



Data Ethics in Real Estate

The next decade's biggest challenge

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FOREWORD



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As Past Chair of the International Ethics Standards Coalition (IES), I am delighted to have the opportunity to write this Foreword.

My thanks go to the Real Estate Data Foundation (RED Foundation) for taking a real interest in the growing ethical dimensions surrounding the collection and use of data in the Real Estate sector, and for asking Alpha Property Insight to write the report on their behalf. Particular thanks go to the author Dan Hughes for his tireless work to push data issues up the property agenda and for the clear way he has set out the problems and urgent questions we all need to consider and find urgent answers to.

The title of the report “*Data in Real Estate: The next decade’s biggest challenge?*” might seem to some as being perhaps dramatic. However, there are many, and increasing, examples of data either deliberately, or by accident, being used in unethical ways. We are already seeing this creep into the Real Estate Sector and with the rapid increase, both now and in the future, of large amounts of sometimes complex data being collected, the potential for ethical challenges can only grow.

With trust in the professions already damaged, additional ‘bad news’ stories can do nothing but further damage the reputation and trust of individuals, businesses and the Real Estate Sector as a whole.

I believe, and the report bears this out, that many people only really consider ‘data’ as the personal information that they, or their company, might hold and reasonably enough consider that this is covered by their GDPR policies. However, throughout the life cycle of Real Estate, there will be many other types of data collected and used. It is this data that will pose the greatest challenges especially when combined with the increasing use of Artificial Intelligence. A clear example of this was the investigation by the Information Commissioner’s Office into the use of facial recognition technology in the King’s Cross London development.

One of the main reasons for which the RED Foundation was set up was to raise the sectors’ engagement with the ethical challenges that the use of data can present. This report builds on the set of data ethics principles published by the RED Foundation and already adopted by several important professional bodies and businesses.

Recently the RED Foundation also formed a data ethics steering group, which I am honoured to have been asked to Chair, to specifically raise the topic of data ethics up the sector’s agenda. Made up of a number of leading figures from the professions, technology, and academia, they will be looking at ways to engage and consider some of the challenges posed by the report.

Dan Hughes clearly sets out the current situation, explains how we currently collect various types of data and how we behave when using the data. Importantly, he suggests some short-term and long-term steps that we should consider taking. Bearing in mind my previous comment about a lack of understanding, he includes many real-life examples that should resonate with those reading this report.

We all need to ensure we are considering the ethical use of all data we collect and build this into policies and processes. By doing this and being totally transparent we will hopefully help prepare the sector to face the next decade’s biggest challenge head on.

A WORD FROM THE HEADLINE SPONSORS



At Esri UK, our technology has a wide variety of uses, from underpinning how Johns Hopkins reports COVID19 and helping deliver High Speed 2 sustainably, to decommissioning the Sellafield nuclear site and helping Sainsbury's understand the seasonality of sales through their store network.

The common denominator in achieving all of this is the responsible use of location data. In one sense, location data is no different than other data, in that privacy is important, but with location data, it is even more critical because location reveals a huge amount about an individual, easily unlocking a lot more private data about them, in a way that a bank account number does not. It is essential that we safeguard this, and if a business doesn't safeguard it, it's a massive risk to that brand.

Esri UK is fully committed to measures to safeguard the use of data ethically and welcomes the inclusion of data ethics in the Geospatial Commission's recently published UK Geospatial Strategy, which sets out the potential and value of geospatial data to the UK Economy.

Similarly, Esri UK welcomes the RED Foundation (Real Estate Data Foundation), made up of experts from across all corners of the property sector with the purpose of raising the profile and topic of data ethics within the sector. This is in line with our efforts to safely and ethically enable innovation so that we can responsibly deliver capabilities for the benefit of society as a whole.



At Yardi we recognise the rapid amplification of the importance of operational and financial data, its accessibility and team connectivity. What matters almost more than the data itself, however, is the means of obtaining it efficiently and using it effectively and ethically to the benefit of all parties.

Some systems compile data from multiple disparate systems, making usable data a moving target. This approach, which prevailed until the last couple of decades, is complicated, cumbersome and prone to error. That's why connectivity is key, and the reason why the applications that collect, process and apply such data across the real estate lifecycle are increasingly relevant.

EXECUTIVE SUMMARY

WHAT IS DATA ETHICS AND WHY NOW?

Data ethics is the ‘should we’ question. There are clear overlaps with the technological questions, ‘what are we able to collect or use’ and the legal questions ‘what are we allowed to collect or use,’ but there is a deeper ethical question for the Real Estate sector; whether we should use the data that we have and how we ensure trust in it.

As ESG (Environmental, Social and Governance) becomes a topic of ever more importance, a crucial part of this, social and corporate governance in particular, is how we use data. The Real Estate sector is entering a perfect storm where the ethical use of data is going to grow rapidly in terms of complexity, impact and importance. Employers and employees are becoming increasingly aware of the relationship between buildings and people, the industry is getting quicker, and leases are getting shorter. Brand awareness of consumers and investors is becoming more important, and we have already seen several cases in other sectors where data breaches have resulted in significant brand and corporate damage. And all the while, we are faced with an exponentially growing volume of data and complex tools to support our day-to-day jobs. Never has the ethical use of data been more important, yet as the scale and complexity continue to grow, never again will it be as easy to address.

The purpose of this report is to explore the topic of data ethics in a Real Estate context and to raise some of the questions that need answers now. These may not be easy answers, but by building the questions into businesses’ planning and policies, and by applying some simple principles, Real Estate can be seen as leading the way in the ethical use of data.

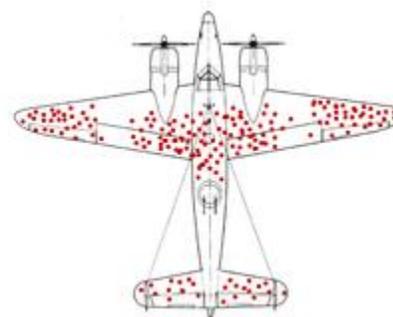
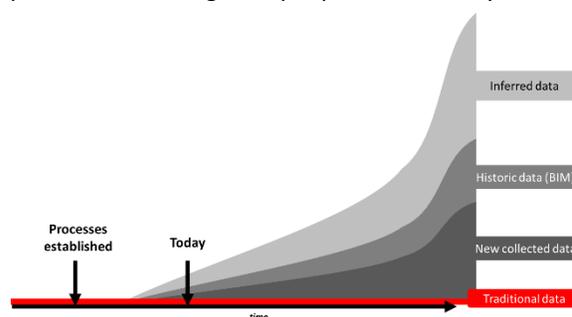
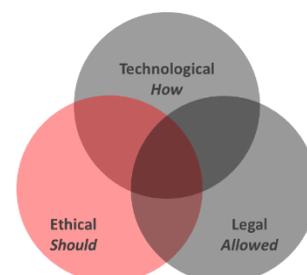
WHAT WE DO

How we should use data and the ethical considerations that are needed are wide and deep. For the purpose of this paper, we will explore the ethics around how data is collected, how it is used and how it is communicated.

Data collection – broadly speaking we have two choices; to collect data directly ourselves or to get it from an alternative source or a third party.

In the case of collecting data ourselves, the main question centres around whether we should be doing so. Should we be collecting it, should we be using it for the purposes that we are doing so and is it proportionate?

In the case of getting data from an external source or third party, not only do we need to question whether we should use the data in the same way as if we were collecting it ourselves, but we also need to question whether we should trust the data



itself. Is the data appropriate, is it genuine, has it been manipulated, is it biased and is it really anonymous? In the coming years, if we do not have the organisation and sector wide structure to prevent against it, we will see a growth in the manipulation of data to drive property decisions and values.

***SO WHAT?** Should we collect data and should we use it are two of the most challenging questions that the sector will face in the coming years. It is essential that these questions are built into today's thinking.*

Data use – Once we have the data and we move into an ever more complex and algorithm driven world, it is also important to consider whether a property professional should be expected to take responsibility for the data that they rely on. Not only that, but we must also consider how the software is applied, especially when it is embedded in the fabric of buildings and land. In the report, we explore examples of when similar data and analysis may be applied in different situations, one likely to be considered ethical and one likely to be considered unethical.

***SO WHAT?** Using ethical data is not enough, how it is applied, in what situation and for what purpose must also be considered. Furthermore, accountability must be considered within regulations and standards and technology solutions to this challenge should be explored at a sector level.*

Data communication – Finally, once we have the results or insights from data analysis, how does the profession make sure that these are presented and communicated in a way that the recipient can trust? It is perfectly feasible for the same ethical and accurate data analyses to be used to tell two opposing stories depending on the desired outcome.

***SO WHAT?** Real Estate must consider the challenges of presenting data sets in an ethical manner. This needs to include not only the final output but everything that feeds into it, so there is sufficient transparency for the person responsible for end communication.*

HOW WE BEHAVE

The ethical use of data tends to depend on the situation and wider context and so is subjective and fast changing. This means that determining whether collecting a particular data set is or is not ethical is challenging. However, the property sector is already used to complexity and it is relatively simple to build certain principles into our thinking. Some of these are behavioural.

