses with more bays so that more lorries can be processed simultaneously.

Furthermore, the combination of both autonomous and electric vehicle (EV) technology presents exciting opportunities. EV growth is underpinned by growing environmental considerations in cities and associated government policies, as well as the increased competitiveness of the technology. In Europe, it is estimated that EVs will account for about 25% of light vehicle sales by 2025, according to S&P Global Ratings.

> “EVs are much more imminent because the pressure on air quality will only grow as deliveries increase. We know several customers are looking very closely at introducing fleets of electric vehicles for last mile delivery.”
>
> *David Sleath, SEGRO*

Drone delivery

Retailers: Impact of drone delivery on the logistics sector over the next two years



More than half of retailers think that drones are going to impact the warehouse sector, but all of our interviewees felt that there were limits to their scope.

It is easy to see why drones appear to be an attractive solution for last mile delivery, since they can soar above congested roads. But there are hurdles they may struggle to overcome in being used as a full scale delivery solution. There is a limit to how far they can travel and the weight of goods they can carry. More challenging still are existing laws and regulations for flying objects.

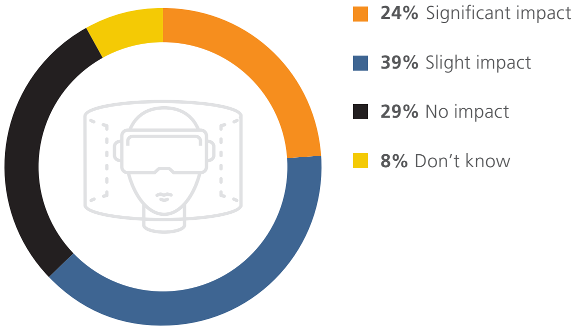
> “Drones are over-hyped. We can't imagine them being used on a large scale, because aviation laws are too strict, and the UK and most of Europe is too densely populated to accommodate the associated risk.”
>
> *Michael Hughes, Verdion*

Amazon, however, remains undeterred and has been granted a series of ambitious patents in the US to help them pave the way for drone delivery. These include designs for drones that self-destruct during an emergency and drones that can respond to human gestures to beckon them towards a delivery spot. More aspirational still, Amazon has applied for a patent for the use of giant airships to serve as mobile flying warehouses. Charging points for drones would be contained within these giant blimps. With an estimated research and development spend of USD 22.6bn in 2017, Amazon engineers are certainly showing real imagination in the new solutions they are investigating.

In the more immediate term, we will most likely see drones used for moving goods around inside warehouses as the technology develops. A number of drone-tech companies are now producing drones designed specifically for warehouse inventory management.

Augmented and virtual reality

Retailers: Impact of augmented and virtual reality on the logistics sector over the next two years

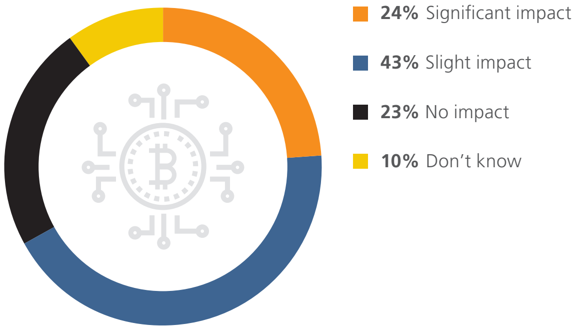


63% of retailers think augmented and virtual reality will impact the sector. In an interesting development, DHL Supply Chain recently completed its augmented reality pilots and is expanding its 'Vision Picking' solution to more warehouses around the globe.

Smart glasses provide visual displays of order picking instructions along with information on where items are located and where they need to be placed on a cart, freeing pickers' hands of paper instructions and allowing them to work more efficiently. DHL say their trials have shown an average improvement in productivity of 15% and higher accuracy rates.

Blockchain

Retailers: Impact of blockchain in the supply chain over the next two years



Blockchain is widely recognised as one of the most crucial fields of innovation today, with far reaching impacts. 67% of the retailers we polled see its potential in logistics.

The basic idea behind the technology is that it makes it possible to structure large-scale networks, chains and markets without the need for a dominant, regulating party, which increases efficiency.

