

# HOUSING TECHNOLOGY™

HOUSING | IT | TELECOMS | BUSINESS | ECOLOGY



## DATA MATTERS 2023

12 September 2023  
THE BRITISH MUSEUM, LONDON

See page 04

# Artificial intelligence in housing

Business imperatives, internal & external operations, pitfalls & advice, ethical questions and staff concerns



### Housing management

Digital twins, HMS, digital transformation & building information modelling

### Finance management

VC funding, AI-powered invoicing, income diversification & arrears

### Mobile working

Seamless mobility, 'last mile' communications & next-generation repairs

### Customer management

Experience orchestration, omni-channel strategies & tenant welfare

### Infrastructure

Delivery methodologies, damp & mould, cybersecurity & IoT

### Artificial expectations?

Artificial intelligence (AI) is receiving widespread coverage in the media at the moment. On the one hand, people are marvelling at the apparent wonders of ChatGPT, while on the other people are asking what untrammelled AI might mean for jobs and human agency (notwithstanding the theoretical creation of artificial general intelligence [AGI] and/or fears of an AI 'singularity').

Our special feature on AI on page 44 considers the potential role of AI in housing, with some fantastic contributions to the discussion from Civica, Converse360, Made Tech, Mobyssoft, NEC Software Solutions, Orlo and Riverside Group.

Aside from how housing providers might choose to use AI for both internal and external activities, three areas stand out in the article.

The first is that lots and lots of high-quality data is needed for AI to work beyond 'mere' chatbots and virtual admins. ChatGPT and other large-language model (LLM) AIs depend on having access to truly enormous bodies of data in order to generate realistic, accurate and useful outputs.

The second area is that AI is not a panacea; it is a tool whose efficacy depends on how (and why) it's deployed and how it is then trained, supervised and monitored to make sure that the AI's outputs are factual, consistent and unbiased as well as remaining bounded by regulatory and privacy considerations.

The third and final area is that housing staff shouldn't be afraid of AI. In the same way that AI is already being used by most housing providers to do the 'grunt work' around their cybersecurity provision, so too will AI relieve housing staff from dealing with mundane, repetitive tasks and instead freeing up their time for more fulfilling and useful activities.

Read the full AI feature on page 44.

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## Forthcoming events

**HOUSING TECHNOLOGY** **DATA MATTERS 2023**

12 September 2023  
THE BRITISH MUSEUM LONDON

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**HOUSING TECHNOLOGY 2024**

06-07 March 2024  
East Midlands Conference Centre, Nottingham

housing-technology.com

**HOUSING TECHNOLOGY 2024**  
CONFERENCE AND EXECUTIVE FORUM

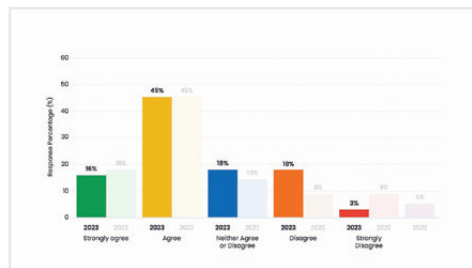
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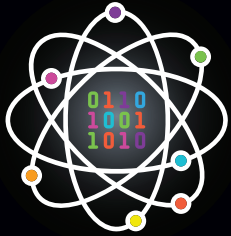


### 50 Seven steps to data maturity

## TECHNOLOGY SHOWCASE

Please see [housing-technology.com/showcase](https://housing-technology.com/showcase) for more information





# DATA MATTERS 2023

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LONDON**

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operations and  
**future plans**

“The event was extremely interesting and touched on many relevant challenges facing the sector in the coming years. The focus on Data Governance and Quality was particularly useful to us”

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# Housing 21 moves to Civica HMS

*Housing 21 is set to implement Civica's Cx Housing Management platform as part of the housing provider's wider digital transformation programme.*

Housing 21 runs a devolved operational model, with local managers running their own housing schemes and managing individual apartments and communal areas. It therefore wanted a single platform which was simple and quick to use for all of its resident-facing staff.

The housing provider's numerous current systems will be replaced by the single Civica Cx platform, resulting in a single view of all residents and better data-sharing. Local housing staff will have immediate access to the most up-to-date data and better tools for real-time reporting.

Gordon Bourne, head of business systems, Housing 21 said, "Through our new partnership with Civica, we're aiming to make it easier for everyone to do business with us, from our residents to our employees and other stakeholders. The Cx platform will help us build a single view across all our properties and data, and support people's journey with us, including convenient digital ways for them to get in touch."

## Luton Borough Council moves to Civica

Luton Borough Council is implementing Civica's Cx Housing Management, Cx Asset Management, Cx Contractor Workforce and Abris Choice Based-Lettings in a new £1.1 million, seven-year contract.

The Civica Cx software will give the council a single view of its resident, property and asset data, alongside a self-service portal for its residents.

Council staff will benefit from having easier and faster access to data as well as increased process automation and better workflows, freeing them from low-value repetitive tasks.



The Civica platform will also enable the council's homelessness services to be integrated into a single joined-up system with temporary accommodation management for the first time.

As part of its contract with Luton Borough Council, Civica plans to add social value through a new partnership with a local education provider to run a 'T-level' work experience-linked qualification and boost digital inclusion via community roadshows, careers fairs and promoting local employment opportunities.

## North Wales Housing picks Civica Cx

North Wales Housing is moving all of its housing services to the cloud as part of a new partnership with Civica. In a new 10-year partnership valued at £800,000, the housing provider will implement Civica's Cx Housing, Asset Management and Contractor Workforce software.

With the final choice of software partly influenced by the views of NWH's residents' groups, the Civica tools will be used to increase the housing provider's self-



service capabilities and enable greater automation of standardised processes. Civica's cloud-based software is expected to provide better resilience and security, as well as better access to data for staff across NWH's operations. The Civica platform will also support NWH's aim to build 500 extra homes during the next five years.

Jayne Owen, finance and resources director, North Wales Housing, said, "We were looking for a new housing system which was simple to access and use for our customers and our staff. That said, this isn't an 'IT' project – we think of it more as a cultural transformation project, and the staff engagement so far has been fantastic."

# CIVICA



## Dublin's carbon digital twin

*Dublin City Council is working with net-zero technology company IES on a digital twin project to identify how the city's social housing stock can be decarbonised in terms of both operational energy and embodied energy.*

IES modelled three residential blocks using its digital-twin software. It assessed the full carbon impact and efficiency of four renovation strategies, over three different time periods, to regenerate the buildings built in 1962.

The project took a 'whole-life carbon' approach, taking into account both embodied and operational carbon. Consideration of embodied carbon, which are the emissions associated with construction and materials throughout the whole lifecycle of a building, is a critical part of sustainable building analysis that is often overlooked.

A digital twin is a virtual replica of a building, based on real data and physics-based simulations. The digital twins were used to identify which strategy, ranging from 'shallow retrofit' through to 'demolish and rebuild', would result in the greatest reduction in whole-life carbon emissions.

Based on the digital twins from IES, the best renovation strategy was deemed to be 'deep retrofit', predicted to result in a reduction of around 85 per cent in cumulative emissions.

Don McLean, founder and CEO, IES, said, "Retrofitting vs. demolition continues to be a widespread debate. With around 80 per cent of the buildings that will exist in 2050 being likely to be already built, retrofitting has a key role to play in decarbonising our built environment and driving energy efficiency. While demolition is sometimes unavoidable, it increases emissions through the embodied carbon and the materials required for rebuilding."

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WHY OUR CUSTOMERS LOVE CX

**EASE OF USE**  
USER FRIENDLY  
Cx IS A GAME CHANGER. IT REPLACED SPREADSHEETS & TIME RESEARCHING INFORMATION SO WE DELIVER A BETTER CUSTOMER EXPERIENCE  
USER FRIENDLY EVEN FOR TECHNOPHOBES LIKE MYSELF  
CODES USED FOR RAISING JOBS ARE SAVED IN Cx SO IF YOU HAVE A BRAIN LIKE A SIEVE YOU CAN TYPE 'ELECTRICAL' & IT APPEARS INSTEAD OF HAVING TO REMEMBER CODES

**COMMUNICATION**  
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CAN GENERATE SMS, EMAIL, LETTERS & SOCIALS FROM ONE PLACE  
GIVING US GREATER CONTROL & CONSISTENCY IN THE WORDING & TONE OF OUR CORRESPONDENCE  
CLEAR RECORDING & EASY TO TRACK COMMUNICATION ACROSS OUR TEAMS

**PRODUCTIVITY AUTOMATION**  
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AUTOMATES MUNDANE TASKS, HELPING MY TEAM FOCUS ON THEIR PRIORITIES  
HAVING CASES & TASKS & ALL THAT IS INCLUDED IN ONE MODULE IS... GENIUS!  
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ALLOWS ME TO WORK FROM HOME & HAVE EASY ACCESS TO TENANT DETAILS

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**CUSTOMER HAPPY TENANTS**  
CASES & TASKS ALLOWS ANYONE TO ACCESS A CASE, SEE THE NEXT STEPS & KEEP THINGS MOVING.  
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[housing@civica.co.uk](mailto:housing@civica.co.uk)





# AI-powered predictions for fire safety

Nick Rutter, Co-Founder & Chief Product Officer, FireAngel

*Fire and rescue teams know that many fires don't just happen. They are instead due to patterns of human behaviour which, if identified in the first instance, could have seen interventions planned and the fires, some of which resulted in fatalities, could have been prevented from even happening.*



## Reinforcing current fire safety strategies with AI

Effective fire strategies have their foundations in passive fire-safety measures (the first strategic pillar) which aim to prevent the spread of fires. These include many of the post-Grenfell recommendations in the UK, with billions invested in improvements to unsafe cladding and communal fire detection.

The second strategic pillar is active fire-safety measures, which focus on fire detection and evacuation, with the introduction of 'waking watches', digital fire logbooks and the conversation around PEEPs all having supported improvements in active fire safety.

But neither passive nor active fire strategies aim to prevent the fires happening in the first place; this is where harnessing the power of AI predictive technologies comes into its own.

## Identifying patterns of behaviour

In 2010, as an industry first, FireAngel introduced a battery-powered smoke alarm with diagnostic capabilities which stored alarm events in its internal memory. Close to 10 million of these alarms have since been installed during home safety visits completed by fire and rescue services across the UK.

If any of these devices were in properties where a serious fire took place, they were sent to FireAngel's head office for forensic investigation. The retrieved data soon highlighted that in many cases, there were multiple activations in the weeks or sometimes days before the larger, and in many cases fatal, fires had occurred.

There has never been more pressure on housing providers to protect their residents. With more legislative changes occurring in our sector in the past five years than in the previous two decades, it's a topic I have regularly touched on in recent presentations at fire safety-focused conferences and events.

As the cost-of-living crisis pushed many households into fuel poverty, we are now also seeing additional fire risks through an increase in alternative, unsafe heating and cooking practices happening behind closed doors, stretching fire and rescue services and housing teams' limited resources even further.





During these precursor occurrences when a smoke alarm was activated, the device would log events, including the duration and frequency of all recent alarm events. These indications reinforced both national statistics and anecdotal messages from fire and rescue services that many fires are caused by repeated behaviours.

Fire Officers are also aware that reduced mobility, hoarding or inebriation are all factors that can impact the time taken to silence a sounding alarm, while devices are regularly removed by residents who smoke or abuse drugs.

At FireAngel, we used the data collected from these activations or 'near misses' to develop our AI fire risk tool Predict, which uses a unique patented algorithm.

### Building the final pillar of fire safety

Predict provides a step-change in the fire industry that protects residents, properties and communities from preventable fire risks using unrivalled insights. The fire-

risk tool provides a real-time view of the active risk in a property in two simple outputs: either low risk with no further action needed or high risk which requires urgent interventions to prevent the probability of a future fire.