Transparent – It is important to be transparent about the data being collected by a business or within a building and why. Commercial considerations need to be made about how it is possible to be fully transparent whilst not exposing any commercial sensitivities. Furthermore, how can a highly complex software system or algorithm based on thousands, or millions of data points, be put into a simple and digestible format that a person with little understanding of data can rapidly understand. Indeed, how do we communicate this to people who are entering a building or a space to make sure that they are aware, and that we have their permission to collect data on them.

Proportionate – Collecting data that provides additional insight is not enough, it needs to be proportionate to the benefit. Using an Automated Valuation Model (AVM) as an example, if millions of data points are collected about the health and wellbeing of people in a building, there is a very strong argument that this would enable insights into the building's performance. However, would these be significant enough to have a material difference on the valuation and if not, how could this be considered proportionate.

Accountable – Finally, it is important that a property owner, manager or corporate occupier is accountable for the data that they collect and all parties are accountable for the data they use. As we move into an ever more complex and fast changing world, this becomes ever more challenging and many of today's sector structures and standards are not set up for this.

***SO WHAT?** What might be considered ethical use of data depends on the situation, and will vary from person to person and change over time. Therefore, whilst black and white standards may be difficult to adopt rapidly, behavioural principles for individuals, businesses and buildings may be more easily adopted and should be built into all data related activity.*

NEXT STEPS

Short term

In the short term, organisations must ensure that the ethical use of data is built into their thinking at all times when considering the collection, use of or communication of data or insights based on it.

A good starting point for this is to ensure that the Real Estate Data Foundation Ethical Principles are adopted in businesses and buildings.

Everyone should challenge themselves, their companies and their suppliers on their approach to the ethical use of data.

Long term

The Real Estate sector must urgently come together to address the following questions:

- **Who is accountable** – who is accountable for the data that is used throughout a property process? The answer to this will shape future standards, regulations and insurance policies.
- **What are they accountable for** – what are the people identified in the previous point accountable for? How far should a user go to verify data and ensure that it is ethically used?
- **Permission best practice** – what is the sector's approach to getting a person's permission when they enter a building or public space?
- **Technology solutions** – Which data exchange authorities and solutions could provide an answer to some of the challenges around trust? Other sectors have started exploring the use of technologies such as blockchain to provide the trust and transparency to shared data as the volume of data grows. Real Estate must explore these technologies further to identify opportunities.

In the future, we will see a re-shaping of the sector around these topics. It is also likely that we will see new roles emerge providing professional responsibility for an organisation's ethical approach to the use of data. In addition, trust will become one of the largest deciding factors in selecting data and software providers.

Tomorrow's successful companies will be answering these questions today, but sector-wide collaboration will be the key to an ethically data driven property market of the future. It is essential that senior leaders and Industry bodies alike rapidly work together to answer these questions.



1. Accountable

For the data collected and used. This includes taking responsibility for using the data in an appropriate and secure way.



2. Transparent

About what is collected and why. Whilst this cannot be expected for every data point, at a minimum a general data policy should be published for each building and company explaining what is collected and why.



3. Proportionate

Not only should data be collected within legal and technical requirements, but is also proportionate to the benefit and the expectations of wider society



4. Confidential & Private

All activity with data should at all times consider confidentiality and protect privacy; both within necessary legal requirements, but also according to the expectations of wider society.



5. Lawful

All data should only be used within all relevant local and international laws and regulations.



6. Secure

Security principles should be built in 'by design' into all applications and appropriate steps should be taken to keep data secure.

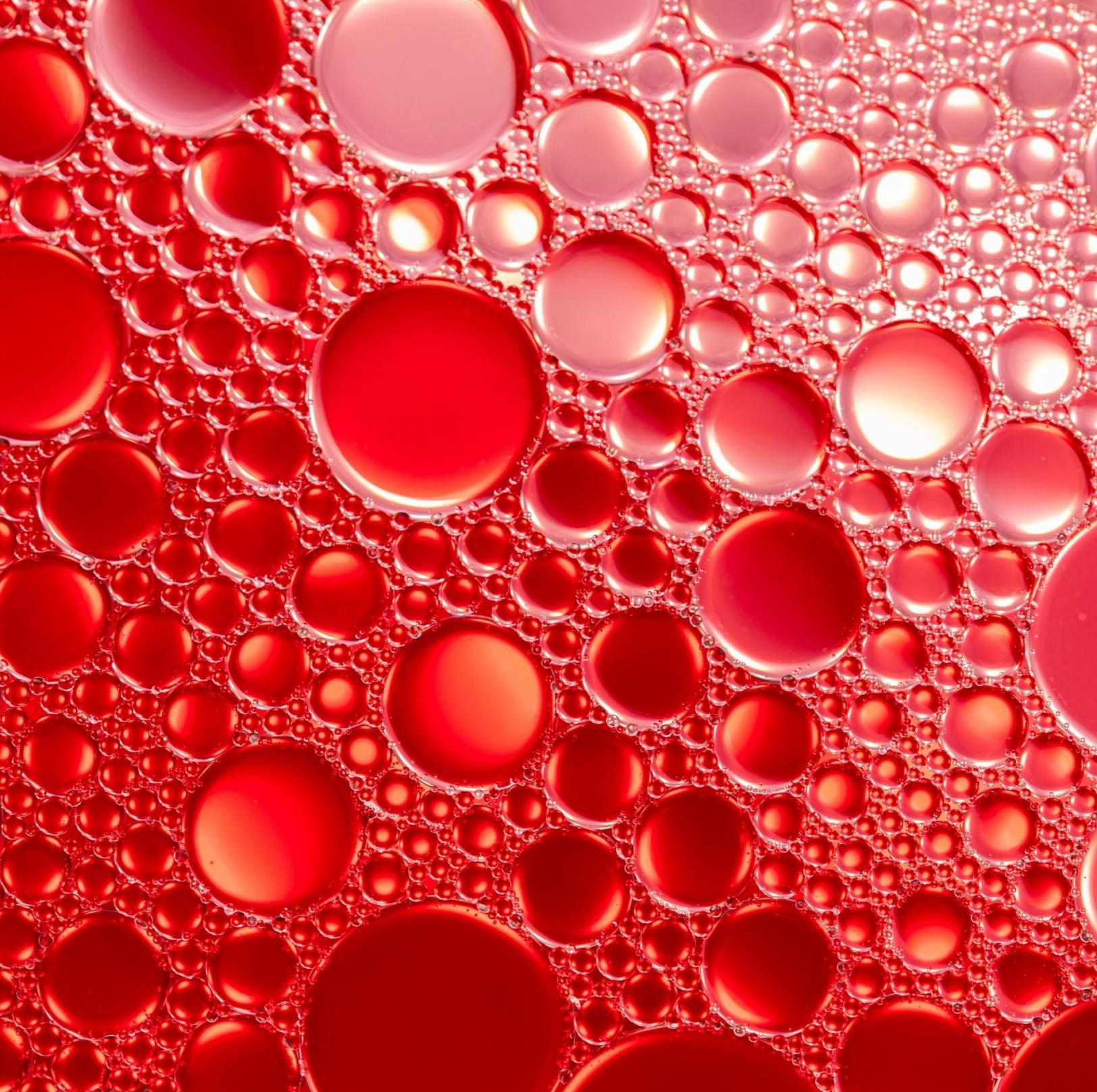
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Report authored by Dan Hughes

of Alpha Property Insight for the use of
the Real Estate Data Foundation.

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1. THE SITUATION TODAY

Real Estate has been at the heart of society for centuries. It is where we live, where we work and where we shop. Pensions are heavily invested in property, its impact on the planet and the environment is substantial, it provides significant employment and is a major driving force behind any economy.

Properties come in all shapes and sizes, big or small, smart or ugly. But despite their importance and the emotion they engender in us, they have evolved little over the decades. They are effectively concrete blocks to provide a roof over our head to keep the rain off and walls around us to keep us warm and safe. Of course, some elements of buildings have changed over time. They have become more sophisticated as new materials and new designs are used. People have built upwards and underground to make better use of space. But overall, buildings remain relatively passive.

In the last few years, however, we have entered a perfect storm which is waking buildings up – they are starting to live. They are becoming more connected, more surveillant and more human centric. If a building is not ‘connected’ in today’s world, it will struggle to operate for most functions. Connectivity is essential for us to connect our building apps, devices, sensors, IoT and automated processes.



The foundation of all of this change is data and as the volume and variety of data grows exponentially, we need to take steps at a sector level to make sure we are dealing with it appropriately.

As ESG becomes a topic of ever more importance, a crucial part of this, social and corporate governance in particular, is how we use data. The ethical use of data has never been more important and will never be as easy to address again as it is today; as the volume and complexity of data grows so will the scale and difficulty in dealing with it.

1.1 What are data ethics?

A good place to start with any subject is a dictionary definition.

ethics

/ˈɛθɪks/

1. moral principles that govern a person's behaviour or the conducting of an activity.
2. the branch of knowledge that deals with moral principles.