In theory, the trust that is required between stakeholders to share information on the blockchain creates intrinsic security. It could be useful for checking orders and inventory, especially in the circumstance that something goes wrong and items need to be recalled. Diamond-giant De Beers, for example, uses blockchain technology to track stones from when they are mined through to sale. This ensures the company avoids 'blood diamonds' and assures consumers they are buying the genuine article.

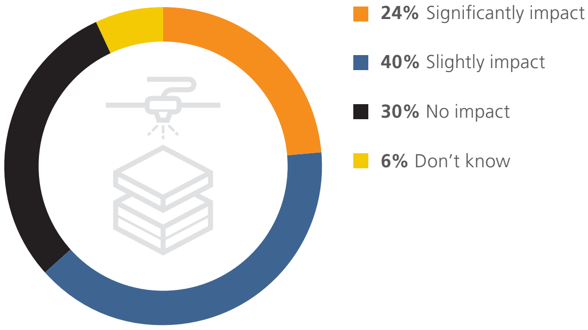
> "Blockchain is set to overhaul the supply chain, helping with the tracking of parcels and returns efficiency, creating huge savings."
>
> *Ekaterina Avdonina, Delin*

There are several start-ups such as Cloud Logistics who see an opportunity to provide blockchain-enabled supply chain solutions. Gaining industry adoption is the most critical challenge which will determine the ultimate success of blockchain technology.

> "Blockchain, with its encrypted storage of linked records and distributed ledger technology, has huge utility in logistics. Since supply chains have become very complex and now span multiple jurisdictions, blockchain offers the potential to increase efficiency and transparency, helping in everything from warehousing and inventory management through to payment. In the wider real estate context there are already several jurisdictions, including Dubai, that are looking at implementing land registries built on blockchain and more are expected to follow."
>
> *Paul Silver, Technology Partner, CMS*

3D printing

Retailers: Impact of 3D printing on the logistics sector over the next two years



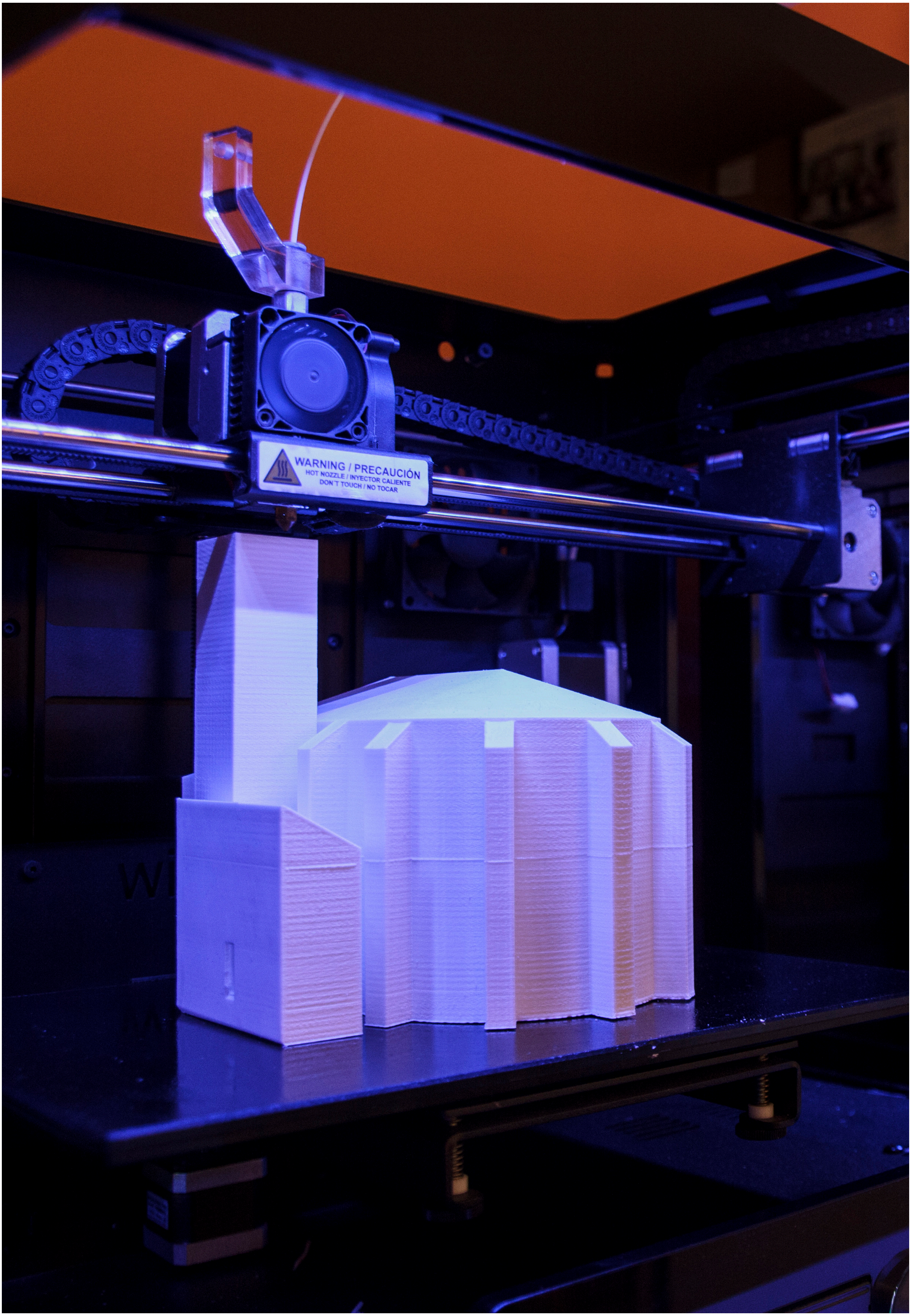
Most 3D printers work on the basis of building up layers of material (plastic, ceramics or metal powders) using computer-aided design. It is an additive process: each layer is printed until a three-dimensional product is created.

