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Report

The Future of Digital in Social Housing
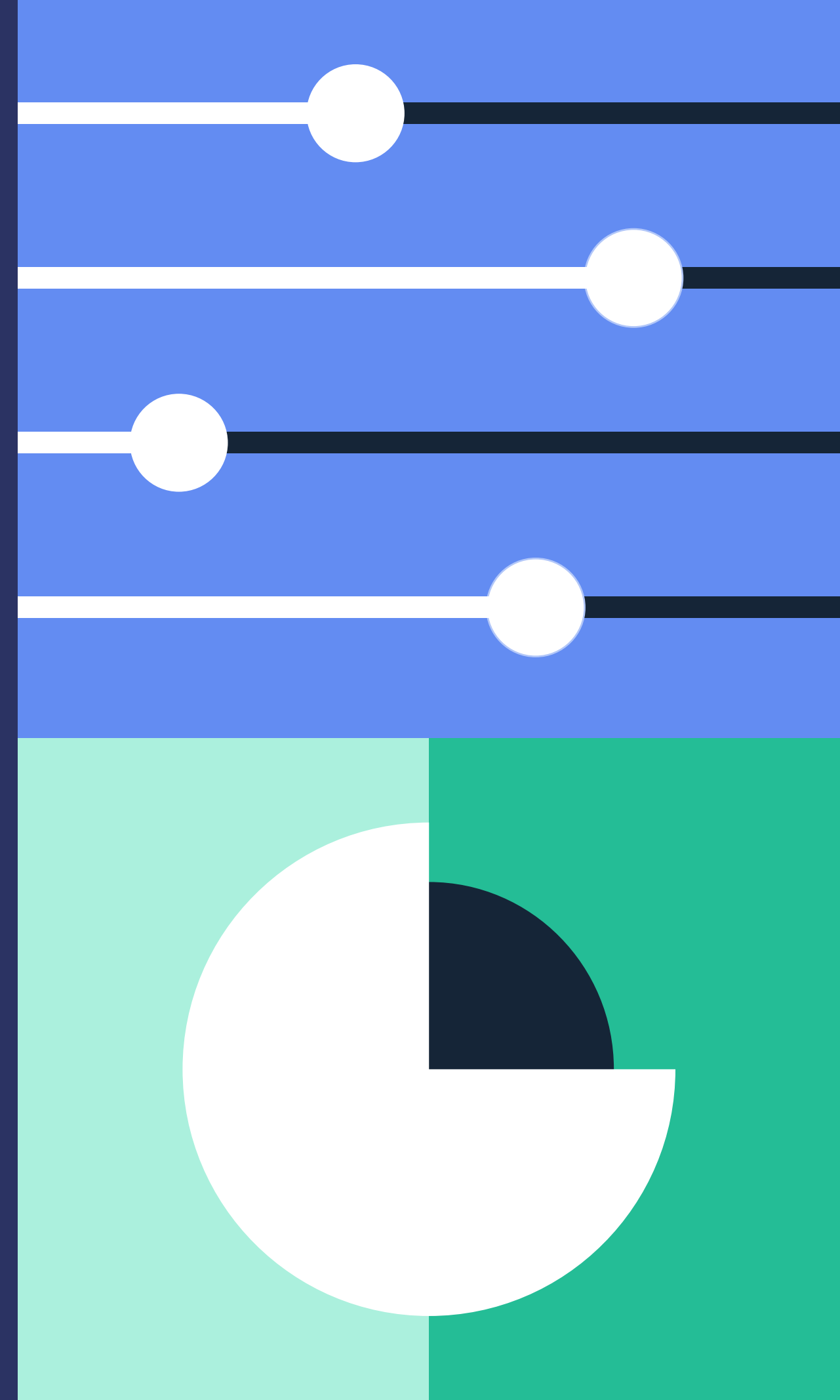
The state of DX in housing

If the past decade in technology and digital transformation (DX) has taught us anything – it's to expect the unexpected.

As a digital transformation agency, we're asked a lot about what the next ten years might bring and we're always pretty frank about it: it's hard to predict. Technology moves so rapidly that even suggesting what will have an impact in just a years time is hard enough.