Source: Oxford Languages

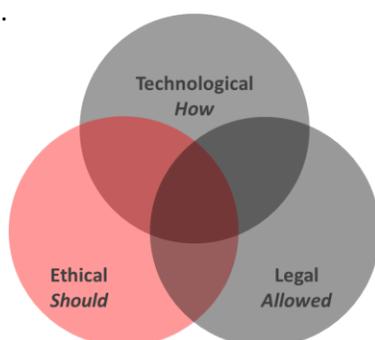
Ethics is all about behaviour, not basic compliance. According to the Open Data Instituteⁱ, data ethics is ‘a branch of ethics that evaluates data practices with the potential to adversely impact on people and society – in data collection, sharing and use.’ So, data ethics is the ‘should’ question; ‘should we do something?’, ‘should we behave in a particular way?’ As the Real Estate sector uses more and more data, this question will become more important: how should it use data?

In the consumer technology world, the ethical use of data has been a focus for several years. The data that is collected, getting permission to do so, and how the data is used have all come under scrutiny with some high-profile cases hitting the media. This has largely passed Real

Estate by. It simply didn't collect the type or volume of data that meant this was high up the agenda. That is changing and the property industry now needs to start building the ethical use of data into their thinking and in everything that they do.

It is worth considering where data ethics fits into the sector's wider approach to data and why some organisations think they have the ethical aspect covered but in reality, are falling short.

In recent years, a lot of time, effort and expense has been applied to identifying what data can be collected – what companies can actually get their hands on and how. More is available today than ever before. A lot of time is also spent, quite rightly, considering the legalities of how they use data and what they are allowed to do with it.



For example, most organisations are familiar with the General Data Protection Regulation

(GDPR), although there are lots of other rules and regulations about what they can and cannot legally do with data. Data ethics is about more than operating within the limits of legislation, it is the 'should we' question for data. Should we collect it, should we trust it, should we use it?

As we will go on to see, ethics is much more complex, subjective and fast moving, but it is no less important.

WHAT IS GDPR?

The General Data Protection Regulation (GDPR) is a legal framework that sets guidelines for the collection and processing of personal information from individuals who live in the EU. It applies to any company that collects data on EU residents, regardless of its location. It came into effect on May 25, 2018 and set out several key principles which were designed to guide how people's data should be processed.

The UK GDPR came into effect on 1 January 2021, following the end of the Brexit transition period. It sets out the key principles, rights and obligations for most processing of personal data in the UK. It is based on the EU GDPR, with some changes to make it work more effectively in a UK context.

Source: ICO, Wikipedia, Investopedia

Setting ethical standards – The IESC

Originating at a meeting at the United Nations in October 2014, the purpose of the International Ethics Standards Coalition (IESC) was to create an ethical framework for the global property market. It consists of 100 global non-profit organisations across the land, property, construction, infrastructure and related professions, who were brought together to create one shared international ethics standard. The IESC aims to assert and sustain the critical role of ethics in professional practice to meet the needs of the global market and to maintain public trust and confidence. After the initial meeting, the member organisations formed an independent Standard Settings Committee to develop global ethical standards. The IESC set out ten ethical principles for practitioners:

- Accountability
- Confidentiality
- Conflict of interest
- Financial responsibility
- Integrity
- Lawfulness
- Reflection
- Standard of service
- Transparency
- Trust

Source: IESC

But why should property businesses care about data ethics? Setting basic morality aside, companies that choose to neglect data ethics not only risk damage to their own external reputation and brand, but they will also be contributing to a general mistrust of the sector as whole and restricting future growth opportunities.

Yet the response from many businesses today about the topic of data ethics is either that it is not their problem or they have it covered under their GDPR policy. Neither of these are sufficient responses.

1.2 Why now? A perfect storm

We are entering a perfect storm where the scope, sophistication and connectivity of data is increasing exponentially. This brings many advantages for Real Estate, but also many new challenges.

Focus on people

One of the most significant shifts in the property sector today is the increased focus on people. Employers are seeing buildings differently. They have stopped thinking about building an office just as a location for people to work, instead they are thinking about how that building affects the well-being of their staff: their productivity, their health and their happiness.

A faster industry

The Real Estate market is slow to move, it takes a long time to construct a building, leases stretch over many years and purchasing a building happens infrequently in comparison to some other consumer driven markets. However, everything is speeding up: thanks to development in technology and market and Governmental pressures, planning permissions, lease

renewals, investment decisions and the conveyancing process are all getting faster.

Brand awareness

Brand, what people think and feel about something, is becoming more important in the Real Estate world. As a company's brand becomes more important in property decisions, so does managing it. The way in which a property company operates its business and treats its customers and staff will affect how it is seen by them. In turn, the way in which companies collect and use data will also have an impact on its brand and its reputation.

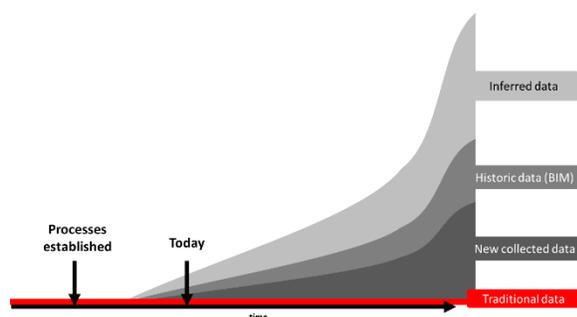
Misuse of data beyond Real Estate

Recent, high profile examples of the inappropriate use of consumer data have highlighted some of the ethical issues surrounding data use by businesses across sectors – including property. This has made the general public more alert to the fact that data can be used to influence business or political decision making. As a result, the treatment of data by organisations is increasingly on the radar of consumers and influencing purchasing decisions.

Availability of data

It seems that everything collects data these days. IoT systems, mobile devices, cameras – they all collect data that can be used to inform decisions about a building, it's location or the people within it. Never before have companies had so much data at their fingertips to interrogate and use. The diagram on the next page shows how the sector is at the early stages of a tidal wave of new data becoming available for use in the property decision making process. Not only are companies collecting ever more

data, but they are also getting better at storing it and using alternative data sets (inferred or proxy data).



More complex and specialist data

As technology becomes more complex and more and more data sets are utilised, data use and the necessary skills become more specialist. A property professional in the past may have understood where all of the data came from that they used to inform their decisions. However, the property professional of the future can't possibly be expected to understand the millions of data points, thousands of data sources and hundreds of calculations and algorithms that go into the digital tools they will be using, or that are embedded in the fabric of the land and building they work with.

Today's perception of property

For all sectors, the ethical use of data will become a key element in protecting the sector's reputation into the future. The property sector already has a low trust legacy so it is perhaps even more important to get on the front foot with data ethics from a reputational perspective.

SO WHAT? *As all these factors come together at the same time, Real Estate arrives at a point when individuals and organisations should urgently consider how they collect and use data in an appropriate and ethical manner. In a*

world where a single tweet can reach a million people in a minute, failure to do so risks enduring financial and reputational damage to their business and brand.

1.3 Here and now

Challenges that other sectors have faced from the ethical use of data are well documented, but for real estate, it is not just something for the future. Data ethics is here and now, and examples of this and the impact on businesses can already be seen today.

Whether it is local concerns around the use of data such as in Torontoⁱⁱ, controversy over the use of Facial recognition at developments in Londonⁱⁱⁱ, or fines over keeping data in Berlin^{iv}, examples of data ethics in real estate are all around us.

Whilst these may not have had the dramatic impacts that we have seen in other sectors, data is part of a pervasive technological revolution and we can expect the experiences of other sectors to move into property.

A badly designed algorithm that is a problem for a consumer business today will be equally problematic if similar technology is used to manage a building tomorrow. We need to be ready for them now.

As ESG rises up the agenda for both society and companies, even more scrutiny will turn to how we use data at exactly the same time as we are facing exponential growth in the data available to us.

SO WHAT? *Problems that have been seen in other sectors will come to Real Estate and any organisation operating in this space, especially that considers ESG important, should be addressing their ethical use of data today.*



CASE STUDY - Perception - Sidewalk Labs

In 2017, Google affiliate Sidewalk Labs announced plans to build a high tech, smart city on the Toronto Waterfront. Two years later, it published details of the plan which included the development of a 7.8-hectare site on the quayside, including mass timber housing, heated and illuminated sidewalks, public Wi-Fi, supported by a host of cameras and other sensors to monitor traffic and street life.

But the company immediately came under criticism from privacy experts and local residents who objected to Sidewalk Labs' approach to privacy and intellectual property.

Sidewalk Labs provided details in their plan of an independent data trust that would set the rules around data use, make it accessible and offer privacy protections. The trust would also ensure the company would not receive any special status or rights when it comes to data access.

Sidewalk Labs also promised not to sell personal information, use such info for advertising or disclose the data to third parties without explicit consent.

Despite these reassurances, it was reported that Waterfront Toronto required further information from the company on data collection and use and digital governance and wished to review the plan and seek public feedback.

In May 2020, Sidewalk Labs ended the project stating economic uncertainties arising from the Covid-19 pandemic, which meant the smart city project was no longer feasible.

This example demonstrates the concerns of society from buildings or public spaces collecting significant amounts of data and its ethical use.