64% of retailers think that this manufacturing technology will have an impact on the logistics industry over the next two years. Potentially the manufacturing of goods which were previously produced in China or other Asian markets could be re-shored in the UK and Europe, thus reducing shipping and air cargo volumes.

3D printing lends itself to the mass customisation of products. This would mean that inventory levels fall, as goods are made to order, reducing overheads for retailers. This could have the effect of reducing warehousing requirements.

One way that this could play out in future is that malls, retail parks and very large stores may be repurposed as hubs containing not only retail but also logistics and manufacturing space with 3D printers. 79% of the retailers we polled agreed this was a possibility.

Given the hype that has built around this technology over the past decade, it is perhaps easy to forget that 3D printing or 'additive manufacturing' has actually been around in various guises for nearly 40 years. Its disruptive potential at a consumer level has been discussed for some time, but its adoption is unfolding at a steady pace. As the cost of 3D printers starts to fall, it may begin to permeate more markets, but this is not going to happen overnight.


WARNING / PRECAUCIÓN
HOT NOZZLE / INYECTOR CALIENTE
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About us

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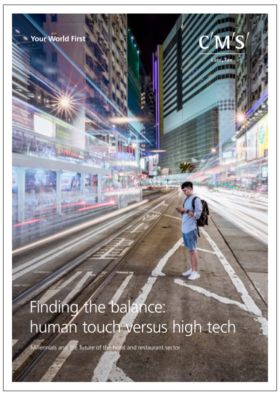
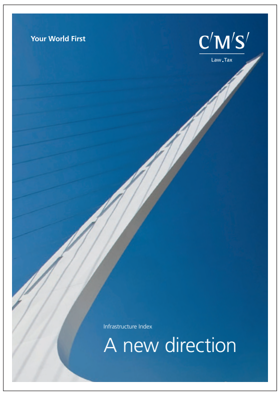
Across our eight core sectors – Real Estate, Consumer Products, Energy, Hotels & Leisure, Financial Institutions, Infrastructure & Project Finance, Life Sciences & Healthcare, and Technology, Media and Telecommunications – we have some of the brightest and most creative legal minds. Our lawyers are also fully immersed in the world of our clients: genuine experts in their fields, knowledgeable about the issues you currently face, and those that may lie just around the corner.

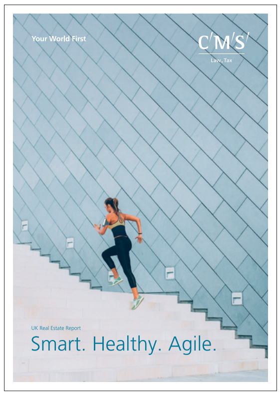
When it comes to real estate, with over 700 lawyers we have the largest dedicated team in Europe, which is band one/tier one ranked in the legal directories and was awarded 'Real Estate Team of the Year' in the Lawyer Awards 2018. Whether you are investing, developing or proactively managing your assets, CMS offers the full spectrum of legal advice for all your real estate needs.