And that's before even mentioning the global pandemic that changed everything... The timeframe we're living in right now will likely be referred to as pre-COVID, such are the huge ongoing implications.

There's a lot of talk about the 'next normal' – across sectors, workplaces and technology – what will we learn from 2020? How do we institutionalise what's worked well?

For digital transformation, there's no denying that the pandemic accelerated projects and plans faster than ever imaginable.

BCG research showed spending on digital transformation (unsurprisingly) increased in 2020, with 83% of companies planning to accelerate their efforts in 2021, and 65% expecting to increase the amount they're investing – despite the economic downturn.

KEY STATS

83%
of companies planning to accelerate their DX efforts in 2021 *(BCG)*
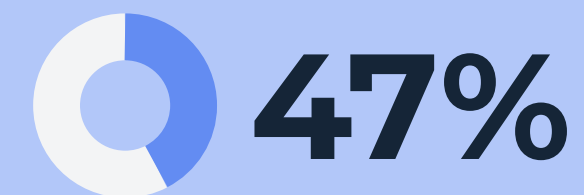
47%
of CIOs say the pandemic has permanently accelerated digital transformation and the adoption of emergent technologies *(KPMG)*

What is the 'next normal' for housing?

For many housing associations, the pandemic has forced a rethink on how they engage with tenants. Projects that previously seemed bottom priority suddenly soared through to the top of the agenda, tenants that seemed unreachable by digital means were connected. While many organisations had plans and processes in place, the past year has forced them into action.

After overcoming the momentous challenges of the past year, housing associations now need to move forward from reacting to the crisis to now building upon the rapid progress made. How do you keep the momentum going? Digital has become a channel of choice for many – are your services ready to handle the channel shift?

> **2021 will be the year of transition. Barring any unexpected catastrophes, individuals, businesses, and society can start to look forward to shaping their futures rather than just grinding through the present.** *(McKinsey)*

Our crystal ball...

What the future looks like for housing

The demand for digital customer experiences is greater than ever. Even prior to 2020, momentum was building behind DX and channel shift projects with the impacts of COVID-19 simply accelerating them into reality.

Housing associations need to provide 'hands off' methods of communication, whilst still delivering a seamless customer experience. This inevitably means IT and tech teams need to embrace new frameworks and tools, whilst the rest of the organisation need to adapt to developing technologies and capabilities.

There's always a niggling sense that housing associations are stuck in the past when it comes to technology – but there's never been a better time to drive forward innovation and step up to the challenge.

So whilst we can't predict the future – we can start to look at what emerging technologies are going to become more prevalent in the coming years for the housing sector that are going to accelerate digital transformation, as well as how they might work for individual associations...

|		
AI and Machine Learning	**5G & Smart Homes**	**Augmented Reality & Virtual Reality**
Robotics & Drones	**Digital twin computing & analytics**	

AI and Machine Learning

Artificial intelligence isn't in itself groundbreaking technology – but it's definitely going to become an even more valuable tool in the next few years. Paired with machine learning, it can help us interpret sheer volumes of data to create more evolved automated solutions.

Self-learning algorithms are able to identify connections and patterns that the human eye can't, or at least at a much faster and reliable pace. Customer behaviour has changed drastically and housing associations need to understand how in order to deliver the best possible experience, both on and offline.

ADVANCED TECH TO READ UP ON: EDGE AI

A network infrastructure that allows AI algorithms to run on the edge of a network, closed to the devices collecting the data for increased efficiency and bandwidth savings.
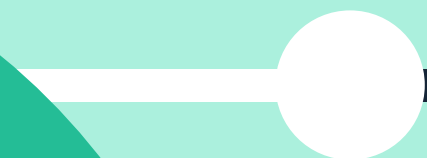
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In real life?

We've already started implementing AI and ML into our processes and products here at Prodo. For the housing sector, it's all about how you can harness the technology to both help customers and work smarter.

Built on Azure as our AI platform, we've developed a visual repair diagnostic tool, in which we've trained machine learning models to correctly identify target issues - like gas boilers and damp - with a near 100% degree of accuracy.