Source: The Guardian

CASE STUDY - Employee data – Barclays

Barclays were criticised by employees, HR professionals and privacy campaigners in 2020 when it introduced computer software to monitor how long staff spent at their desks. A source at Barclays said the tool was used to monitor the "effectiveness" of people's time at their desks. However, the bank faced a backlash from staff when the software was piloted in its investment banking division in London.

According to the newspaper City AM, the system told staff to "avoid breaks" and recorded activities such as toilet visits as "unaccounted activity", leaving staff concerned about leaving their desk to take toilet or lunch breaks. Following the media interest, Barclays said that they had always intended to listen to feedback from colleagues about the pilot and the tracking system had been scrapped.

Source: BBC and City AM

1.4 COVID-19

It is hard to write a paper in these times without reflecting on if, and how, Covid-19 has had an impact on the sector from a data ethics perspective. In these unprecedented times, we have seen much more personal data being collected, whether it is at a pub, a restaurant or the office. We have been providing our contact details and sharing who we are for contact tracing, as well as having our temperature taken to ensure we are free of symptoms. For all of the clear benefits of collecting data in the current situation, how would we have felt about this a year ago?

And how will we feel about it if these intrusions are still in place in a year's time, or we need a 'Covid Passport' to buy a pint?

The ICO^y has advised businesses to be proportionate in what they collect, if it feels excessive to the public, then 'it probably is'. But what happens when the pandemic is under control, what does proportionate mean in the future? Whatever happens, property owners and managers will need to make a judgement on what data is ethical to collect and keep and when the circumstances change to mean that this is no longer the case.



Dr Sue Chadwick, Strategic Advisor, Pinsent Masons LLP and Research Fellow ODI

Why is data ethics important to the Real Estate sector and why should people care?

The world is changing very quickly at the moment and the Covid-19 pandemic has only increased the rate of change in areas such as shifting work from office to home, online retail and lives where the primary connection is digital rather than physical. Emerging research suggests that existing inequities have also been magnified by the pandemic. It has had disproportionately negative impacts on lower income and minority populations, but for a few people in the right industries it has generated wealth and facilitated expansion. Digital transformation is knocking on the door of the property industry and it's really important that we are open to the challenge but at the same time ensure that benefits are not secured for the benefit of few and at the expense of many. Digital ethics are a key element in making sure this does not happen. They will also be increasingly important for companies who want to show good ESG credentials and promote developments that can be supported by local authorities - there are business reasons to care too!

What are some examples of data ethical challenges in your area of expertise / knowledge?

The most obvious one is smart engagement. In many ways this is a step forward, as it means that consultation and engagement can be built into the entire life of a project and take into account the views of future occupiers as well as the existing population. But there is a risk that key elements of the population - anyone without digital connectivity or skills - are silenced by default if we don't ensure that they are included too. Sensory technologies are another big issue - they offer a range of benefits, including enhanced security, congestion management and public health - but this should not be at the expense of personal privacy. Finally, as the scale and scope of AI technologies improves, we need to be aware of the risks of using powerful, but non-interpretable algorithms to make decisions that affect people.

What do you think needs to happen to ensure the ethical use of data in Real Estate?

The first step is acknowledging that the technological revolution isn't some vague future concept - it is right here, right now, and the property sector is ripe for disruption. Next, we need to adopt some industry-wide principles about how we manage, store and share data rather than find it effectively outsourced to app developers. Finally, there is a role for government in either setting or endorsing these principles, in the same way that they supported emerging concepts of sustainable development in the 1990s.

2. ETHICAL DATA COLLECTION

Before any analysis can be done, first you need to collect data. This is in itself a multifaceted and complex topic with a range of different ethical challenges that must be considered.

2.1 Direct collection

The most obvious place to start is with data that businesses collect themselves. This might be company data, employee data or data from a specific building or product that they manage. There are many privacy challenges that crop up here, many of which are covered by laws, but there are also some ethical issues to consider.

As we have already discussed, buildings are evolving into smart digital platforms, no longer are they just dumb concrete blocks. With cameras, sensors, and connections all over the building, organisations are now able to collect more information about staff and the users of their buildings than ever before. There are of course many benefits that can be taken from the analysis of this data, but companies need to consider whether they should be collecting as much data as they do and why. Even in circumstances where businesses are legally allowed to collect data, they should still question why they are doing it and whether they should. If there is no immediate, or potential benefit from the collection of data, should they be collecting it at all?

As an example, many would agree that in the office market, the role that the building has to play in well-being, attracting new employees or productivity is becoming more important. It therefore follows that Real Estate businesses should be collecting more information on their staff and the building to better understand the relationship between the two. However, this type of data can be very personal information about the people using the building which raises a range of questions about privacy.

Businesses therefore need to consider what data to collect in an age when they can gather far more personal details than in the past. It is now possible to have access to facial recognition, record people's temperatures, provide them with health trackers, track the number of keystrokes of an employee and view their work history. All of this information could be combined with external data sets, either generalised data such as typical demographic information or personalised data such as social media activity.

The effective use of all of these data sets will help inform the performance of a building, and therefore in time the value of it, but it could also expose an individual to having intensely personal data used and shared without full and informed consent. Should employers, building managers or owners be using all of these data sets all of the time?

“You can use all the quantitative data you can get, but you still have to distrust it and use your own intelligence and judgment”

- **Alvin Toffler**

2.2 Third Party Data

Property businesses are increasingly reliant on third parties to provide the data that they use to support their day-to-day decisions, however it is important that they step back and consider if and how they should be using these. There are a number of questions that should be asked:

Is it appropriate? Data that works in one context can be inadequate in another. Let us look at data about building height as an example. A rough estimate of the height of a house to the nearest meter, collected a few years ago, may be perfectly adequate for a logistics company to estimate delivery times to

the building, but it would not be accurate enough for other applications, for example the construction of a new building, which needs much more accurate and up to date data. Different applications require different data characteristics, but how does the property professional of tomorrow ensure that they are using the appropriate specification of data that they need. Should they be using the building height data that is not accurate enough for what they need it for? Probably not, but who is responsible for deciding what is accurate enough? A property professional cannot reasonably be expected to define data specifications and requirements and compare these for all potential sources. Conversely, if a data provider provides a data set to a widely available and published specification, how can they be expected to take responsibility for how that data is then used?

Is it true? As we move into an age of AI and ever more sophisticated technology, how do businesses know that information is not only trustworthy, but also real? We base trust on the source of the data, either an individual, or a brand. However, we can see that technology is increasingly making this difficult to understand. A good example of this is the growing rise of deep fake videos where technology allows you to effectively put your words into someone else's mouth. The technology has some way to go, but public mistrust of what they see is already established and relevant to the property industry.

As an example, we can consider the influence that research reports often play in Real Estate companies' decision making. Whether looking to occupy, buy or value a building, there is a good chance that property professionals will at least keep an eye on the market by reading a range of different reports. These will be produced by different organisations with different agendas, different data and different

people. It is unlikely that a decision would ever be made based on reading a single report in isolation, but there is little doubt that these reports influence decision making to some degree.

But what happens when these reports are created with a hidden agenda, through the application of technology? On the surface they could look perfectly credible, but in reality, they may have been completely fabricated. It is relatively straight forward for someone to create reliable looking reports from respectable looking institutions, saying anything they like in a matter of minutes, using random name generators, logo creators and report writers. Perhaps even more striking is that these can be authored and endorsed by what appear to be real people, but again these can be rapidly created with name generators and AI technologies. As an example, none of the individuals in the images below exist; they are not real people^{vi}. They are created by technology using vast number of images to create new ones. In an age where lifelike images of people can be readily created, how do we know that we can trust them?



SOURCE : thispersondoesnotexist.com

Has it been manipulated? We have so far considered whether the use of third-party data is appropriate and whether it may be ‘faked’, but we also need to consider whether data is being manipulated and whether it can be trusted or not.

An interesting example of this is the use of traffic data. Traffic, and therefore data about traffic, can clearly be useful in making property decisions. For example, a warehouse may be of less use, and therefore less valuable, if there are permanent traffic problems preventing deliveries being made. An insight into the traffic levels at any one point would be useful to inform decision making. But traffic data could also be used as a proxy, to represent something else. For example, if there is heavy traffic outside a building all day, it may be reasonable to assume that there will be increased levels of air pollution around the building. In this instance, traffic data may be used as a proxy data set for air pollution.

However, how do we know that we can trust the traffic data? A great source of live traffic information is Google Maps, but can it be manipulated? In early 2020, a performance artist pulled a cart of phones around the empty streets of London which showed up as traffic jams on Google maps, illustrating how the live data could be exploited. The technology used as an exercise in performance art today could be used to manipulate fake traffic data for a planning appeal tomorrow.

Another example could be the use of new forms of data to inform decisions in the retail market. An important factor in retail is footfall and we are seeing many new ways of measuring this. These methods all have their upsides and downsides, but if we are getting the data from a third party, how do we know that the data isn’t being manipulated to achieve a particular outcome? Mobile phones can be tracked and in exactly the same way as the traffic case study

above, if you were looking to inflate the apparent footfall in a shopping centre, why not ask a small number of people to carry around several mobile devices?

Data on footfall, catchment areas, planning applications, traffic, car park usage, in store payment, sentiment are all becoming used to inform decisions about retail and the opportunity to manipulate all of these exists.