This is the only tool available that can identify high-risk behaviours behind closed doors. Predict is built as standard into FireAngel's Connected smoke and heat alarms which, when installed and connected to the cloud via a gateway, provide ongoing risk-mapping for all properties without manual trawls through spreadsheets or in-depth data analysis.

Predict can integrate alerts into housing providers' current asset management systems with an option to send alerts to third parties to enable prioritised interventions for those at a critical risk of a fire, thereby reducing the risk to the wider community.

### A step-change in keeping communities safe

The trend in fire deaths since 2000 reveals a plateau in recent years. Yet although we've seen improved fire-safety measures, fires are still occurring due to human behaviour.

It's only through a combination of preventative and predictive fire safety, using the insights that AI-powered tools can give us, that we'll ever achieve our goal of zero deaths caused by fire. FireAngel Predict is unique in its ability to support this goal. For more information, please visit [fireangel.co.uk/predict](http://fireangel.co.uk/predict).

*Nick Rutter is the co-founder and chief product officer at FireAngel.*

**FireAngel.**

# IntoZetta's annual 'data in housing' survey results



David Bamford, Delivery Director, IntoZetta

*Back by popular demand... Following the success of last year's inaugural survey, this year's Data in Housing has seen an amazing doubling of the recipients taking part.*

In 2022, we reported across four issues of Housing Technology on how leaders in housing data viewed the pressing issues facing our sector. As well as providing the subject matter for an enjoyable and enlightening panel discussion at Housing Technology's fabulous Data Matters 2022 event last September at the British Museum (n.b. Data Matters 2023 is in the planning stages), last year's survey gave a fascinating insight into how data is perceived in the sector and where the main challenges lay.

The introduction of the 'golden thread' as defined in the Building Safety Act has definitely put the spotlight back on to asset data (specifically stock condition data) and regulatory reporting data in general over the past 12 months.

Customers are talking to us about removing the manual steps from regulatory reporting processes and implementing increasingly stringent data validation checks, with several choosing to go back to first principles when it comes to building submissions.

The past 12 months have also seen a number of high-profile mergers and acquisitions in the sector, which bring with them a raft of data challenges. Consolidation, when done right, certainly delivers economies of scale but when done badly, it's often tenants that bear the brunt.

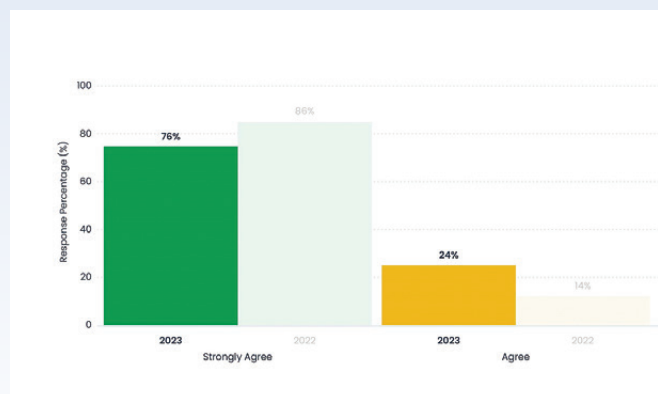
Those aside, the trend of an increasing awareness of the value and importance of data has continued, as has the fantastic collaboration between housing providers, of which we've been delighted to play a small part.

Moving on to our 2023 data in housing survey, we added a few questions around the cultural aspects of data

management, notably whether people are ready to make a step change in the way they control data and whether they have the tools and skills required to achieve it.

Let's take a look at the first four questions and responses (subsequent questions and responses will be covered in later editions of Housing Technology throughout 2023).

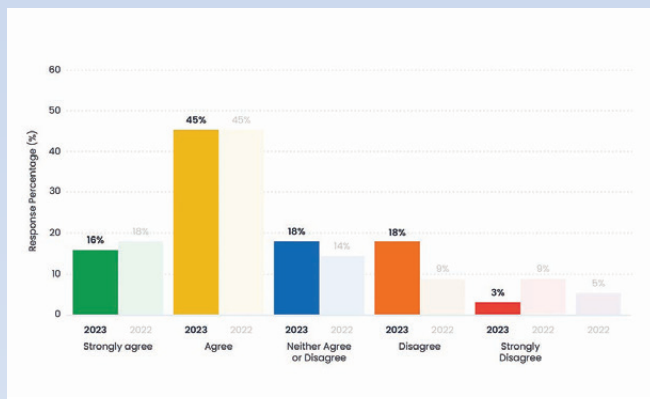
## Common data management challenges



This is probably the least surprising result and one of the easiest to understand. 100 per cent agree that the data issues across the sector are uniform (and as alluded to earlier, many of these are regulatory in nature).

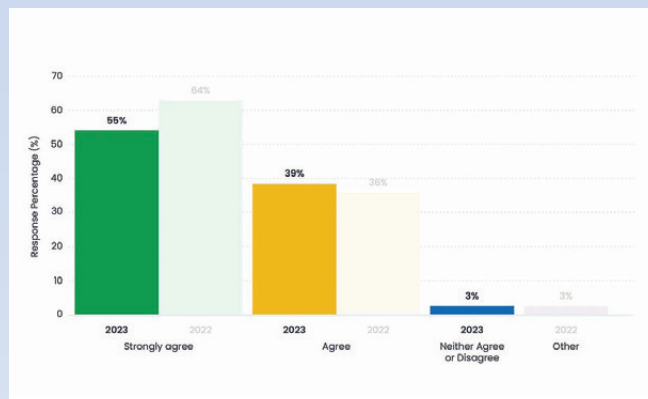
What this does highlight is the need for suppliers to really understand those challenges and to come to the table with solutions that ease housing providers' burdens.

### Housing-specific solutions to housing-specific IT challenges

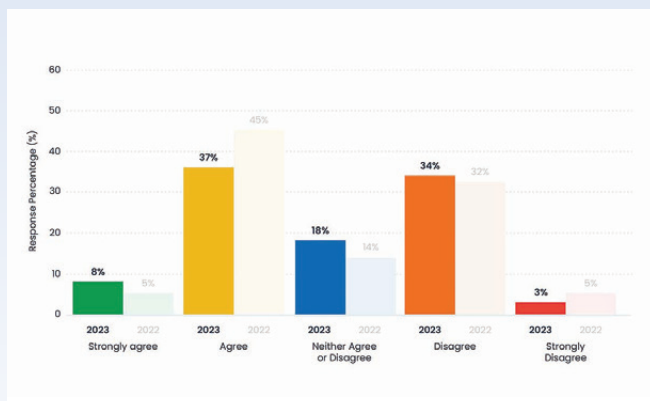


A broadly similar outcome to 2022 here, with 61 per cent agreement (64 per cent last year). While the housing sector can undoubtedly benefit from best practices seen in other sectors, there is still a consensus that the challenges faced in the sector are best addressed specifically, with housing-centric solutions.

### Significant IT transformation in future



New respondents have followed the second-timers in agreeing collectively that technology transformation is here to stay, though with slightly less certainty. Whether it's transformation to simplify the technology landscape, meet new regulatory requirements or to bring together housing providers in a single entity, transformation is a constant theme of discussions with our clients both within and outside the housing sector.



### Collaboration and sharing technology best practice

This is a personal favourite of mine. We've sadly seen a decrease in the number of respondents who feel there is good collaboration in the sector (45 per cent agree vs 50 per cent in 2022).

It's easy and completely understandable, when the things directly in front of you feel all-consuming, to forget to lift your head up and see what else is going on around you.

A takeaway for me from this is, as an external supplier to the housing sector, what more can we do to get people connected and talking?

The question for everyone is: how do we make those transformation programmes run seamlessly alongside 'business as usual' activities, and in an affordable way that prioritises the tenants' experience?

In the next few editions of Housing Technology, we'll be publishing further findings from our Data in Housing 2023 survey.

If you weren't able to take part this year, ask yourself the questions and see where on the graphs you land, and if you'd like to participate in the 2024 survey or share your experience of working with data in the housing sector, please contact us at [participate@housingdatasurvey.com](mailto:participate@housingdatasurvey.com).

*David Bamford is the delivery director at IntoZetta.*





# The road to responsible AI

Trevor Hampton, Director of Housing Solutions,  
NEC Software Solutions UK

*Love it or loathe it, AI is here to stay. Fast becoming more mainstream than science fiction, AI has shifted from being 'nice to have' to a business requirement that can drive efficiencies and bring new levels of personalisation to customer service. As a result, the debate around its ethical usage is set to intensify.*

This is particularly relevant in the area of social housing where there is a soaring level of vulnerability and so the application of AI requires very careful management to ensure alignment with housing providers' core values. With that in mind, how can AI be introduced responsibly in a social housing context?

## **Applying AI in a socially-responsible way**

Fear and anxiety around the introduction of any new technology are nothing new.

AI is one of the fastest-growing technologies ever and the genie is well and truly out of the bottle. It can save lives, cut costs and improve tenants' wellbeing. However, it must be acknowledged that it has the potential to negatively impact their lives too if the intended purpose is not thought through.

If there is any risk from AI of a negative outcome for tenants in terms of their health, wellbeing, finance or

safety then it shouldn't be applied because the benefits must always outweigh the potential for risk.

That's why some housing services are not suitable for AI. Waiting lists or housing-need allocations are good examples because the potential harm to tenants is too great if the AI recommendation of who has the greatest need or suitability for a property is inaccurate due to bad training data or a lack of testing.

But if AI is applied to, say, support tenants at risk of falling into debt or preventing damp and mould then it can be of tremendous benefit with negligible risk. In these instances, if there was a failure of bias and intelligence, it would amount to little more than a small inconvenience to the tenant such as an unnecessary phone call or a visit by housing staff.

## **AI training matters**

A criticism levelled at AI is its potential for discrimination. The way we train AI matters; accountability, fairness and transparency need to go hand-in-hand with development.

If flawed data is used to train the AI algorithms then it can lead to inaccurate outcomes. Deciding what to include in the data is just as important as deciding what not to include. For example, if factors such as age and gender have no bearing on the problem then don't include those factors in the AI data; doing so risks an unconsciously biased or flawed outcome.

We've worked with several large housing providers to use AI to predict the likelihood of damp and mould in their properties. To train the algorithm to make accurate

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predictions, we combined tenant and asset data to give a more rounded picture, enabling the housing providers to better identify properties according to risk; using asset data alone would have produced a less accurate picture.

To mitigate against bias in the data, it's rigorously screened during development and checked against results that are known to be positive indicators for the likelihood of damp and mould. It is then further screened by the housing providers themselves to verify that the data used is good quality, is being interpreted correctly, and that the accuracy levels are correct.

If the property is predicted to be vulnerable to damp and mould, it is then the housing officer who will make the final decision to inspect the property, based on the AI's recommendation.

### Ethical process and practice

The pace of AI adoption remains a hotly-debated topic, and rightly so while a regulatory framework is evolving in the UK, the EU and among other governments worldwide. In particular, bias testing – exploring how AI makes the recommendations and the outcomes – is key to deploying AI in a safe and ethical way.

Adopting a sector-wide approach to best practice and determining the right reasons for applying it will ensure AI stays within ethical boundaries and improves tenants' lives. Consequently, we would recommend that housing providers aim for sign-off at a higher organisational level than for traditional technologies.

In practical terms, this means a housing provider would set up an oversight board to report to its executive committee. The oversight board would verify that the data inputs can't introduce bias, that there has been sufficient and appropriate testing to safeguard against bias being introduced, and to define an ongoing review process to ensure the AI supports pre-defined outcomes to the benefit of tenants.



Having an ethical framework will ensure housing providers can manage both potential risks such as discrimination, and opportunities such as earlier interventions.

Ethically applied, AI can make a significant contribution to addressing social need. By working together and adopting a sector-wide approach, IT suppliers and housing providers can set the benchmark to ensure that any AI systems used are inclusive, responsible and put tenants' wellbeing and safety first.