This benefits the customer by simplifying the reporting process – all the end-user needs to do is snap a quick picture of the issue and upload it via an app – whilst also hugely benefiting the housing association utilising the technology, providing consistent data and asset management with greater potential for an engineer to fix the issue right, the first time.

KEY STATS

60% of occupations, at least 1/3 of workday activities could be automated *(McKinsey)*

62% of consumers say they are willing to use AI to improve their experience *(Salesforce)*

36% of CEOs say their primary AI goal is to free workers to be creative by automating tasks *(Harvard Business Review)*

5G & Smart Homes

Whilst 5G is up to 100x faster than 4G, the enhanced speed and power of 5G doesn't just mean we don't have to wait as long for our funny cat videos to load on YouTube. Every new 'phase' of internet connectivity unlocks new potential and 5G is no different – in fact it enables all of these other technologies to progress.

5G is expected to accelerate the shift towards the fourth industrial revolution, which ties into the Internet of Things, something that the social housing sector has long pre-empted as a big deal to how customers interact and engage with their landlord to optimise energy usage and reduce the carbon footprint of homes.

> **Intelligent connectivity, enabled by 5G, will be the catalyst for the social-economic growth that the 4IR (4th Industrial Revolution) could bring.**
> *(World Economic Forum)*

"Alexa, when's my rent due?"

We all know how much smart homes can save money and reduce cost ownership for affordable housing, but one of the biggest blockers has always been network limitations – 5G solves this problem, as well as how to overcome different smart devices.

5G can work on low-power devices and provide seamless integration across different iOS systems to get them talking to one another for a fully compatible smart home, allowing homeowners to benefit from the holistic home solutions capable of saving energy and improving health standards.

Imagine a tower block of flats built with digital in mind – completely connected for real-time monitoring through sensor networks and high-speed connectivity. Temperature checks, door locks, energy outputs, carbon monoxide levels – the list of potential data points is endless, all driving energy, operational efficiency and maintenance cost savings that can be passed on to the homeowner.

For instance, connecting service meters to a central network means energy suppliers can observe energy usage and respond to fluctuations. This new network will also be able to do things like quickly detect a gas leak and send an emergency call.

KEY STATS

3bn
5G connections will reach 3 billion by 2025 *(Omdia)*

15bn
smart homes in the UK in 2020 *(Eco Experts)*

16m
5G smartphone subscriptions worldwide by the end of 2021, almost tripling from the 2020 total *(Ericsson)*

Augmented Reality & Virtual Reality

By now you've likely seen or maybe even used a virtual reality headset IRL (in real life). Though they've been largely utilised for gaming the current worldwide situation has highlighted how useful this technology could be in allowing remote communications.

QUICK DEFINITIONS:

Augmented reality -
computer-generated imagery is superimposed over what the user is viewing in the real world.

Virtual reality -
the user's field of vision is put into an entirely computer generated environment

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A whole new virtual world

From medical diagnosis like eye tests and GP appointments to classroom simulations, the use cases for AR and VR are limitless. In social housing, things like remote viewings and virtual tours are obvious front runners for using the technology, as well as optimising the repairs process through augmented walk throughs and visual guides to self-fix problems.

Augmented reality technology provides a valuable solution for many of the challenges found within maintenance, repair, and operations teams, allowing users to enhance their field of view. This in turn helps to reduce human errors, execution time and cost while increasing operation speed, productivity and profit.

Imagine – a resident's home has flooded in the middle of the night. Rather than send an emergency out-of-hours to go and assess the situation, you can have specialised expertise on-site anytime, anywhere. A plumber can use a live, augmented reality guide to show the customer how to turn off the stopcock, then go with the right tools to fix the problem during working hours.

A faster diagnosis and solution ultimately decreases repair downtime, saving time and money and improving fix-it-first time objectives, as well as massively improving the customer experience.

Robots & Drones

Robotics and drone technology are largely being trialed within delivery and industrial environments but there's an emergence within the care and assisted living sectors, too.

The ramifications of the global pandemic has naturally led to remote solutions to avoid interactions with those more vulnerable to infection, such as the elderly.