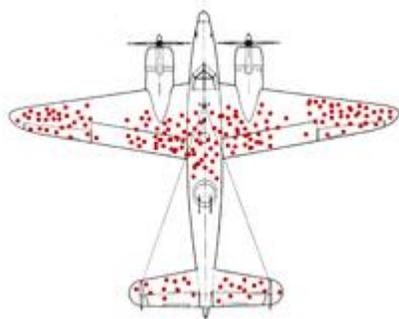
Is it biased? We have considered where data is intentionally manipulated, but this can also inadvertently happen. The selection of the sample of data to use or test is in itself a substantial data science and statistics topic, and we will not look to cover this in any significant depth. However, it is important to mention this topic to ensure that it is considered in the property sector’s thinking moving forward.

There are many challenges with selecting a data sample. Different demographics may respond to surveys in different volumes, two data sets to be compared may not be equal or a sample may simply be too small to provide robust answers. All of these might lead to the appearance of credible data that is skewed in one way or another. The question is whether these data sets can be trusted and whether they should be used.

The above examples are relatively common-sensical, but whilst information about the data is likely to be available, property professionals often do not have the robust processes in place to make sure that the samples are fair.

We can use an example from outside property to demonstrate the point. During World War II, the American military wanted to consider how to best protect their planes from being shot down. Reinforcement of the whole plane was not possible due to weight, so they examined where planes were most often hit after combat. As can be seen from the diagram below^{vii}, this

clearly showed the wings, the tail and the body in most need of reinforcement.



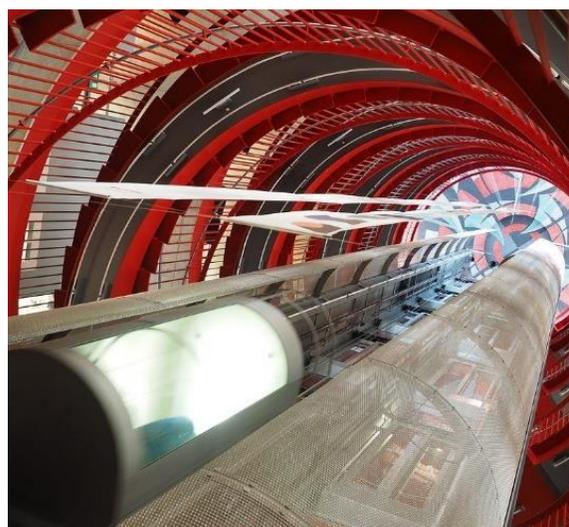
Mathematician Abraham Wald was asked to look at the work and he realised that the data was suffering from ‘Survivorship bias’. By only considering returning planes, they had missed out those that were hit and did not make it back. The results that initially appeared to suggest where needed reinforcing were in fact highlighting the areas that did not need reinforcing.

Is it really anonymous? Anonymous data is when personal, identifiable information is removed from data sets so the people whom the data describes remain anonymous. There is often a feeling that anonymous data avoids many of the ethical challenges that we face from data. Certainly, it helps avoid several situations, but there are examples where anonymity may not be as simple as it sounds.

As an example, a company might use proximity sensors in an office building to measure activity. This might be for the purposes of efficient lighting or to compare usage levels across different parts of a building. If these sensors only identified movement, it would create a data source which did not identify any individuals. However, what if access to the building required a card-based system and only one person was in the building? By combining these two data sets, you can now identify the full movement of a person around a building, at least where proximity devices were available.

Of course, only one person in an office is an unusual scenario, but the principle is that as we have more and more data about individuals’ locations, we can increasingly combine them to get additional insights. The ethics of this is difficult. Most people would be more comfortable having their data collected if it were anonymised. By combining several data sets, property owners and managers can gain more insights into a building’s performance, but they risk eroding the trust of the building’s users.

Data ethics are, however, relatively subjective and situation dependent. For example, would it be ethical for a residential property manager to place cameras in each flat so that they could keep an eye on residents? Most people would at first glance think not. But, if the same technology were offered as a way of keeping an elderly relative safe in their home but only monitored for falls or other health crises, perhaps more people would consider that acceptable and feel that this was a more ethical use of data than it first appeared.



In the retirement home example, should this data be anonymous? If it were, then the manager would be unable to identify who has a problem, defeating the whole point of a monitoring system. In order to respond to a fall,

the manager clearly needs to know whose flat or room it is, so some level of anonymity has to be lifted and the issue of consent and transparency becomes critical. Privacy could perhaps be protected if the data output is restricted to recording the amount of time between movement within the room. A time period longer than expected without movement would trigger an alarm.

However, as with our earlier office example, the manager could determine which flat someone is in and then combine this with other data sets to get further insights.

SO WHAT? Should we collect data and should we use it are two of the most challenging questions that the sector will face in the coming years. It is essential that these questions are built into today's thinking.

CASE STUDY – Facial recognition – King's Cross

In August 2019, the Information Commissioner's Office launched an investigation into the use of facial recognition technology in the King's Cross area of London. This followed a report in the Financial Times which revealed that cameras using facial recognition technology (FRT) were in operation in the area.

The Data Protection Act 2018 is applicable to all uses of FRT, both private and public, and is enforced and regulated by the Information Commissioner's Office (ICO).

Following the reports, the Information Commissioner, Elizabeth Denham, said in a statement: "Scanning people's faces as they lawfully go about their daily lives, in order to identify them, is a potential threat to privacy that should concern us all. That is especially the case if it is done without people's knowledge or understanding."

Denham also warned that any organisation wanting to use facial recognition technology had to comply with the law - and they had to do so in a fair, transparent and accountable way. They must have documented how and why they believed their use of the technology was legal, proportionate and justified.

Argent, the developer behind the King's Cross site, confirmed in a letter to London Mayor Sadiq Khan that the surveillance software had been used between May 2016 and March 2018. It also confirmed that it had abandoned plans for a wider deployment across the 67-acre site and did not plan to reintroduce any form of facial recognition technology at the King's Cross Estate.

According to Argent, the FRT system was never used for marketing or other commercial purposes. The system was used only to help the Metropolitan Police and British Transport Police prevent and detect crime in the neighbourhood and ultimately to help ensure public safety.

However, this incident highlighted the ethics of FRT, the negative publicity its use can attract, and the discomfort felt by many people when tracked without their consent. As facial recognition becomes more widely available, this is something that must remain at the top of the agenda for any company managing a building or public space.

Source: BBC, ICO, Financial Times

Simon Hayter, Group Head of Data, Knight Frank

Why is data ethics important to the Real Estate sector and why should people care?

Data ethics is important in all sectors in particular Real Estate. Data ethics is often associated with GDPR and marketing only, however within Real Estate the amount of data used covers a vast number of touchpoints. It's not just about individual's data but environmental, buildings, geographical, movement, communities etc. Data Ethics should cover how all of this data could be used to benefit society and individuals whilst balancing the need for individual privacy. With the increase of IoT and Smart buildings and cities then the subject will only get bigger. I think Real Estate should be one of the industries with a leading voice in this area.

What are some examples of data ethical challenges in your area of expertise / knowledge?

As mentioned before I think the challenge is a narrow focus on GDPR and simply meeting legal requirements. The wider discussion can often get lost by focusing on a specific requirement, that is very important, but won't cover every aspect of data usage. Balancing the rights of the individual with the benefits of society is an interesting topic to debate and consider. For example, where do the boundaries of private and public space start and end? How will IoT change the landscape with different products and services? The biggest challenge I see is the speed in which technology and consumer demands are moving compared to defined laws and principles that take longer to be aligned to a changing social acceptance of how data can and should be used.

What do you think needs to happen to ensure the ethical use of data in Real Estate?

For me, the most important thing is to ensure that data ethics isn't treated as a standalone topic. The Real Estate industry should ensure it has ethical principals in the way it conducts itself and data ethics should align with these wider ethics and principles. Ultimately it comes down to trust and integrity, both as an industry and for the individual organisations and companies that operate within it. How should the Real Estate industry treat customers and clients and how do data ethics and principles align to this? If they don't align then why would they be taken seriously? A combined effort between multiple and diverse organisations (both public and private) is needed to ensure the industry is consistent in how it uses data.

The background features a complex, abstract pattern of red and black. It consists of numerous thin, wavy lines that create a sense of depth and movement, resembling a perspective view of a tunnel or a series of parallel paths that curve and converge. The lines are densely packed and have a slightly blurred, glowing quality. The overall effect is a dynamic, almost hypnotic visual that suggests data flow or digital connectivity.

3. DATA USE

In the section above we explored the ethics of selecting and collecting data, but we also started to identify ethical challenges of combining data sets with others. In this section, we will further consider some of the ethical challenges of how we use the data that we have collected.