*Trevor Hampton is the director of housing solutions at NEC Software Solutions UK.*



## Glider wins BIM tender from Network Homes

*Glider has won an information management tender from Network Homes, mainly around the housing provider's building information modelling (BIM) systems and data.*

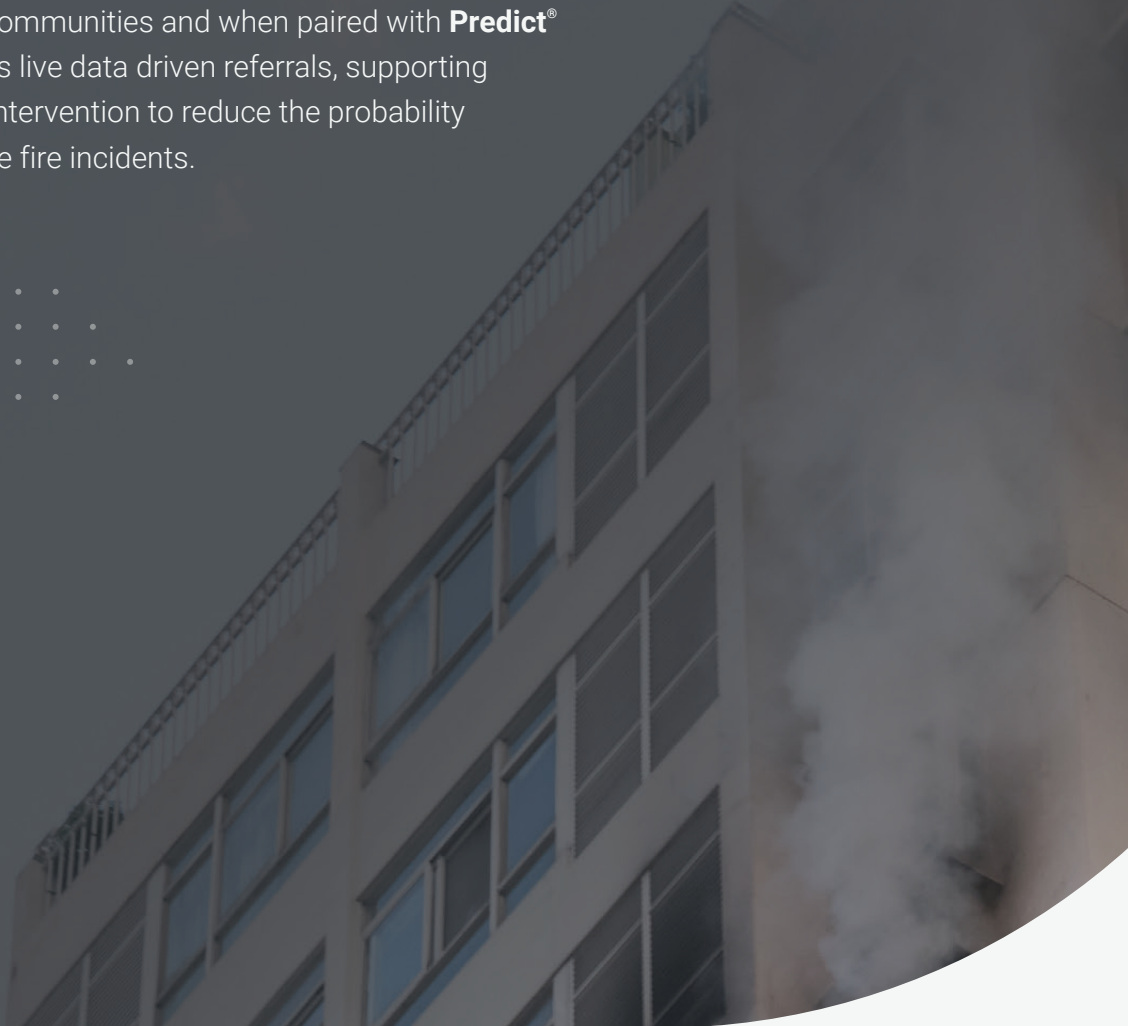
Glider will review and uplift the suite of BIM documents that Network Homes is currently using, including its asset information requirements (AIR), exchange information requirements (EIR) and project information requirements (PIR) along with its COBie templates, spatial hierarchies and BIM capability and capacity assessments.

Glider will also work closely with the digital and building information management team at Network Homes to ensure that the results of Glider's review are understood, accepted and rolled into future projects and contract documentation.

## Catching near misses

# Only 1 in 4 fires are known to UK Fire & Rescue Services

**FireAngel Connected** highlights the unrecorded 3 fires in our communities and when paired with **Predict**<sup>®</sup> provides live data driven referrals, supporting active intervention to reduce the probability of future fire incidents.



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# Reduced debt at Together Housing with Mobysoft

Having used Mobysoft's RentSense software since 2017 to support its rent arrears caseload, Together Housing has added Mobysoft's Intelligent Automation software to help it manage the growing number and complexity of universal credit cases.

Jackie Tagg, head of income, Together Housing, said, "Intelligent Automation has helped us to free up staff time for quality conversations while also triggering positive responses from customers who receive automated contacts. There are regular patterns of customer engagement and payments via our website when automated messages have been sent."

The combination of Intelligent Automation and RentSense has resulted in Together Housing's income team now being able to complete their weekly caseloads, alongside all relevant tenants receiving the support they need. The overall caseload for the income officers has fallen from 5,500 to 3,000 cases.

Tagg said, "The automation has helped tenants in a variety of ways. The most important is that fewer customers are getting into serious debt and we can intervene at the earliest stages of debt. It has also helped us to speak with customers at critical times and driven personal contacts, such as pre-NOSP and pre-court, helping us improve tenancy sustainability."

## Mobysoft AI for damp & mould problems

Mobysoft has reported that the damp and mould problems experienced by most housing providers could be remedied by using AI. The predictive analytics firm has championed the use of an AI repairs platform to solve what has become a problematic and high-profile issue for housing providers and their tenants.



Mobysoft's RepairSense, an AI platform for repair services, has been developed over the past three years to help housing providers improve the quality and sustainability of their repairs by interpreting data to identify priority cases and maximise productivity by attributing resources efficiently.

James Davison, chief technology officer, Mobysoft said, "An important facet of RepairSense is identifying and assessing the severity of the damp and mould problem in homes and helping to prioritise repairs. This is difficult for many housing providers because it often requires analysis of unstructured data sets from multiple siloed business applications and data sources.

"RepairSense has already analysed over two million repairs jobs using machine learning and created labelled data – this helps to identify raw data in unstructured datasets and adds meaningful labels to provide context, removing the need for manual analysis by housing providers and enabling them to focus on resolving issues for their tenants."



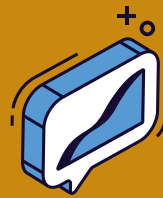
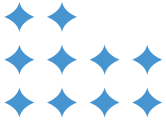
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# Tackling assets and income with AI



Neil Forrest, Chief Commercial Officer, Pivigo

Housing providers' challenges can be broadly split into two areas – those relating to assets and those relating to income.

Let's consider the income side of things first.

Income and arrears management has always been difficult, with the economic pressures felt by tenants contributing to the growing arrears and the increasing number of tenants struggling to keep up. Among the issues faced are a rental increase cap of seven per cent and overworked income officers, leading to morale issues and increasing arrears.

Solving this challenge is a perfect application for artificial intelligence. By using machine learning to analyse and organise an income team's workload, huge efficiency gains are possible, and with predictive AI, arrears can be nipped in the bud and addressed before the debt becomes overwhelming.

### Major pain points

Income teams are experiencing three major pain points: technical arrears; unmanageable caseloads; and a lack of preventative measures. The fundamental cause of these challenges lies with the underlying housing management systems and how primitive they are. Technical arrears, or cases where no actual intervention is needed, comprise a considerable portion of income officers' caseloads, leading to repetitive administrative tasks that waste time and hinder the income officers' ability to provide useful support.

The size of caseloads is increasing, and most housing providers aren't increasing the number of income officers to match the rise in arrears cases. This has led to income officers being unable to complete their weekly caseloads, leading to a snowball effect.

### Think like an income officer...

Out of necessity comes invention, which in this case is to teach an AI to think like an income officer so that the assessment and organisation of the caseload is done by a machine in seconds, rather than people over many hours.

The lack of viable technology in our sector combined with these overwhelming caseloads has resulted in teams becoming reactive rather than proactive. Thanks to advances in AI, there are solutions that can relieve the pressure on income officers, create more opportunities to provide timely support to tenants, deliver efficiencies and really improve the overall performance of housing providers' income collection processes.

In short, we think AI should do all the heavy lifting, removing tedious and often inconsistent prioritisation, thereby giving income teams up to a third of their time back to really tackle the crisis. With AI-recommended caseloads, it does just that.

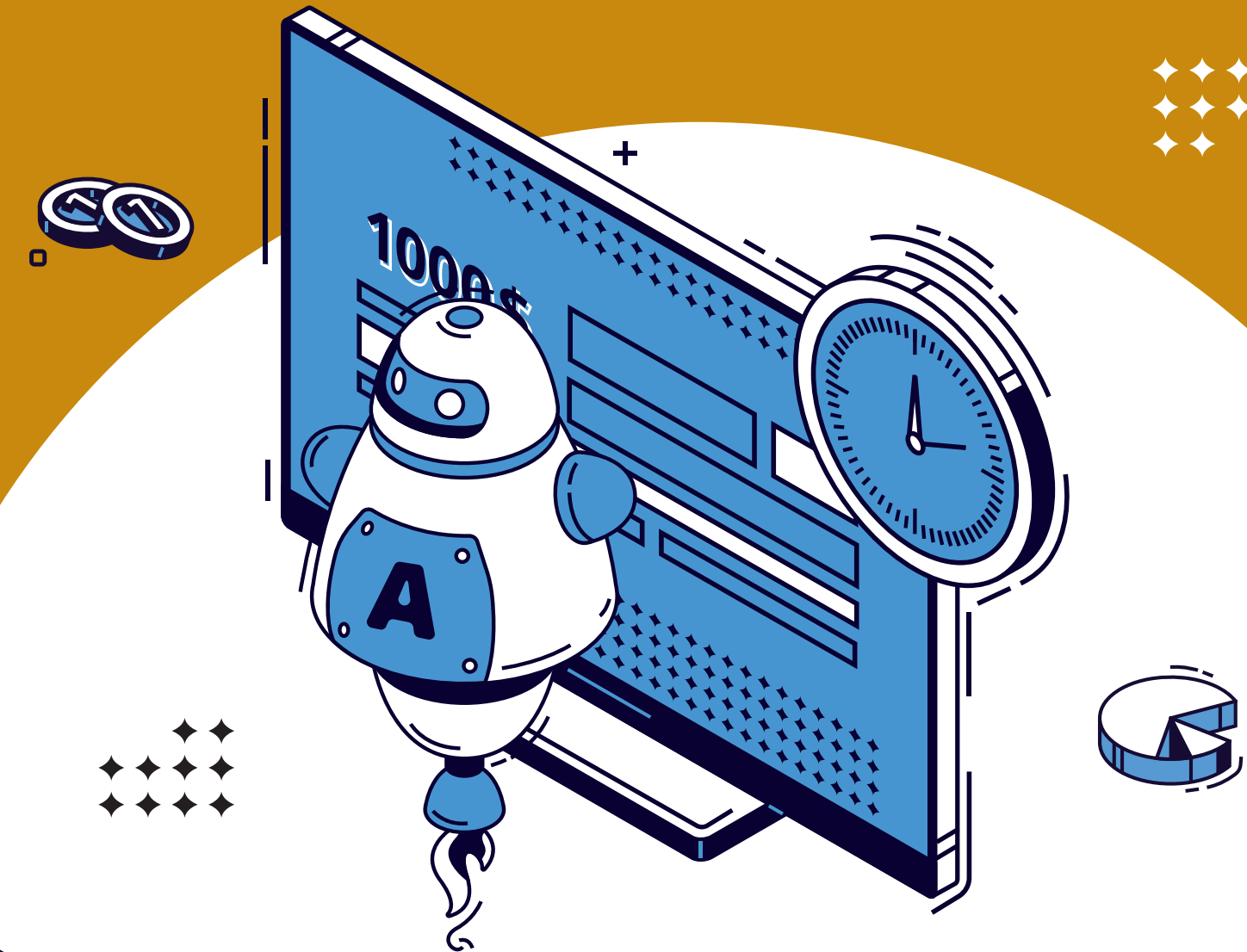
In other words, never give a human a machine's job.