Robots and drones can provide 24/7 support and service with zero risk – combined with video interfaces to deliver prescriptions, carry out consultations or even simply to provide companionship when it's not safe for face-to-face contact.

KEY STATS
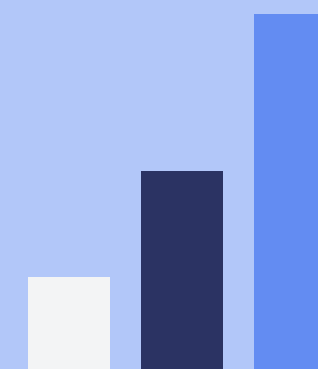
£42bn

By 2030 drones will have contributed to a £42 billion increase in the UK's GDP and £16 billion of cost savings to the UK economy *(PwC)*

An eye in the sky

There are plenty of use cases for drones applications within social housing – providing an aerial view and reducing human error. Drones could be used for roof surveys; taking HD photographs and videos, carrying out routine inspections with minimal risk and maximum efficiency, easily deployed and completing the process much faster than a human could.

They could also be used for land inspections from the air, using ground control points to provide extremely accurate measurements to help architectural and development build stages.

During a time when housing organisations are under mounting pressure to be more efficient, innovative and ambitious in how they deliver services, drones offer a whole new perspective on the world.

By gathering data quickly and accurately from hard to reach places, drones can make a crucial difference in managing costs, controlling risks, increasing safety and influencing outcomes.

KEY STATS

£ **16bn**
Net cost savings from uptake of drone technologies *(PwC)*

76k
drones in use across UK skies by 2030 *(PwC)*

Digital twin computing & data analytics

A digital twin is a virtual representation of a real-world environment or product. Though this technology has been around for over a decade, it's only just now really starting to see traction and use cases in manufacturing and architectural sectors.

Digital twins can help you manage performance and efficiency of machinery, or understand potential impacts of new buildings or roads. Recent technological developments mean they now not only simulate environments but can proactively assist in designing new solutions.

Real world scale reproductions are becoming increasingly available, combining multiple digital twins to form integrated applications. Through data analysis and visualisation, digital twin modelling can help us make smarter, more sustainable decisions and address potential problems before they arise 'in the real world'.