In addition to this year's report, we have a broad range of thought leadership papers covering major sector issues. You can also listen to our podcast series on topical market and legal issues in the real estate sector. Search 'CMS Real Deal Podcast' to subscribe.

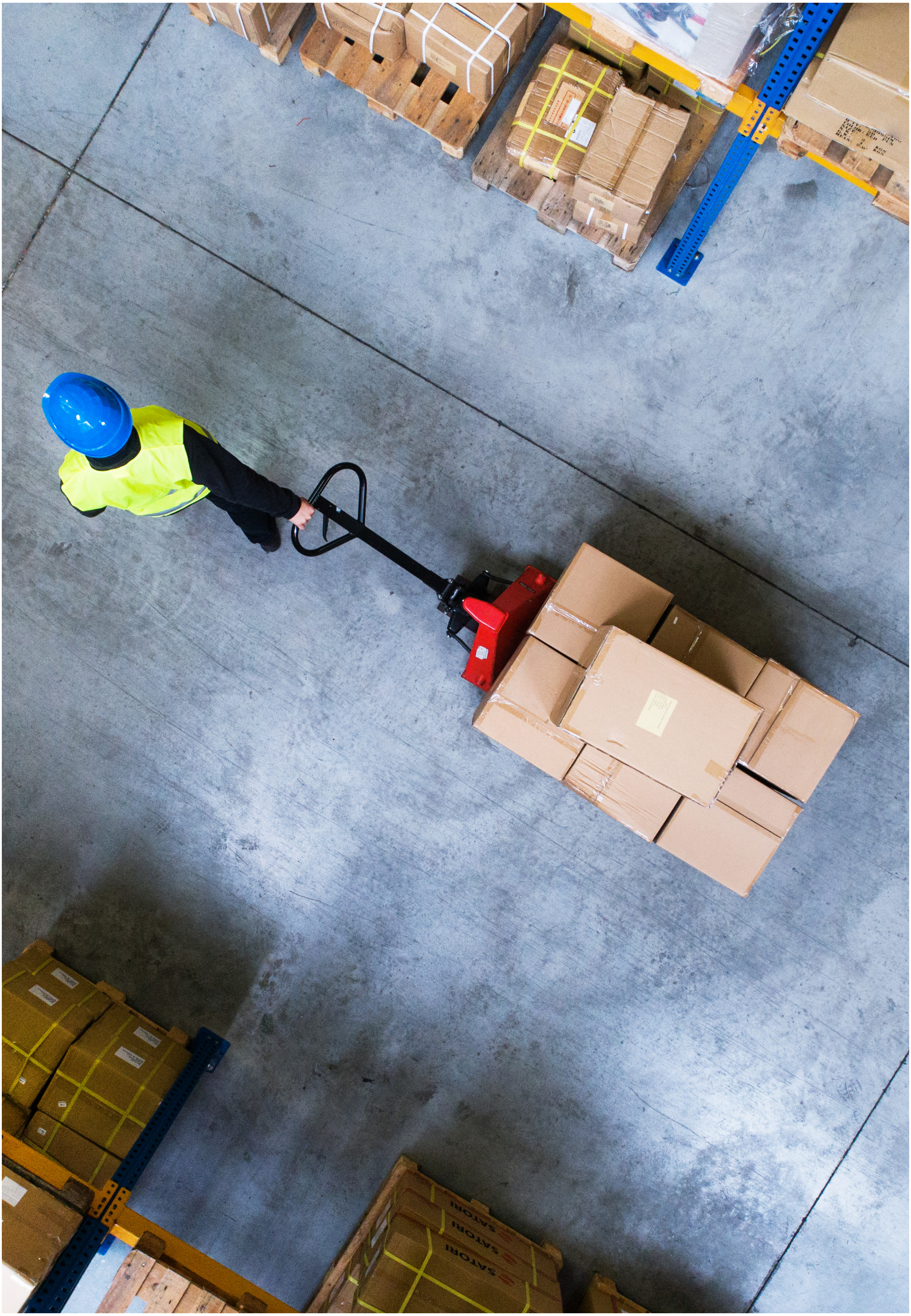
Thought leadership papers







Awards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