### AI and stock condition surveys & assessments

Alongside arrears and income collection, the other equally important area is the condition of housing providers' properties and assets, particularly the problem of damp and mould.

Not only have damp and mould complaints doubled in the last two years, but half of housing providers also don't know which properties have damp and mould problems nor their severity. Furthermore, with the cost of living and energy prices rising, cases of damp and mould will continue to increase.





These issues point towards the immediate need for a more sophisticated, data-driven approach that predicts and prevents rather than reacts – applying AI to asset data is the key to targeting resources to where they are needed most.

#### Expensive and slow...

How can a large housing provider understand the condition of its assets? Conventional approaches involve surveys performed by people; this approach doesn't scale nor will it provide the answers in a viable timeframe. And while some housing providers are installing IoT-based devices to monitor asset condition, the cost and timeframe of that approach won't address the problem today.

In addition to the obvious health risks to tenants, damp and mould can also cause damage to the structure of the buildings as well as their fixtures and fittings, leading to expensive repairs and maintenance.

AI can know more about your housing stock than any team member ever could and it can also look at every tiny detail to analyse which properties are most at risk – once again, the heavy lifting is out of the way. AI can create an efficient alternative to resource-intensive physical surveys through stock modelling using a variety of data sources, machine learning and advanced analytics.

#### Prioritising damp & mould

Housing providers can then predict the likelihood of each property having damp and mould problems, and by understanding the performance of every property, you can then prioritise properties within your planned programmes.

Building on our exploratory AI collaborations with a number of forward-thinking housing providers at our data-science bootcamps, we created Occupi, an AI product empowering housing teams to efficiently manage income, arrears and improve tenants' wellbeing. Now we are using AI to understand the condition of assets and solve damp and mould challenges.

AI is to the housing officer what a calculator is to a mathematician; a tool to help them work at their best. As Oren Etzioni, CEO of the Allen Institute for Artificial Intelligence, said, "A calculator is a tool for humans to do maths faster and more accurately than they could ever do by hand; similarly, AI is a tool for us to perform tasks too difficult or expensive for us to do on our own, such as analysing large datasets or keeping up-to-date on medical research."

*Neil Forrest is the chief commercial officer at Pivigo.*



# Housing Insight's new approach to arrears

Katrina Heyworth (L), Head of Sales, and Ann Foy, Business Development Manager, Housing Insight

*The team at Housing Insight has just rolled out a third iteration of RentsConnect, the arrears management module within PanConnect. Offering a completely new way of working, the changes to RentsConnect have created standout advantages for organisations seeking to address rent arrears.*

RentsConnect began as a basic solution designed to help new customers who approached Housing Insight because their existing rent arrears recovery system wasn't fit for purpose. When it came to releasing v2, we wanted to deliver above and beyond what was already on the market so we asked customers for detailed feedback about what they needed. We translated their responses into focused algorithms and other functionalities.

### **A different mindset**

RentsConnect v3 is a game-changer. We realised that while it's useful to sit down with CEOs and heads of services who certainly appreciate the money-saving potential of our products, it was even more valuable to listen closely to the grassroots end-users.

Our original goal was to iron out some implementation niggles but it quickly became clear that we could make upgrades which would have a transformative effect on how housing officers manage their entire arrears processes. The changes we've now made will make a

positive difference to a lot of organisations (and the best part is that all upgrades are free for existing customers).

The latest version of RentsConnect helps staff on the ground to work better. It doesn't just facilitate efficiencies in collecting arrears but, significantly, it offers an intelligent filter which generates a real-time priority list that we believe is more accurate than anything else on the market.

### **Cost-of-living interventions**

Most arrears tools have a monetary threshold below which they don't recognise debt as being problematic. However, our view is that early interventions have never been more important; any and all debt needs to be addressed straight away.

Vulnerable residents can be overlooked if the intervention threshold is set too high. Debt can quickly spiral and if a resident is relying on wishful thinking to get themselves back on track, they may choose not to get in touch with their landlord at this stage. Early interventions are vital in limiting the level of accrued debt, and while we recognise that some arrears will never be repaid, our system also allows residents to repay what they can afford right now, from as little as £1 per week, which gives them dignity and a sense of ownership over the debt.

### **An intelligent filter**

However, simply removing the arrears threshold wouldn't be particularly helpful if it resulted in additional cases being added to the workload of already hard-pressed housing officers. That's why we've created an intelligent filter in RentsConnect that uses the data an organisation holds in its back-office system to predict the financial behaviour of its residents, determining how and why they get into arrears. Using this filter, which relies on our in-



# rentsconnect

## ARREARS MANAGEMENT SYSTEM



### **PREDICTS**

By analysing your HMS data to predict financial behaviour and determine how and why someone is in arrears.



### **PRIORITISES**

An account using a series of formulas and algorithms to prioritise your workload.



### **INTEGRATES**

The system extracts and writes back data to all HMS in real time.



### **SIMPLIFIES**

Cases are presented to your staff in a simple and easy to use way via a task list.



### **ANALYTICS**

The system has an inbuilt graphical analytics engine. Shows charges, payments and true arrears over time by organisation/patch/street/individual property.

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house formulae and algorithms, housing providers can now generate what we believe to be the most effective priority arrears caseloads available in the sector today.

We use a series of lifestyle indicators to trigger early-intervention home visits, and these may even happen before the first rent payment is missed. And because our priority lists are updated in real time, housing officers can be sure that their overall task lists are not only shorter but that they also reflect the most urgent cases, every day of the week.

### Streamlining screens

A further benefit of liaising direct with our end-users when developing RentsConnect v3 has been screen simplification. When additional functionality is added to a system over time, it typically adds extra layers to the navigation process.

We've worked hard to retain all of the original system's benefits and add new ones, while also reverting to a three-click scenario that makes life as easy as possible for our end-users – for example, if a housing officer has 15 visits on their list for the day but they have advance knowledge that one of these residents is going to pay their rent, we wanted to make it easy for them to update the system without having to complete a lengthy process.

And, as part of our listening process, we replaced some of the language in RentsConnect with non-technical words that more closely reflect the terminology used by the housing officers themselves during their visits.

Despite this drive for simplification, we were also able to add much more data to the system, taking the functionality far beyond a report or reconciliation of accounts. Our RentsConnect analytics engine integrates fully with an organisation's housing management system; the user-friendly graphical interface is now searchable by organisation, patch, street and individual property, for any user who wants to view charges, payments and true arrears.

### Everyone benefits

All RentsConnect customers automatically benefit from the improvements we've made in v3. Upgrades are always included in the annual fee for our products, so there are no hidden

charges. As a small company, it's easier for us if everyone operates using the latest version; we can minimise the number of support tickets that arise, which allows us to focus our energies on developing new products and features.

Gary Naylor, chief executive, Thenue Housing, said, "The feedback from staff has been great. They are embracing the change, and the ease of accessing and updating accounts. We made the decision to choose RentsConnect because it completely integrated with our back-office systems, reducing duplication and increasing our efficiency. RentsConnect makes it easy for our staff to access the full information they need to carry out their roles, whether they are on-site, at home or in the office."

### A genuine collaboration

We're delighted that RentsConnect v3 has already made such a difference for staff on the ground. Our customers own the project as much as we do because it's their feedback that has enabled us to evolve, using a process that's robust yet rapid. RentsConnect is like having an extra staff member on your team; it's digital technology but with a human mindset.

*Katrina Heyworth is the head of sales, and Ann Foy is the business development manager at Housing Insight.*





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# Southern Housing's payments with Manifest Software & PayPoint



Southern Housing (formerly Optivo) has implemented seamless payment services for its residents with support from Manifest Software Solutions and PayPoint Housing.

Southern Housing residents now have more options available when making payments. The service enables customers registered with Southern Housing's My Account to make payments seamlessly within the My Account portal while having access to near-real-time rent statements. For customers not subscribed to the portal, PayPoint Housing has a range of other digital channels as well as the ability to pay in cash in any of PayPoint's 28,000 retail points across the UK.

Southern Housing implemented PayPoint Housing as its payment partner in 2022, with Manifest Software providing its Universal Adapter integration platform to interact with PayPoint's APIs and notification services. This combination provides near-real-time data flows, updating Southern Housing's back-office system as soon as payments are made.

## Dynamic payments

At the end of 2022, Optivo and Southern Housing Group merged to form Southern Housing, creating a new housing provider with 77,000 homes. Before the merger and as a driver for implementing PayPoint as its payment partner, Optivo's residents had asked for a more dynamic payment solution so that residents' online payments could be processed faster and updated in the residents' portal.

In its journey to become more digital and to enable self-service, Optivo needed to take payments faster and show residents their accurate and up-to-date rent accounts. Residents expect their payments to be updated immediately, so they can manage their funds and settle any rent arrears as soon as possible.

## Back-office integration

PayPoint sends confirmation that payments have been made to the Manifest Universal Adapter, and these are received and posted into MRI/Orchard as transactions.

On the PayPoint system, an event is triggered in the internal processing system, with triggers configured by Optivo's IT team to send the data to Manifest. Details of the resident who made the payment, the amount they paid and the method they used to pay are all included in the notifications. This information is then processed by the Universal Adapter, enabling Optivo to analyse payments received via the app, web/MyAccount, telephone and retail, including cash paid over the counter, recurring card and Pay-by-Link payments.

Manifest Software created a payment iFrame which was embedded into MyAccount. This is seamless to residents, enabling secure payments to be made via the familiar MyAccount website. The new iFrame replaced the legacy payment functionality so residents can still go to the same page as before, minimising disruption and maintaining familiarity.

Robert Stewart, head of design and development, Southern Housing, said, "Manifest Software has been the glue, working with us and PayPoint in a strong joint development. We did the stress testing internally, with Manifest Software writing the iFrame and our team then thoroughly testing it."

## Real-time processes

Manifest Software developed a solution allowing residents to see their real-time balance within the customer portal using PayPoint's real-time event streamer. Manifest Software also wrote an additional process to reconcile all real-time transactions with end-of-day files and flagging any additional transactions that didn't come via the real-time event streamers during the day.