3.1 Handling Data Algorithms

Firstly, we will look at how property businesses apply technology to their decision-making processes. For this example, we will look at a property valuation company. It is now possible for a valuer to ask a computer to carry out a number of steps to provide an outcome. Specifically, it could create an Automated Valuation Model (AVM) which uses multiple data points to estimate the value of a property. The valuation process is often described as an 'art, not a science' and therefore might be seen as subjective. However, if most clients would prefer an objective view, the use of AVM's could offer this. The AVM is dependent on algorithms that are built and applied in the background of the software, but who programs these? If it is the valuer, can they be expected to have the skills to build a robust algorithm and if not, how do we ensure that an algorithm does not just replicate what has happened in the past, which in turn means that any prior biases become more deeply hidden in the technology?

As we extend this example further, we can move into the world of 'Artificial Intelligence' (AI) and 'Machine learning' (ML) where the computer is constantly learning from the data it has access to, in ways that may not be understood or easily explained.

This again raises the question of whether an algorithm can be trusted. Let us assume that an 'AI AVM', uses more and more data and constantly learns and adapts to give the very best insight and estimates. How does a valuer make sure that they understand all the processes and data being used, as they are required to do in today's structure, to make sure that it is giving a fair output?

Real Estate is going to have to address the fact that much of the way that the sector operates today is based on individual property professionals taking transparent responsibility for their output. This will not be tenable in the future if increasingly complex, varieties and scales of data are used to support the best and most informed decisions. Without a fundamental change in approach, Real Estate professionals will be forced to decide between two mutually exclusive positions; compliance with today's rules and regulations or providing the very best insight as represented in the diagram below.



3.2 Software applications

The use of different data sets and the analysis of them has so far been considered, but the Real Estate sector also need to be aware of the ethics behind how these are applied. We can look to another sector for an example, this time technology company Uber. Uber reportedly designed a software program called 'GreyBall'^{viii}. This piece of software used a number of different types of data to help support the Uber business, for example from people unlikely to pay or that might threaten their drivers. Most people would agree that the application of data analysis to protect your business and employees, or in this case drivers, is an ethical use of data. However, it became apparent in time that the same piece of software, using similar data sets, was being used to avoid regulators. The same software, the same data but a different application which most people would agree could be considered unethical. See case study below.

As the Real Estate sector collects more and more data, it needs to ensure that data applied for one purpose, that may be widely considered as ethical, is not then applied in alternative ways for different, unethical purposes. Ensuring that data collection and the way it is used is ethical is not enough, we also need to make sure that the purpose is ethical as well.

SO WHAT? Using ethical data is not enough. How it is applied, in what situation and for what purpose must also be considered. Furthermore, what a single person can be accountable for must be considered within regulations and standards and technology solutions to this challenge should be explored at a sector level.

CASE STUDY – Software – Uber

Uber's use of technology came into question in March 2017 when the New York Times reported that the company had been using software called Greyball to avoid regulators from shutting the company down in several cities across the world.

The New York Times report suggested that when local regulators attempted to track down drivers who were operating illegally, Uber used Greyball to show them an alternative version of the Uber app. It explained that Uber employees used a number of techniques to establish whether the user was linked to an institution or law enforcement authority. This included checking credit card information and tracing the smartphones that city officials used to catch the company's illegal drivers.

If law enforcement users were suspected, they were tagged. When that individual called a car, Uber could reportedly scramble a set of ghost cars in a fake version of the app for that person to see or show that no cars were available for hire.

Uber initially defended the use of Greyball, saying its purpose was to block users who the company believed were in violation of its terms of service agreement, such as people seeking to harm its drivers or disrupt its operations. However, Uber later acknowledged its use for broader purposes, saying in a statement that they were 'prohibiting its use to target action against local regulators going forward'.

These activities impacted on Uber's UK operations when in September 2017, Transport for London announced that Uber would not be issued with a private hire operator licence when their current one expired at the end of that month citing Greyball as a factor in this decision.

Source: New York Times, The Independent, Transport For London, Uber

EXPERT VIEW



ROYAL
HOLLOWAY
UNIVERSITY
OF LONDON

Dr Tom Wainwright, Director of Education Strategy at Royal Holloway, University of London

Why is data ethics important and why should people care?

Data ethics is becoming increasingly important as data is used in new and novel ways in Real Estate, with the potential for unintended impacts. Ethical data use can shape an organisation's relationships with multiple stakeholders, from investors to PRS tenants and everyone else in between. Unethical data use can potentially introduce preventable business risks. On the one hand, it is ethical practice to protect the rights of individuals and to recognise that while data is 'neutral', its unethical use can have material impacts on the lives of tenants, even if unintended. This could affect tenants through accidental data leaks and hacks, or algorithms encoded with unintended bias. On the other hand, regarding reputational risk, existing and potential customers may vote with their feet and avoid platforms that are seen to use their data unfairly or unethically. Similarly, investors are becoming increasingly interested in ESG issues, where unethical data use could make a business appear less attractive. As many data-driven businesses look to grow and scale, shaping the lives of more tenants and raising more investment, the potential impact of ethical data is becoming ever greater.

What are some examples of data ethical challenges in your area of expertise / knowledge?

I'm in the process of completing a project which examines the growth of the rental PropTech sector. These innovative, data driven ventures offer economic efficiencies over traditional letting agents, while promising speed and convenience to both landlords and PRS tenants. In contrast to high-street agents, rental PropTech start-ups are using increasingly rich sources of data, for example, open banking data for affordability checks. However, it could be possible for a landlord to access a tenant's bank transaction data to make tenancy decisions. This has not yet happened to my knowledge, but there is interest from some landlords in accessing more granular open banking data. Following the pandemic, as people move to more cashless transactions, data is getting richer. Subjective renting judgements beyond affordability could be made: how you spend your money recreationally, which charities, political, or religious groups you donate to, which could lead to discrimination. While PRS tenants legally have a right to privacy in their accommodation, their digital self is not necessarily guaranteed the same benefits. In a more automated context, there is also the potential for algorithms to be unintentionally encoded with biases which may affect particular groups of tenants. A key challenge facing the industry concerns balancing the benefits of advanced data use, without undermining the rights of tenants through unethical use of their data.

What do you think needs to happen to ensure the ethical use of data in industry?

As rental PropTech start-ups seek to grow for survival, or are funded to scale at speed, it is understandable that there are resource and time constraints, and that considering data ethics may not be an immediate priority. However, as data is being used in new ways, the effects of algorithms and data-driven processes are not yet known. To promote and support the industry's growth, and its ethical use of data, sector wide principles such as the RED Foundation Data Ethical Principles and codes of conduct would be beneficial, developed by PropTech businesses and wider stakeholders, such as tenant groups. These could include guidelines on how types of tenant data are collected, used and shared, while providing transparency to tenants on how their data is used, how it can be amended, opt outs and a right to be forgotten. Guideline compliance alongside a recognised award system could be used to promote consumer confidence. Education and supportive tools are needed too, along with supportive workshops to assist start-ups in considering how data ethics fits within their business, and how they can manage the risks and rewards of data within real-estate.



The Locus Charter: Using location data

Location is key to business intelligence for companies across all sectors, none more so than Real Estate. As the collection and application of location data continues to grow, so does the debate around people's privacy and it is vital that companies collect, share and use the data responsibly.

In March 2021, The Locus Charter was launched by an international collaboration of governments, organisations and individual practitioners, looking to ensure the ethical and responsible use of location data throughout the world.

The Charter, facilitated by The Benchmark Initiative and EthicalGEO, is a proposed set of common international principles that can guide responsible practice when using location data. It is aimed at individuals and organisations that use location data or are responsible for activities that create, collect, analyse or store location data. Member organisations include the American Geographical Society and Great Britain's mapping agency, Ordnance Survey.

The Charter proposes a wider, shared understanding of the risks and solutions relating to the use of location data, to improve standards of practice, and to help protect individuals and the public interest. It aims to ensure trust in location technology to help improve public health, enhance the response to the Covid-19 pandemic, fight climate change, protect the environment and more.

Source: EthicalGeo

The Alan Turing Institute: A guide to AI Ethics

Artificial Intelligence (AI) is no longer just a buzzword being thrown around the boardroom. The application of machine learning through software and data algorithms is becoming more commonplace across all parts of life. Innovations in AI are starting to change the provision of social goods and services by governments. For example, they have the potential to help solve government challenges from healthcare provision to environmental management. Whilst this may be hugely exciting, there are also concerns that such a new and fast changing technology will not always deliver the best outcomes.

With this in mind, the Alan Turing Institute's public policy programme partnered with the Office for Artificial Intelligence and the Government Digital Service to produce guidance on the responsible design and implementation of AI systems in the public sector. The guide, 'Understanding Artificial Intelligence Ethics and Safety' identifies the potential harms caused by AI systems and proposes measures to counteract them. The guide stresses that public sector organisations can anticipate and prevent these potential harms by stewarding a culture of responsible innovation and by putting in place governance processes that support the design and implementation of ethical, fair, and safe AI systems. It is hoped that the guide will encourage civil servants to prioritise AI ethics and safety when conducting AI projects.

Source: The Alan Turing Institute



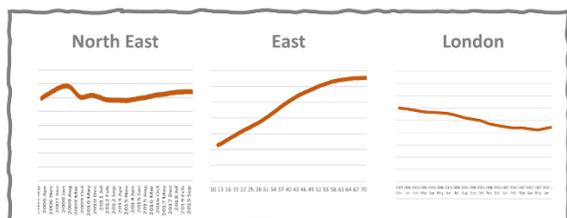
4. DATA COMMUNICATION

4. Data Communication

The expression ‘There are three kinds of lies: lies, damned lies, and statistics’ was popularised by Mark Twain and suggests the final and critical ethical challenge that we will consider in this section: how we present and communicate the data analysis that we have carried out.