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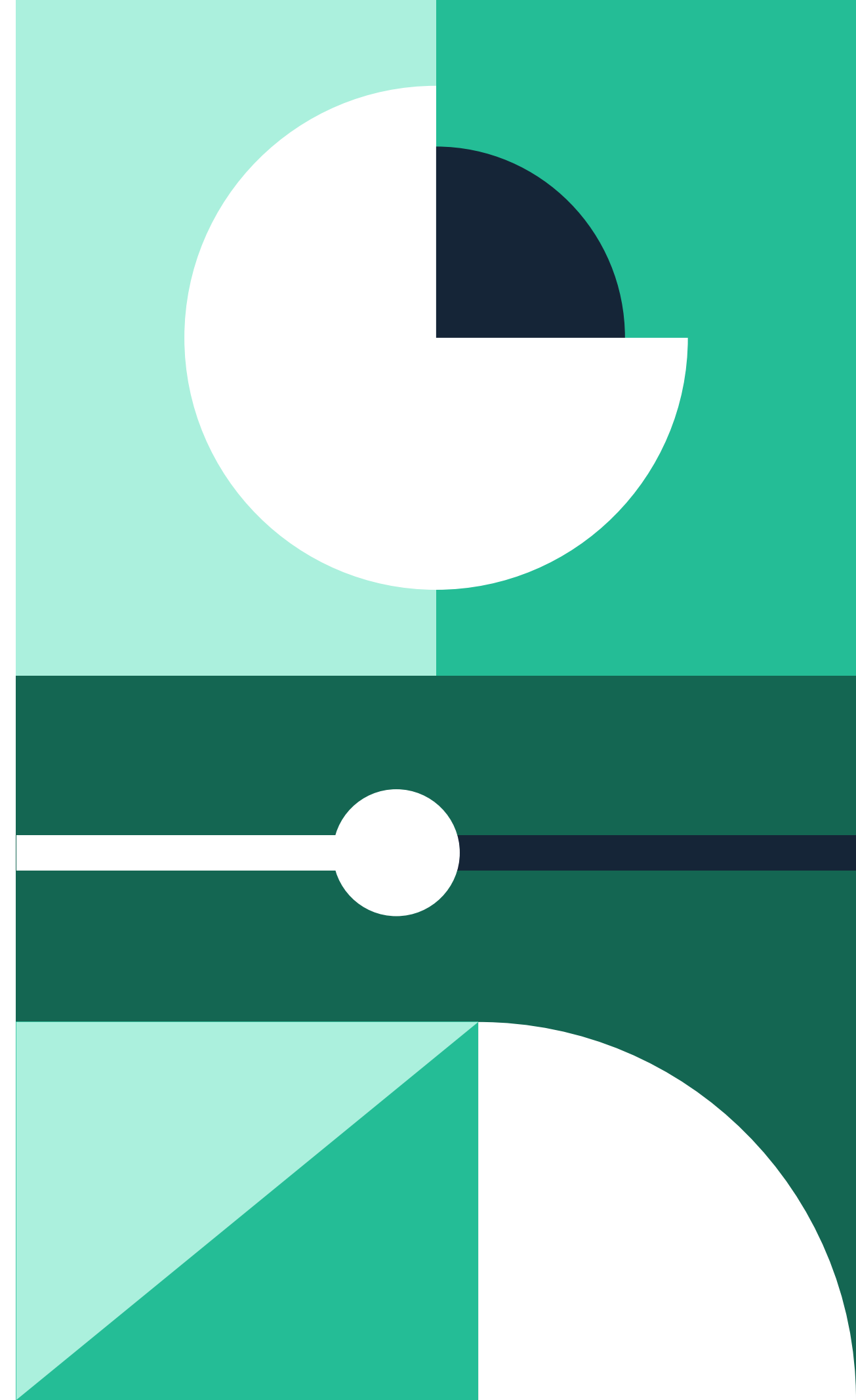
The very important role of data

Digital twins simply can't work without clean, comprehensive and accurate data. Unlocking the myriad of challenges for data in social housing isn't a simple or straightforward path – but the benefits of doing so are immeasurable.

Access and understanding of customer data and behaviour as well as data behind physical buildings and platforms will allow housing associations to build real pictures around their current asset management, end-to-end processes and future developments.

Digital twins could give the right people the right picture – in granular detail – and help them plan ahead, with potentially life-saving benefits (Bola Abisogun, OBE, Chairman of DiverseCity Surveyors, claims digital twin technology could have saved lives at Grenfell - Diginomica).

To conclude...

There's a whole lot of opportunity within the social housing sector when it comes to digital technology. 2020 saw organisations step up and speed up digital transformation, modernisation and channel shift as a top priority.

So now it's vital the sector doesn't lose that momentum and fall back into its old-fashioned ways. It's not going to be easy – traditional culture and mindset can form barriers if you don't have a proactive and disruptive leadership that challenge the norm and advocate for change.

Investment in digital technology has to come from the top but become embedded across the entire organisation for it to truly work. And a lot of the technology talked about here might sound unattainable for where your organisation is right now – but small steps and an open mind can lead to innovation.

Housing associations always put customers first. Those that focus on digital technology – developing skills, consolidating data, driving efficiencies – are better placed to adopt new technology and deliver better solutions.

And ultimately, stronger technology means happier customers.

Keep the momentum going by driving forward digital transformation that doesn't just solve the problems of today but solves the problems of the future.

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Prodo is an established Umbraco and HubSpot Partner agency.

We've been experts in accelerating growth and digital transformation since 1998

Though we have customers of all shapes and sizes across industries, we've specialised in serving social housing providers for the last 16 years.

We've helped many of the top 200 housing associations across the country to deliver their award-winning channel shift ambitions.

We've even written a book - **Shift!** - all about how to make digital transformation happen in housing and founded the **Housing Hive** community.

Interested in finding out how Prodo can help accelerate your association's channel shift strategy?

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What we do

Digital Transformation

Channel Shift

Web Development

Apps

Customer Portals

Chatbots