Jonny Guy, implementation manager, Manifest Software Solutions, said, "PayPoint's extensive APIs enables us to build fully-integrated solutions for our customers. Optivo

# Is Your Data Holding You Back?

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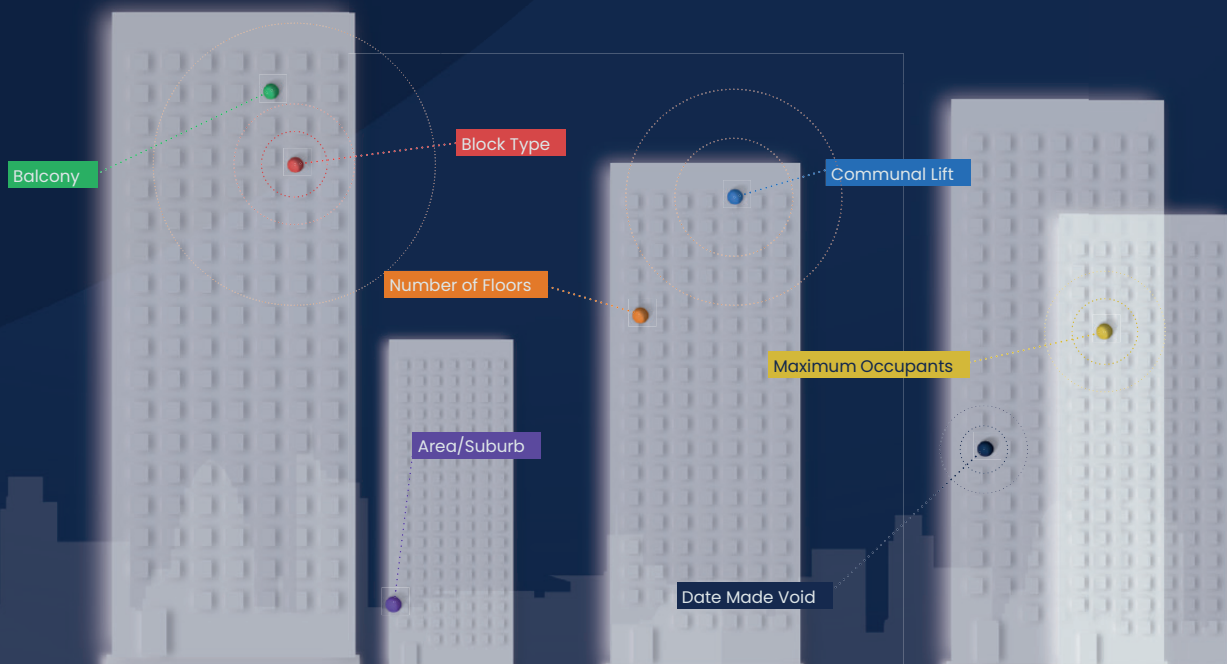


## INTOZETTA QUALITY FOR HOUSING

With over 1000 pre-configured housing data quality rules, we can create a complete picture of your organisation's data quality within a few weeks. The Rules Library contains housing specific rules for Asset, Tenant, and Finance data as well as specific data reporting requirements for NROSH. The software allows rules to be grouped into business processes so that you can measure your ability to Maintain Assets, Collect Rent, Communicate with Tenants, and all other key processes.

## INTOZETTA GOVERNANCE FOR HOUSING

Pre-configured with 100s of common housing data definitions that you can Accept or Modify to create your organisation's Data Catalogue. The software allows you to build a comprehensive picture of where data exists, how it moves between systems, and where the Master source is held. You can manage data ownership, data policies, and provide your employees with an intuitive Data Search capability that democratises data and drives a wider appreciation of good data governance.





had a clear vision and a strong team which kept the project on-track and ensured this project would be a success."

Vicky Lynch, strategic sector and partnerships lead, PayPoint Housing, said, "Residents now have a streamlined payment journey, which is seamlessly embedded in the portal, whereas residents used to be passed out to a third-party payment page."

In the past, it could take three or four days for residents' payments to appear on MyAccount but now payments can appear within 10 minutes.

#### Seamless transactions

Heather Draper, product owner, Southern Housing, said, "After deciding to make it easier for residents to make payments via our self-service portal, we commissioned a payment iFrame from Manifest Software, using PayPoint's MultiPay

platform. This is a much better user journey and keeps our residents within our portal, making it easier for them to complete their transactions with us. Another benefit is the resident no longer needs to enter their payment reference number because of the built-in integrations."

Stewart said, "Moving from 24 hours to less than 30 minutes for account updates is significant. This provides a more transparent, accurate service for our residents. We can now check on the same day as someone has paid their rent whether our systems have been updated. This means we're not spending time chasing payments that have already been made and our residents have more certainty that their rent has been paid."

## AI-powered invoicing for housing

*Invoice processing is a necessary part of business operations, but it can be a time-consuming and error-prone task, especially if done manually, with inaccurate data-entry resulting in delayed payments and misreporting. Invoice processing can be a significant challenge for many housing providers so partnering with an IT partner like TSG to implement a new solution using artificial intelligence (AI) technology can make a world of difference.*

To address the challenge of manual invoice processing, TSG would suggest implementing a new solution that uses AI to automate the process. The solution would use an AI builder that has been trained on various invoice layouts, allowing it to recognise and extract relevant data from invoices.

The AI model can be applied to a SharePoint document library, enabling invoices to be processed and data to be extracted automatically. The AI model can also recognise the supplier, invoice date, invoice number and other essential details needed for payment. For invoices that the AI model can't process, a Power App solution can be used to validate and correct any errors.

Less manual data-entry and fewer errors mean that a housing provider's finance team would need to spend less time dealing with invoices, combined with greater control and visibility. In addition, this proposed solution from TSG reduces the risk of errors and delays in processing. This will likely improve the housing provider's relationship with its suppliers and give it a better view of its cashflow and budgets.



# Diversifying your housing operations

Ilija Ugrinic, Commercial Solutions Director, Proactis

*Many housing providers want to increase their income from non-traditional sources, resulting in an increasingly diverse set of operations. They are consequently taking on new responsibilities and expanding on their traditional remits, from providing social services to partnering with commercial enterprises.*

Based on our experience, here are the three greatest barriers to success when housing providers are considering diversification of their services.

## 1. Entrepreneurial spirit vs. regulation

Housing providers are no longer 'just' about their core activities; they're builders, investors and social care providers among many other new roles. Therefore, when identifying and following new revenue streams, there's a lot to be said for embracing an entrepreneurial spirit.

To generate new income, housing providers must be willing to take risks and explore new business models, particularly when they are competing with existing businesses in the same areas. However, there are strict regulations within the housing sector; complying with these while also exploring new areas can be a challenge. While businesses may do what they can to seek out the lowest costs by cutting corners to attract new customers, housing providers are held to very exacting standards and must lead by example.

## 2. Diversified supply chains

As housing providers enter into new areas, from market renting and student accommodation to regeneration projects and private finance initiatives, new supply chains will need to be created, covering areas such as financing, operations, technology and staffing.

If supply chains haven't been reviewed recently, now is the time to check where your suppliers stack up in terms of both compliance and value for money. Smart finance

solutions, including source-to-pay software, can expedite and automate the process, ensuring that contracts are regularly reviewed, invoices are paid on time and a catalogue of suppliers can be maintained.

## 3. Tackling standardisation

As organisations grow, there is generally a trend towards process standardisation and greater automation. However, standardisation and automation can also lead to inflexibility and a lack of innovation.

Housing staff should be able to access the right information at the right time, with integrated contract management solutions to create a more accessible and uniform approach.

## Conclusion

While housing providers face hurdles in diversifying their operations and generating new income streams, by addressing these three barriers – balancing innovation and regulation, reviewing supply chains and tackling standardisation – they can thrive in a testing economic environment.

*Ilija Ugrinic is the commercial solutions director at Proactis.*

# Housing repairs... Why technology is only part of the answer

Glen Ocskó, Head of Local Government,  
Made Tech



*Let's not get distracted by shiny new bits of technology while ignoring the fundamentals of what we need to build.*

New technology has brought both opportunities and challenges to housing services (including repairs), promising greater efficiencies once they're in place but requiring patience, investment and cultural shifts to make sure we adopt the right tools in the right ways and for the right reasons. Furthermore, we should remind ourselves that technology is an enabler of change, not a deliverer of change.

## **Build strong foundations first**

Budgets, complicated software and legacy technology are among the main challenges for housing providers' repairs teams. They are often stuck with numerous legacy systems which haven't been designed to work with each other. Data doesn't flow easily between these systems and legacy applications often overpromise features and innovation yet usually under-deliver and are rarely user-centred.

People are being sold a vision that AI and predictive analytics are going to solve all their needs but this isn't the case. For example, if analytics can predict that a property is likely to have mould in the coming months but you don't actually have the right systems and processes in place to do something about it then that intelligence isn't helpful to anyone. These new technologies are not the answer, they are only part of the answer.

## **Putting people at the centre**

We need to remember that humans are and will always be the most powerful tool we have. If we get people using the wrong technology and it doesn't solve their problems, their scepticism of innovation rises, and their willingness to fully engage with digital tools falls.

For example, if you used a website for a service and that website is confusing to use, you're likely to pick up the phone to get the answers you need, having lost faith in that particular instance of technology. Putting technology in front of your teams and your end-users can cause a lot more harm than good.

## **Let's talk repairs**

With an online repairs service, housing providers can empower their tenants to take control of their housing needs. It can help to provide a more efficient and cost-effective service and can be quickly set up and integrated.

It's important to focus on these three vital steps when creating an online service:

- **Interoperability** – This is when two or more pieces of technology talk to each other and work together to create something much bigger (n.b. this is different to integration, which is joining two products together and making one service).
- **Data** – This is often seen as the answer to all our problems but it's very rarely understood. Getting data right and getting it to flow between systems is the only way to reap its benefits. The success of technologies such as AI and machine learning rely on the right data inputs and data flows. In the same way that a good chef wouldn't use bad ingredients and expect to produce great food, bad data in means bad data out. Every product we build today needs data portability, where data can move freely and securely.
- **Procurement** – The way we procure our housing repairs platforms needs to change. At the moment, there's a tendency to procure one huge system with a very long list of features. We need an outcomes-based approach to procurement; this will only be achieved when housing providers remove themselves from those big contracts and find the right blend of separate suppliers who each concentrate on solving their piece of the puzzle.

## **Creating value**

In housing and local government, we're often talking about and focusing on solving the big problems and thinking about the long term. This means we sometimes lose sight of the quick wins and the thin slices of value that can make a big difference when they build up over time. After all, it's no good having smart speakers in every room if you have mould on the walls and rotten floorboards.

*Glen Ocskó is head of local government at Made Tech.*

# Flagship selects Totalmobile for repairs

Totalmobile's Connect software for scheduling repairs is now being deployed across Flagship Group's operations.

Connect will be used by Flagship's staff and tenants to schedule maintenance and repairs work, while also providing real-time data on the status of all projects and employees in one place.

Almost 500 Flagship employees were trained on Connect during April 2023, with the final launch expected

this month, including the integration of Connect with Flagship's existing back-office business applications.

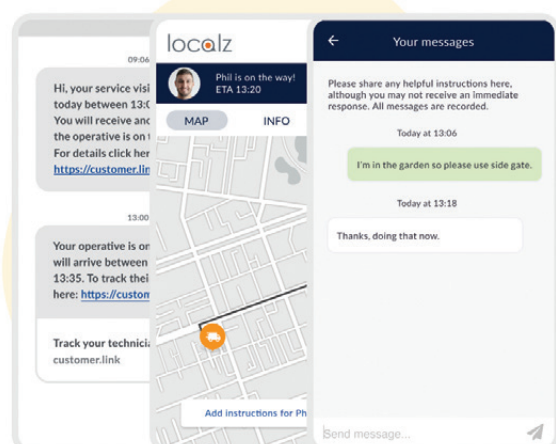
Warren Gannaway, managing director, Flagship Services, said, "Our previous system didn't give our tenants any control over their repairs or connect them direct to the Flagship team.

"Totalmobile promises faster repair times, real-time updates and lets us put the right people in the right place. While no single solution can do it all, Totalmobile is keen to build a bespoke solution for us which will focus on efficiency and productivity."

# Lewisham Homes takes on Localz for 'last mile' communications

*Lewisham Homes has recently deployed Track My Appointment and Rate My Experience software from Localz to provide its tenants with automated 'last mile' updates around repairs and maintenance appointments.*

Sarah Willcox-Jones, director of repairs, Lewisham Homes, said, "We look forward to seeing the difference this technology makes to our residents. We know that they want to be updated with appointments in real-time, and the additional modules will let residents give us immediate feedback after their appointments, so that if there are any problems, we can start working on them straight away."





# Prioritising tenant welfare

David Webb, Managing Director of Property & FM, Totalmobile

*The widely-reported Rochdale Boroughwide Housing (RBH) inquest last year highlighted the potentially devastating impact when tenant care is neglected.*

After the inquest, the Social Housing Regulator issued an order in December 2022 requiring all housing providers with more than 1,000 households to publish their damp and mould inspections for each property. They were also required to describe the steps they would take to address damp-related problems as well as their procedures for handling tenants' complaints in a timely manner.