It can be easy to adapt the communication of data to a pre-determined narrative, whether on purpose or not. This is particularly the case in one off presentations or calculations, rather than an ongoing series. It is very important that data is presented in an objective manner, however, if it is a person selecting the way that it is presented, how can this be guaranteed?

As an example, we might look at a trend of house price data in the UK. In this case, taken from the Office for National Statistics data and comparing three different regions; North East, East and London.

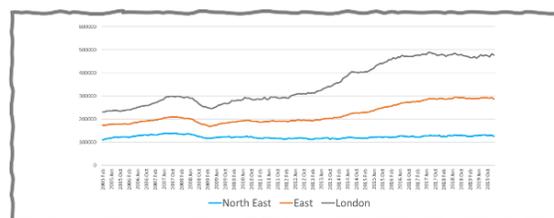


“There are three kinds of lies: lies, damned lies and Statistics”

- **Mark Twain**

At first glance the North East looks to have high and relatively stable prices, the East has high prices that have grown substantially in recent years and finally London has both the lowest prices that are also in decline.

Of course, this narrative does not really match reality and whilst all the data displayed above is accurate and not itself manipulated, the time frame and axis have been altered meaning that they are not like for like comparisons. If we now explore the same three data sets on the same graph (below), we can see that the initial ones were manipulated to tell a disingenuous story.



If data analysis is to be trusted it is vital that it is communicated in a transparent and ethical manner. However, companies spend little time considering if and how they could do this to prevent intentional, or more likely unintentional use of data to prove a pre-conceived idea.

SO WHAT? *Real Estate must consider the challenges of presenting data sets in an ethical manner. This needs to include not only the final output but everything that feeds into it, so there is sufficient transparency for the person responsible for end communication.*

CASE STUDY – Data breach – Facebook and Cambridge Analytica

In 2018, it was reported that Facebook experienced a major data breach when the personal data of millions of its users were collected by political consulting firm Cambridge Analytica. This was revealed by a former employee of Cambridge Analytica who gave details about the breach during interviews with The Guardian/Observer and the New York Times newspapers.

It was reported that Cambridge Analytica collected and kept data on 87 million Facebook users without their permission. They gathered this data through a third-party app called 'thisisyourdigitalife' created by a Professor of Psychology at Cambridge University.

The app was downloaded by nearly 30,000 people giving Cambridge Analytica access to their data and their friends' data. This reportedly included information such as where they lived and what Facebook pages they liked, which were used to build psychological profiles. It was reported that the Trump campaign used this data for ad targeting as part of its digital campaign.

Facebook apologised and its CEO was questioned by Congress and fined 5 billion US dollars by the Federal Trade Commission. Cambridge Analytica suspended its CEO and in September 2020 the UK Insolvency Service banned him from serving as a Company Director for seven years as a result of his 'potentially unethical behaviour'.

Following the scandal, public trust in Facebook plummeted. A study by the Ponemon Institute, a think tank, found just 27% of people thought Facebook would protect their privacy, compared with 79% in 2017. Whilst much of the focus of this incident was on legal privacy issues, it is clear that the ethics of data use also came into question and highlighted the need for strong ethical frameworks to be in place when gathering individuals' personal data in every sector of the economy.

Source: The Guardian, New York Times, NBC News

5. DATA BEHAVIOURS

In the previous sections we explored the ethical challenges around the collection, use and communication of data. There are three behavioural principles that should be applied to all thinking with regards to the use of data:

5.1 Transparent

It is essential that when it comes to collecting and using data, companies are transparent about what they are doing and why. Of course, this is most important with personal data, but it should apply to all data sets.

This is easier said than done, however, as there are several factors to be considered, including:

- **Openness** – it may be ethical to tell people exactly what data you are collecting and why, but as the volume of this grows and changes quickly, how is it possible to continue to do so, especially when multiple new data sets may be rapidly tested and discarded to see if there is any benefit to their use.
- **Commerciality** – even if it were possible for companies to communicate all of the data being used and how, would they want to? In many cases, the way data is used is a commercial differentiator and companies quite understandably do not want to share this with everyone.

Once the data being used and the surrounding principles have been identified, they need to be put in a format that is simple to access and communicate. However, how realistic is it for a non-data specialist to understand the implications of what they are reading? If a valuer is using an AVM to help generate the valuation of a building, can they realistically be expected to read through documentation of data specifications, multiple data sets being used and the context of how the algorithms were designed for each valuation they do?

How do we ensure that not only is information available for people to find out about the data being collected, but that it is communicated in a sufficiently transparent manner so that permission was appropriately given for the data to be collected in the first place? For example, as a person walks into a building, or a public space, how does a property manager or owner ensure that each person is given sufficient information about the data that is being collected about them?

“As our industry looks to take advantage in the acceleration of devices which capture information (from IoT, laser scanning, Geo Spatial...), we do need to take a side step to ensure we are maintaining the confidentiality, availability and integrity of the data. We’re often the custodians of our client’s information and as such need to be treated with the right controls, no different to other classes of electronic data. The value chains within the Real Estate sector may have many actors across the lifecycle from the built environment, surveying to property management, and as we capture and look to utilise the information, a standardised approach will only benefit us all. We can also learn from large technology enterprises such as Microsoft with their approach to a secure common data structure to help improve the way we integrate with our internal and client systems. Improving data ethics and standards and embedding them into all our firms’ cultures will help build confidence and assurances in the industry and allow us to take advantage of the opportunities it will bring.”

- Tim Spencer, IT Director Carter Jonas



5.2 Proportionate

Proportionality depends on context. A year ago, taking a person's temperature when they entered a building may have seemed excessive and not proportionate, however, since the Covid-19 pandemic, we have seen a sharp increase in this practice. In this context, many might consider this proportionate and ethical, even welcome.

Proportionality does not just apply to the data collected, but how it is used. If we return to an earlier example of how the value of a building is going to be increasingly related to the impact on the health and wellbeing of a person, should we consider using the temperature data to inform valuations models?

There is certainly an argument for the AVM of the future to consider data sets about the occupier's temperature, happiness, productivity or health, but whilst this may, strictly speaking, increase accuracy, is it going to have a significant enough impact for its use to be considered as proportionate?

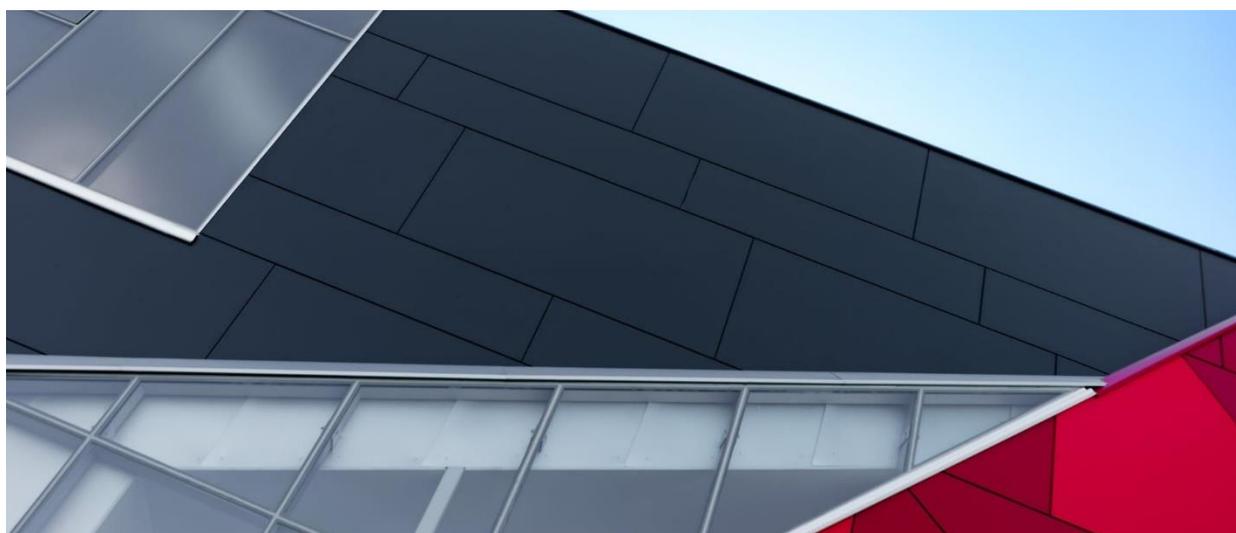
5.3 Accountable

The last of the behaviours we will consider is accountability. Today, a property professional is accountable for the data that they use and the way that they use it. As we move into an ever more fragmented, data driven and complex world, is it realistic for a single person to take responsibility for advice or decisions that they make on this data?

If they are not, who should be accountable for the data being ethically collected, analysed and communicated?

The Real Estate sector needs to fundamentally challenge the way it operates and what a person can be accountable for. It will also be necessary to explore mechanisms for understanding and tracking the accountability of the data used.