Prioritising their investments to address these crucial issues will enable housing providers to meet the obligations set out in the long-awaited Social Housing (Regulation) Bill. This bill focuses on increasing protection for tenants, empowering them to ensure more effective relationships and outcomes with housing providers.

With this in mind, housing providers should take the opportunity to adopt a tenant-led service delivery model alongside the successful transition to technology-enabled services.

Technology strategies across our sector should be based on three key considerations:

## 1. Improving tenant communication

Building effective two-way communications ensures a seamless and auditable trail of contact between housing providers and their tenants. From the point where potential jobs are requested through to the conclusion of any subsequent work, reliable and timely digital communication is critical to success and can ensure that accurate information is made available to all relevant stakeholders.

## 2. Optimising service delivery

Improving work scheduling while also ensuring staff have everything they need to complete the job the first time can deliver significant performance and service benefits. For example, housing providers can now create a 'digital twin' for each property they manage. The digital twin records all relevant information about each property, from stock condition to records of



maintenance and asset compliance documents. This provides property, asset and compliance staff with everything they need to inspect, triage and action repairs, planned maintenance and compliance work without having to check numerous and often siloed sources of information.

## 3. Maximising the value of service intelligence

Access to comprehensive real-time insights into service delivery improves housing providers' regulatory compliance, and armed with data on long-term performance trends, housing providers can make better and more timely decisions. This drives long-term efficiency while still ensuring that specific issues are fixed without undue delay and to the satisfaction of each tenant.

In an environment where more emphasis is being placed on tenants' wellbeing, housing providers that embrace technology-led efficiency and innovation will be ideally placed to balance their social obligations with organisational efficiency.

*David Webb is the managing director of property and facilities management at Totalmobile.*





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Achieving net zero



Enhancing fire safety



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# AI and housing communications

Stewart Mackay, Senior Business Development Manager, CM.com

*Huge strides have been made in AI over the past few years, most recently by the advent of ChatGPT and Bard. With AI technology now accessible to the masses, everyone with the internet can now interact with chatbots, ushering in a new era of automation and human-bot collaboration. For housing providers, the way in which communications with tenants are handled is set to advance, fostering stronger relationships and elevating the rental experience.*

## Digital demand

Customer expectations are evolving in tandem with technology, increasing the potential for the creation of meaningful digital connections. Those that facilitate smooth online communications with tenants in a manner and time that suits them will reap the benefits associated with increased digital entry points, namely stronger customer relationships, fewer complaints and higher levels of satisfaction.

## Think omni-channel

Digitalisation has fuelled the demand for omni-channel communications across all sectors and housing is no exception. Housing providers must view each tenant as a unique individual in terms of their communication preferences, availability and specificity of their queries. An omni-channel approach caters to different needs, providing tenants with flexibility and timely access to information and support, whether they're seeking an answer via a digital platform or having an in-depth discussion with a customer-service agent.

Getting customer communications spot on can make the world of difference, both to tenants' experiences

and housing providers' overall operational efficiency. Using readily-available technology to implement an omni-channel approach will serve to streamline communications and ensure that tenants receive a first-rate service tailored to their preferences.

## Touching base with tenants

As businesses across the UK continue to combat the productivity crisis, customer-service agents are faced with increasingly demanding workloads. It is essential for housing providers to shield tenants from the potentially negative consequences of this and ensure that customer relationships continue to be prioritised and protected.

Investment in conversational AI tools that enable tenants to interact with agents via messaging apps, live chat, chatbots and voice will play a key role in freeing up agents' time. Chatbots in particular are a reliable way to provide instant support to customers who may not have the time or inclination to speak with a customer-service agent. Chatbot technology ensures that customers always have a way of getting in touch and accessing the information they require at any point in time, easing the common frustrations associated with waiting on hold for an agent to become available.

## Human-bot approach

While many tenants will welcome the implementation of new conversational AI technologies, engagement with human agents remains a valuable part of relationship-building with customers. Certain stages of the process will require more input from agents than others – for example, many tenants will feel comfortable scheduling viewings or logging a repair request via chatbot, but most would probably prefer to speak to a human to query a clause in their contract. A combined human-bot approach that provides customers with as much choice as possible will create a 'best of both worlds' solution, helping housing providers to embed versatile communications into their day-to-day operations.

## Building the future

As AI technology continues to transform the ways in which businesses communicate with customers,

further developments within housing are inevitable. As more decision-makers wake up to the possibilities of conversational AI, technology will continue to drive innovations in customer experience, maximising satisfaction and long-term loyalty.

Building thriving communities in which everyone has a good quality, affordable home requires strong

engagement with tenants, and meeting their changing expectations will require housing providers to leverage technologies that help agents use their time effectively and add human value where it matters most.

*Stewart Mackay is a senior business development manager at CM.com.*



## ChatGPT in housing

Simon Wilkes, Head of Sales & Marketing, Active Housing by Hallnet

*Social housing is an important component of public infrastructure, providing housing to those who may not otherwise be able to afford it. However, managing social housing can be a complex task, requiring a large amount of administrative work and coordination. In recent years, there has been an increasing interest in using technology to streamline and improve social housing management, and one tool that is particularly promising in this regard is ChatGPT.*

ChatGPT is an AI-based chatbot designed to respond to natural language input from users. It has been trained on vast amounts of text data, which has allowed it to develop a sophisticated understanding of language and a wide range of subjects. This makes it well-suited to a variety of applications, including social housing management.

One way that ChatGPT can be used in social housing is as a virtual assistant to help tenants with common issues and enquiries. For example, tenants could use ChatGPT to report maintenance issues, ask about their rent payments or request information about local services. This would free up staff time for more complex tasks and allow tenants to get quick, accurate information at any time.

Another potential use for ChatGPT in social housing is to support staff with administrative tasks. For example,

staff could use ChatGPT to answer frequently asked questions from tenants, automate routine paperwork or access training resources. This would help to improve staff efficiency and reduce the risk of errors or delays.

In addition, ChatGPT can be used to analyse data from social housing programmes, providing insights into usage patterns, trends and areas for improvement. For example, ChatGPT could be used to identify patterns in maintenance requests, such as which types of repairs are most common and use this information to inform preventive maintenance efforts.

There are many other ways that ChatGPT could be used in social housing, and the possibilities are limited only by the creativity of those who develop and implement these tools. However, it is important to note that while ChatGPT can be a valuable tool, it should not be seen as a replacement for human staff. Rather, it should be seen as a complement to staff, providing additional support and freeing up time for more complex tasks.

In conclusion, ChatGPT has the potential to revolutionise social housing management by providing virtual assistance to tenants and staff, automating routine tasks and analysing data to improve performance. As the technology continues to evolve and become more accessible, we can expect to see more and more applications of ChatGPT in social housing and other fields.

One last thing. This article was written by ChatGPT in response to my request 'write a blog post on how ChatGPT can be used in social housing'.

*Simon Wilkes is the head of sales and marketing at Active Housing by Hallnet.*



# AI-powered experience orchestration

Zaheer Gilani, Account Director, Public Sector UK&I, Genesys

Housing providers are increasingly embracing AI to address critical challenges and improve their tenants' experience. With its wide-ranging applications, AI has the potential to revolutionise property management, streamline tenant communications and enhance decision-making, making both the lives of tenants and housing providers' operations easier, faster and more efficient.

## Experience orchestration

'Experience orchestration' plays a pivotal role in this transformation, enabling housing providers to leverage a single unified customer experience platform powered by AI. This platform allows organisations to seamlessly coordinate technology, interactions and touchpoints across their housing needs, scaling personalisation and empathy to create tenant-centred experiences.

In this article, we will delve deeper into how housing providers can use AI-powered solutions to tackle their key challenges, provide real-life examples of AI deployments in housing and explore the future of AI in transforming the housing landscape.

## Addressing key challenges with AI

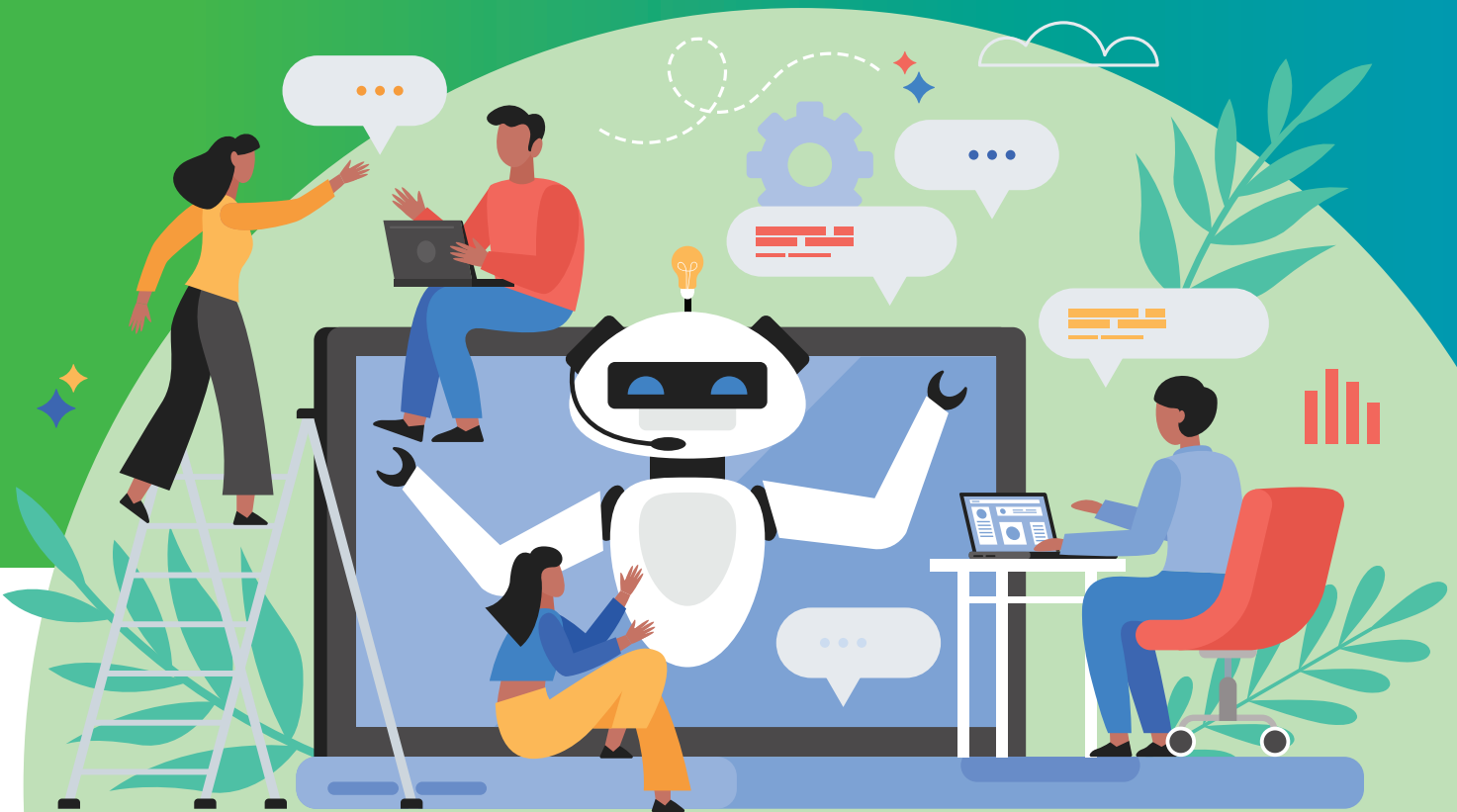
- **Tenant allocation & screening:** AI-driven algorithms can streamline tenant allocation processes by analysing extensive datasets, such as rental history, credit scores and references, allowing housing providers to assess the suitability of potential tenants more efficiently and accurately. For example, Catalyst Housing has implemented an AI-powered tool for tenant screening and housing allocations.
- **Predictive maintenance & property management:** AI can analyse data from IoT sensors installed throughout properties to identify patterns and predict

potential maintenance problems before they become critical, such as a tenant reporting a problem with a jammed window or peeling wallpaper could potentially indicate a mould or damp problem. For example, Clarion Housing which is using an AI-driven solution to predict and plan its maintenance work better.

- **Energy efficiency & decarbonisation:** AI can play a pivotal role in optimising energy usage in properties by analysing data from smart meters and adjusting heating, cooling and lighting systems accordingly. As an example, Optivo is using AI to optimise energy use in its properties, resulting in lower costs and reduced carbon emissions.

## Improving tenants' experience with AI

- **AI-powered chatbots & voice assistants:** AI chatbots and voice assistants can provide tenants with immediate, personalised responses to their enquiries, streamlining communication, improving support services and reducing the workload on customer support staff, as used by Flagship Group.
- **Smart home integration & living experience enhancement:** AI can integrate innovative home technologies, such as intelligent thermostats, lighting systems and security features, providing a more convenient and comfortable living environment for tenants.



- **Enhanced safety & security:** AI-powered surveillance systems can monitor common areas and detect anti-social behaviour or potential safety hazards, maintaining a safe and secure living environment for all residents.
- **Virtual property tours & inspections:** AI-powered virtual reality (VR) or augmented reality (AR) technology can provide interactive property tours and inspections, saving time and effort for tenants and housing providers' staff. For example, L&Q is using VR technology to showcase its new properties to prospective tenants, offering a unique, immersive experience.
- **Personalised tenant services:** AI-driven data analytics can help housing providers gain insights into tenants' preferences and needs, allowing them to provide personalised services, such as tailored support programs, targeted communications and customised living experiences.

### Conclusion

The integration of AI into our sector will become even more widespread, offering new opportunities for innovation and growth. Experience orchestration, enabled by AI-driven CX platforms will give housing providers more ability to predict actions, automate in real-time and drive towards specific outcomes.

The impact of AI on social housing cannot be overstated; it has the potential to revolutionise how housing providers operate and interact with their tenants. By harnessing the power of AI and the advanced solutions offered by leading CX platforms, housing providers can improve property management and increase tenant satisfaction.

*Zaheer Gilani is an account director for the UK&I public sector at Genesys.*

 GENESYS™



# A proactive approach to today's cyber threats

Jonathan Lee, Former Director of Public Sector Relations, Sophos

Many housing providers have embraced rapid digital transformation yet their progress towards cybersecurity maturity hasn't progressed at the same pace. What can we learn from those whose approaches to cybersecurity are more developed?

Over the years, many of you will have focused on getting the essential elements of your cybersecurity right, including implementing multi-factor authentication (MFA) and the latest security patches. In addition, you've probably carried out training to inform staff about how they can play their part in helping to keep your organisation secure. As part of this programme, you may have carried out phishing simulations to help staff identify how an adversary might try to target them to steal their credentials.

## 10 steps to cybersecurity

Wherever you are on the spectrum of cybersecurity maturity, a good point of reference is the '10 steps to cyber security' framework published by the National Cybersecurity Centre (NCSC).

Much has been amended since its introduction in 2012 because the technology we use and the risks we face online continue to change significantly (with consequent regular updates to the framework). However, the main themes of the document have remained consistent: understand your organisation's risks; implement appropriate mitigations; and always prepare for cyber incidents.

So far, so good, but we know that the cyber-threat landscape is becoming increasingly complex and challenging for many housing providers to deal with alone. Knowing the limits of your team's cybersecurity expertise and how long you could maintain a response in the face of a sustained attack is essential when working out what to do next.

## Recruitment gap

There is a global shortage of cybersecurity professionals, not just in the UK housing sector. The 2022 Cybersecurity Workforce Study reported a gap of over three million cybersecurity professionals worldwide, with a gap of almost 60,000 in the UK. Nearly 70 per cent of cybersecurity workers said that their organisations didn't have enough skilled staff to provide effective security, and more than half the employees at organisations with recognised workforce shortages thought that staff deficits put them at a 'moderate' or 'extreme' risk of cyberattack.

Even if your housing provider is fortunate enough to have some cybersecurity skills in-house, running a security operations centre (SOC) around the clock isn't something that many of you can do. Attackers don't respect the hours that your staff can cover; they wait for the most opportune times to launch their attacks. This may be in the middle



of the night, at weekends or during bank holidays when you're unlikely to be sitting in front of a console keeping an eye on what's happening on your network.

### Managed detection and response

To cope with this skills shortage and the complexity and scale of today's threats, we see a growing number of housing providers adopting a more developed and advanced approach to cybersecurity, and choosing to partner with a managed detection and response (MDR) provider such as Sophos.

Sophos's MDR service provides you with three modes of engagement. We can simply notify you if we see a security incident and let you handle it, we can collaborate and perform security operations such as threat hunting or incident response together, or you can authorise us to take care of everything for you if we see something malicious happening on your network.

Not only do we provide you with the flexibility of what action to take when you discover a threat, but we are also truly vendor agnostic regarding our ability to work

with third-party security tools, enabling you to get the maximum value out of your existing security investments. If you wish to use Sophos' protection tools, that's great – or if you want to use what you already have, that's fine too. One thing that we can be sure of is that threats will keep coming thick and fast, and they will continue to be too complex for most housing providers to deal with alone. Getting the fundamental aspects of cyber hygiene and staff training right will only take you so far; in today's world you need to be on the front foot and take a proactive approach to cyber security. Partnering with an MDR provider is an easy way to increase your security and preparedness for future breaches.

*Jonathan Lee is the former director of public sector relations at Sophos.*

## SOPHOS



# Fife Council's connected homes with Aico

*Fife Council is exploring a solution to monitor housing quality for all residents in its 32,000 properties. To reach this goal, the council has started a 12-month pilot project as part of its 'Housing Plus' programme, with Aico's HomeLink Connected Home solution installed in 90 properties spanning a range of building types.*



## The pilot project's goals

Fife Council will trial the HomeLink system to measure the benefits of gathering data on indoor environmental conditions in order to improve housing quality and gain a detailed understanding of how its housing stock is performing. Each property will have:

- An Aico Ei1020 environmental sensor installed in the bathroom to measure temperature and humidity (bathrooms are considered high-risk areas due to the humidity surges caused by baths and shower).
- Aico Ei1025 environmental sensors installed in both the living room and the bedroom to measure temperature, humidity and carbon dioxide.
- One Ei1000G gateway – this is the Connected Home solution's hub, which extracts data from the environmental sensors to be presented in Aico's HomeLink portal.

The council will use three specific use-cases during the pilot project:

**1. Damp and mould risk** – Measuring temperature and humidity levels in high-risk rooms, such as bathrooms, will enable the council to identify homes at risk of developing damp and mould, with an accompanying indication of whether the conditions have been created by structural or environmental factors.

**2. Indoor air quality** – Collecting temperature, humidity and carbon dioxide levels will enable the council to pinpoint homes that have insufficient ventilation (e.g. due to a poorly-specified ventilation system or a resident disabling that system). The data can be used to improve indoor air quality, therefore reducing other risks such as damp and mould.

**3. Excess cold and heat loss** – Through measuring temperature trends across different property types, the council can pinpoint properties that may be under-performing in terms of energy efficiency.

The 90 homes involved in the project comprise both retirement homes and properties that have reported problems around the three areas above. Once the environmental sensors and gateway have been installed, they will gather data for the next ten years.

## Resident engagement

Introducing connected devices into residents' homes for this purpose is a relatively new concept and therefore needs to be understood by residents to gain genuine buy-in of the technologies and to ensure they experience the system's benefits.

All residents participating in the pilot were invited to a resident engagement day, in association with Aico, to find out more about the project, products and technology, alongside all council staff involved in the project.

Jillian Rodgers, business change manager, Fife Council, said, "Our 'environmental sensor engagement' day was a huge success with residents as well as our housing and building staff attending to learn more about the project.



Aico's regional specification managers, Ryan Conway and David Richmond, also provided the in-depth knowledge during the day to answer all questions."

### Introducing the environmental sensors

Residents were introduced to the environmental sensors that would be installed in their home and were provided with information on how they work and the types of data they collect. Further details were given regarding how insights can be used to create healthier homes:

- Damp and mould (are there structural or environmental factors contributing to this risk?);
- Excess cold and heat (energy efficiency or fuel poverty indicators);
- Allergy risk (are there conditions suitable for dust mites?);
- Indoor air quality (is there adequate ventilation in the property?).

For additional peace of mind, Aico's regional specification managers explained the installation process to reassure residents that there would be minimal disruption to their lives and homes.

Ryan Conway, regional specification manager, Aico, said, "The resident engagement day was a great success with a good turnout. The residents were engaged and learned the benefits of having environmental sensors in the property. Educating and working closely with the residents will be vital to the success of the pilot."

### Exploring the HomeLink app for residents

To engage with residents throughout the process, the participants were also given a demonstration of the HomeLink app.

The app provides residents with their home's data, empowering them to take control of the health of their homes before any intervention from the council is needed. Residents will receive notifications with helpful tips and advice on how to remedy potential problems and why it's important to act.

In addition, throughout the project customer surveys will be carried out by the council's Housing Plus team, working closely with residents to ensure the project is delivered seamlessly, while assessing the benefits for residents and Fife Council.

**To learn more about Aico's Connected Home solution, please visit: [aico.co.uk/homelink](https://aico.co.uk/homelink).**

## Poplar HARCA extends IoT project with Aico

Poplar HARCA is extending its deployment of Aico's HomeLink devices to around 6,000 homes after the success of its pilot project involving 500 homes at the end of 2022. Aico will be installing over 15,000 of its IoT-based HomeLink environmental sensors within the next 12 months.

The HomeLink sensors collect data on temperature, humidity and carbon dioxide to track and monitor potential problems with damp and mould, ventilation, fuel poverty and air quality.

Tenants can use the HomeLink app to access information about the conditions in their homes, while Poplar HARCA can use the HomeLink portal for live data updates.

Each property has its own HomeLink gateway, giving the housing provider a complete overview, whether for one house or a block of flats. Live data is gathered by the IoT-based environmental sensors, with alerts sent via the app in terms of air quality, damp and mould, condensation and temperature. Alternative channels, including text messages, emails and post, are available for residents who are unsure about using apps.



HomeLink's 'signature of mould insight' offers a tool to analyse the underlying cause of damp and mould problems, comparing potential 'structural' issues with the fabric of the property to potential 'environmental' issues relating to how the property is used. This knowledge enables housing providers to take targeted action to resolve damp and mould, with their resources better directed between structural and environmental remediations.

Elizabeth Williams, assistant director of asset management, Poplar HARCA, said, "While still at a relatively early stage, this rollout is already having clear benefits for our asset management. In properties where devices are fitted, we can help residents before mould proliferates which benefits their health and reduces our costs."





# Understanding extended detection & response

Sean Tickle, Cyber Services Director, Littlefish

*As cybersecurity threats continue to evolve and become more sophisticated, you may have heard more and more about XDR (extended detection & response) as a cybersecurity solution. But it can be difficult to pin down exactly what XDR does and why it's such a powerful tool for housing providers to use, particularly alongside a managed cybersecurity partner.*

As a relatively new approach to threat detection and response, XDR is often described as delivering 'holistic' protection against cyberattacks, in the sense that it provides organisations with a more complete view of security events across their entire IT environment and technology stack (incl. endpoints, networks and cloud infrastructure).

Using an XDR approach, organisations can mitigate and monitor threats across a wider attack surface, and from previously-siloed security tools offering, as Gartner puts it, a "unified security incident detection and response platform that automatically collects and correlates data from multiple proprietary security components."

In other words, what XDR offers is a much easier and faster investigation, threat-hunting and response service than previous generations of security tools – invaluable for housing providers storing so much sensitive and personal information.

### How does XDR work?

XDR connects and aggregates data from multiple security solutions, allowing them to work together to improve threat visibility and reduce the length of time required to identify and respond to an attack (what we call 'dwell time').