SO WHAT? *What might be considered ethical use of data depends on the situation and will vary from person to person and change over time. Therefore, whilst black and white standards may be difficult to adopt rapidly, behavioural principles for individuals, businesses and buildings may be more easily adopted and should be built into all data related activity.*



EXPERT VIEW



Andrew Knight, Data & Tech Thought Leadership & Analysis, RICS

Why is data ethics important to the Real Estate sector and why should people care?

The Real Estate sector touches the lives of people in a much more profound way that most people realise. We spend around 90% of our time inside buildings – some 70% in our homes with the remainder spread across offices, warehouses, schools, shops, hospitals, restaurants, hotels, and a host of other settings. Our homes represent our single largest financial commitment, and our health, safety and financial security rely in no small way on the way property is planned, constructed, valued, purchased, sold, rented, maintained, and operated. Data will increasingly play a key role in every aspect of Real Estate and has the potential to greatly improve its performance and to mitigate its negative effects on the environment. Whilst existing legislation such as GDPR protects personal data, it does not address how data on the properties we live, work and in play in, is handled. How do we balance the public interest against the desire to keep information on our home private? Who owns the data on how much gas and electricity we consume? What rights do we have to see data about our workplace, the materials used to construct it and their safety, and the quality of the air we are breathing?

What are some examples of data ethical challenges in your area of expertise / knowledge?

In many areas the pace of technological change is ahead of legislation and this state-of-affairs is likely to persist as technology continues to develop. Ethical decisions will need to be made – ‘don’t do it just because you can’. As an example, many public places are run and managed by private asset owners and operators who use facial recognition technology, and whilst their motives may be benign, and driven by public safety and security concerns, we need to balance the needs of the public at large versus the private individual, consider the issue of consent and ensure that images gathered in this way are not used for other less benign purposes. Machine learning and other forms of artificial intelligence are already being deployed to manage conversations between property managers and tenants, and to screen potential tenants based on credit worthiness and other criteria. As these approaches depend on data to train their algorithms, there are significant dangers that bias can affect these models and negatively affect certain categories based on gender, ethnic background etc. even if these factors have been removed from the training data. The governance, assurance and ethics around artificial intelligence is a significant challenge.

What do you think needs to happen to ensure the ethical use of data in Real Estate?

The Real Estate industry is hugely fragmented, and whilst many market participants are increasingly aware of the need to define and adhere to clear ethical principles on the use of data and technology that go beyond existing legal frameworks, the broader sector needs to be educated on the opportunities of using data as well as the risks and ethical considerations that must be managed. Government at all levels must also play its part through its high-level data strategy, its ability to communicate with market stakeholders and the public themselves, and by leading by example in the way it manages the data sets it controls and manages. The professional and industry bodies that set standards, guidance, and other industry norms, reflect the fragmented nature of the Real Estate sector and collaboration is critical in developing a set of ethical principles that resonate and are adopted and implemented as widely as possible. Whilst data ethics have an international dimension, jurisdiction and cultural factors will have affects, so a set of principles for the UK market should be developed that have the potential to be shared more widely and placed into context and adapted for other countries and regions.

The background features a dark blue upper section, a large brown curved shape on the right, and a bright orange lower section. A white horizontal bar is positioned in the lower-middle part of the image.

6. NEXT STEPS FOR REAL ESTATE

As Real Estate moves into an ever more data driven and complex world, the sector will see many benefits from increased efficiency, new insights and increased value. However, it will also face a range of ethical challenges that, as a sector, we are neither set up for, nor considering today.

It is imperative that we address these issues today at both a company and sector level.

Short term

In the short term, organisations must simply make sure that the inevitable direction of travel of data use in the property market, and the subsequent ethical considerations are built into today's thinking. It is imperative that the traditional process and structures in place are challenged and considered through a data ethics lens for today and tomorrow.

Long-term solutions will be more complex and varied, but companies and industry bodies should work to the RED Foundation Data Ethical principles (diagram opposite).

These are only a small step in the right direction and are far from a complete solution, but they will make sure that any organisation is building in some basic principles into its thinking, reducing risk at a corporate and individual level.

Everyone should challenge themselves, their companies, and their suppliers on their approach to the ethical use of data.

RED Foundation Data Ethical Principles



1. Accountable

For the data collected and used. This includes taking responsibility for using the data in an appropriate and secure way.



2. Transparent

About what is collected and why. Whilst this cannot be expected for every data point, at a minimum a general data policy should be published for each building and company explaining what is collected and why.



3. Proportionate

Not only should data be collected within legal and technical requirements, but is also proportionate to the benefit and the expectations of wider society.



4. Confidential & Private

All activity with data should at all times consider confidentiality and protect privacy; both within necessary legal requirements, but also according to the expectations of wider society.



5. Lawful

All data should only be used within all relevant local and international laws and regulations.



6. Secure

Security principles should be built in 'by design' into all applications and appropriate steps should be taken to keep data secure.

Long term

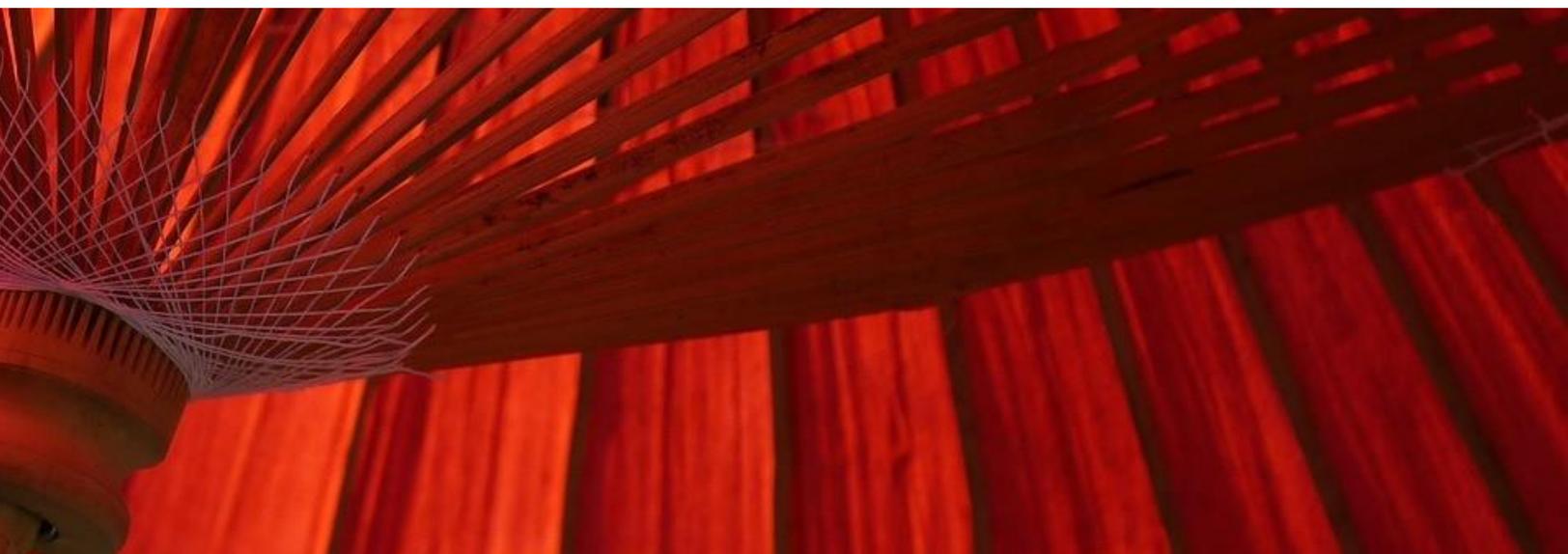
Whilst all companies need to actively consider the long-term data ethics challenges, these will really need to be reviewed and resolved at a sector level. Industry organisations must collaborate to ensure that there is a consistent, sector wide approach to data ethics. In particular we believe that the following questions must be addressed as a matter of urgency:

- **Who is accountable?** Who is accountable for the data that is used throughout a property process? The answer to this will shape future standards, regulations and insurance policies.
- **What are they accountable for?** What are people identified in the previous point accountable for? How far should a user go to verify data and ensure that it is ethically used?
- **Permission best practice** What is the sector's approach to getting a person's permission when they enter a building or public space?

- **Technology solutions** Which data exchange authorities and solutions could provide an answer to some of the challenges around trust? Other sectors have started exploring the use of technologies such as blockchain to provide the trust and transparency to shared data as the volume of data grows. Real Estate must explore these technologies further to identify opportunities.

In the future we will see a re-shaping of the sector around these topics. It is likely that we will see a new breed of job role with responsibility for an organisation's ethical approach to the use of data and trust will become one of the largest deciding factors in purchasing products and services.

Tomorrow's successful companies will be answering these questions today, but sector wide collaboration will be the key to an ethically data driven property market of the future. It is essential that senior leaders and Industry bodies alike rapidly work together to answer these questions.



APPENDIX A – ACKNOWLEDGEMENTS

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- Effective data strategies
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- Charities and Education
- Data Centres
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For more information, please visit Yardi.co.uk.

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