Ideal for cloud-based environments, XDR typically involves the use of advanced analytics and machine-learning algorithms to analyse security event data from multiple sources in real-time. This can include log data from endpoints, network traffic and cloud services, as well as leveraging threat intelligence feeds and other contextual data.

By analysing this data, XDR solutions can identify complex, multi-stage security threats and incidents that might otherwise be missed by traditional security tools.

### XDR in a nutshell:

1. Data is ingested from multiple log types across multiple points of an organisation's attack surface;
2. Data is parsed and correlated using machine learning and automation to identify suspicious or abnormal activity;
3. This activity is then prioritised by severity so threat hunters can quickly contain, investigate and respond.

It's worth pointing out that because XDR typically involves automated response capabilities, security teams can quickly contain and mitigate threats as soon as they are detected. This results not only in faster response times but also reduces the burden on security teams to constantly act. Automated actions that organisations may choose to



set up could include quarantining infected endpoints, blocking malicious network traffic or notifying security personnel of potential incidents.

#### What's the difference between MDR and XDR?

Where MDR (managed detection & response) improved detection and response capabilities over the use of tools such as traditional anti-virus software, XDR extends the range of MDR over as many attack vectors as possible, so not just endpoints but also gaining the visibility and ability to take response actions on other surfaces including email, user accounts, applications and cloud infrastructure.

In short, XDR takes a wider view than MDR and also has a much broader capability. It uses cutting-edge technologies (such as machine learning) to provide higher visibility to organisations and employs analytics and automation to help detect or even predict attacks.

#### What are the benefits of a managed XDR service?

An XDR solution is more than a cybersecurity 'upgrade'; it completely changes the way cybersecurity is approached. In making this leap, housing providers can benefit from:

- **Scalability:** XDR gives housing providers the ability to scale their security infrastructure as their needs change because the solutions leveraged within the service are cloud-based and bespoke rulesets can always be tailored to suit.
- **Enhanced threat visibility:** XDR delivers granular visibility by working across multiple layers, collecting and correlating data from an array of sources such as email, endpoints, users, cloud workloads and networks.
- **Improved efficiency:** with advanced analytics and correlation content pre-built in the tool, on top of threat-

focused TTP (tactic, technique & procedure) bespoke rulesets, XDR automatically detects and contains advanced threats. This means that security teams can react with greater agility.

- **Boosted productivity:** XDR unites multiple tools under one centralised solution, meaning that they are much easier to handle, oversee and manage. Aggregating data in one place like this saves time and allows the different tools to act in unison, making the whole workflow much smoother.
- **Better compliance:** XDR helps housing providers meet a range of compliance and regulatory requirements by providing continuous monitoring and reporting on security controls; this means it's easier to demonstrate information security compliance.
- **Customised alerts:** XDR solutions have the ability to enrich automatic responses to threats based on rules and through the use of security orchestration and automated response (SOAR). As well as cutting down on manual investigation time and reducing alert fatigue, this allows analysts to make key decisions faster and more effectively.
- **Continuous improvement:** XDR solutions use machine learning to continuously learn and improve over time. In this way, the protection organisations receive from their XDR solution will get better and better as time goes on.

*Sean Tickle is the cyber services director at Littlefish.*



# Artificial intelligence in housing

Business imperatives, internal & external operations, pitfalls & advice, ethical questions and staff concerns

*Housing Technology interviewed AI specialists from Civica, Converse360, Made Tech, Mobysoft, NEC Software Solutions, Orlo and Riverside Group on the business imperatives, internal and external operations, pitfalls and advice, ethical questions and staff concerns associated with the adoption of AI by housing providers.*

## The business case for AI in housing

Glen Ocskó, head of local government at Made Tech, said, "We're all talking about AI and machine learning but the data that's needed to make it worthwhile is atrocious; the data is shallow, lacking substance and not shared because every housing provider keeps its data to itself."

"The only reason platforms like ChatGPT are quite useful is due to the sheer volumes of data that have been pumped into them. In housing, we don't have that much data because people aren't sharing non-identical data with each other to allow us to train AIs. All we can do is take a thin slice of data and put a superficial AI layer on top of it. The first thing we need to get right is the data that feeds and trains the AI."

Trevor Hampton, director of housing solutions at NEC Software Solutions UK, said, "AI can have the biggest impact in income collection and asset management. In both areas, the earlier problems are identified, the more cost-effective it is to deal with them."

"For example, AI can help prevent tenants falling into arrears by spotting spikes in late or non-payments within specific categories. If a pattern is forming, housing providers can take a more joined up approach and provide support to a particular group of tenants. When applied to assets, it can help drive efficiencies and compliance across housing providers' entire housing portfolio by predicting repairs, maintenance and safety checks."

Alison Stock, group director for digital & technology at Riverside Group, said, "The business case for AI in housing is to improve the customer experience with chatbots"

or conversational AI assistants. Customers get almost immediate responses to simple queries without the need for a phone call, leaving housing staff free to deal with more complex queries.

"Riverside already provides some simple chatbots to help customers with various standard queries, through our Salesforce CRM application, with all of our chatbots having been developed by our customer services team itself, supported by our in-house IT staff."

Paul Berry, head of product management at Civica, said, "Using AI as one pillar of a wider IT strategy creates a strong business case for AI. A practical starting point is identifying specific use-cases for quick wins; for example, enabling customer interactions through a chatbot is a low-cost and low-complexity option. And while that sort of customer-facing automation is a strong reason to use AI, using it to augment human decisions by providing deep analysis can be equally valuable."

## AI for internal operations

Karl Roberts, technical director at Converse360, said, "Accessing AI is becoming much easier for non-technical teams so housing providers can experiment with all sorts of new AI services. ChatGPT (a large language model [LLM] AI) and numerous other generative-AI services now provide user-friendly interfaces for creating a range of valuable new services. Within housing operations, AI can be used to create content, perform data analysis and trend spotting, detect fraud, produce reports and automate repetitive processes."



*"Implementing AI should be treated like all other IT projects; you can't just install a service and leave it to run without constant monitoring."*

Karl Roberts, Technical Director,  
Converse360

Dominika Phillips-Blackburn, head of product (income) at Mobysoft, said, "For their internal operations, housing providers can use AI to leverage their existing datasets to improve tenant satisfaction, reduce arrears and streamline maintenance operations as well as forecast the future."

Hardeep Johal, head of product and development at Orlo, said, "Some realistic examples of how AI can help



*"Automation can raise accountability questions when there is no human intervention – who is responsible for mistakes?"*

Paul Berry, Head of Product Management,  
Civica

housing providers with their internal processes include predictive maintenance and repairs, algorithmic allocation of resources such as staff, equipment, and supplies, fraud detection, chatbots and virtual admins, and data mining and predictive analytics."

## AI for external operations

Civica's Berry said, "People use the term AI to describe a variety of underlying technologies and solutions. Examples of these range from low-intelligence robotic process automation (RPA) through to trained machine-learning algorithms making complex predictions.

"Increasingly common AI applications include the bulk processing of tenant data from external sources (such as universal credit), virtual assistance for customer service, predictive maintenance and arrears analytics. Some AI solutions focus on delivering greater efficiencies, thereby freeing housing staff to concentrate on higher value activities, while others provide better outcomes to human decisions by providing real-time insights."

Made Tech's Ocskó said, "We're all frustrated with chatbots and the formulaic answers they provide. ChatGPT will take us to the next level where we can put lots of data in the background so it can perform natural language processing (NLP) and understand what someone is really asking rather than just giving a set of options to choose from; common customer queries such as 'my tap is leaking, what are my options?' can easily be taken off the table with AI.

"If every housing provider could feed data into a communal pot (in an ideal world), then we could use machine learning to work out patterns for, say, pre-emptive repairs for customers. However, this would only work with mass learning and mass data and no single housing provider in the country would be able to give the amount of data needed to make this happen."

Riverside's Stock said, "Chatbots, automation and clever workflow design can help customers self-diagnose repairs and make rent payments more easily, generally helping



*“The only reason platforms like ChatGPT are quite useful is due to the sheer volume of data that have been pumped into them.”*

Glen Ocskó, Head of Local Government, Made Tech

to improve customer services. And automation can help drive data integrity and data quality, giving us a golden thread of accurate data, which will be essential as we develop more capability around predictive analytics and building information modelling (BIM).

“There are many ways in which IoT, machine learning and AI are either connected or overlap. IoT devices, such as smart thermostats, might contain devices that use machine learning and AI, operating in an interconnected cloud of sensors powered by AI in rule-based systems.”

NEC’s Hampton said, “Housing providers can use AI to identify tenants’ behaviour and tailor their support accordingly. For example, many tenants are making the choice between heating or eating right now and using intelligent IoT sensors to analyse how they are heating and ventilating their homes and the effect on their utility bills could be very helpful. The IoT data might show that they’re leaving too many windows and doors open during the day, making it more expensive to heat the property in the evening.”

### Pitfalls to avoid

Made Tech’s Ocskó said, “AI is being hugely over-promised, insofar as it can apparently solve everything. It is a tool to be used, nothing more. Don’t listen to promises that you can reduce head count and cut budgets; that’s entirely the wrong approach to AI.”

Converse360’s Roberts said, “Implementing AI should be treated like all other IT projects; you can’t just install a service and leave it to run without constant monitoring. Set your vision, think big but start small, and plan carefully. Decide which use-cases can add the most value and could contribute immediately. Experiment and review the outcomes in days or weeks, then grow the successful elements and ‘fail fast’ those that don’t add value.

“In the early days of your AI projects, more supervision will be needed but this will substantially reduce over time. Although AIs can train themselves and automatically

improve their data, this approach can be problematic and dangerous; humans are needed to reinforce the training data and ensure the outputs are factual, consistent, unbiased and avoid controversial content and profanities.”

Mobysoft’s Phillips-Blackburn said, “Data quality is usually the biggest hurdle when implementing AI. Poor data generates poor predictions, and this is frequently the case when housing providers rush into implementing AI.

“It’s very difficult to build a trustworthy AI system that accurately reflects human judgement. Self-learning AI and ‘black box’ models often produce questionable results and suffer from a lack of human supervision during the training process. This is also the case for negotiating regulatory and ethical concerns because AI systems are often not designed to operate within regulatory boundaries or tested against the potential underlying biases within the training data.”



*“Data quality is the biggest hurdle when implementing AI; poor data generates poor predictions.”*

Dominika Phillips-Blackburn, Head of Product (Income), Mobysoft

Orlo’s Johal said, “It’s wrong to assume that AI doesn’t require a level of training and learning because human resources are still needed. For example, chatbots require metabases to be fed with existing customer information for up-to-date FAQs, help pages and guides. Most importantly, don’t assume that AI can replace your contact centre. Yes, AI is great for customer service but it’s important not to lose the human touch.”

### Ethical concerns

Civica’s Berry said, “AI can be subject to bias from the underlying data, the human programming of algorithms or the training of the machine. There are also concerns around privacy as the potential for large-scale data collection and analysis becomes easier. Automation can also raise accountability questions when there is no human intervention – who is responsible for mistakes?

“These concerns can be mitigated with careful design, for example, by removing or minimising the use of any sensitive data which could lead to such biases. Robust governance processes and continuous monitoring also

provide assurance and, where necessary, models can be re-trained to ensure the right outcomes.

"Using AI to augment human decisions, rather than allowing complete autonomy, can mean that a human decides a final outcome so there can be more confidence of oversight. Furthermore, an open approach to sharing details of the technologies and how and why they are being used can provide reassurance; frameworks such as the algorithmic transparency standard can be adopted to provide a consistent approach and ensure clear information is available."

Converse360's Roberts said, "AI can work in a number of ways and can consume data from LLMs (such as ChatGPT) or it can be private, specific and self-contained data. The data LLMs are exposed to may not all be factual and when summarising data LLMs can 'hallucinate' and produce inaccurate information. When exposing AI engines to your customer data, you should be aware that there will be a lot of personal information that must remain private."

NEC's Hampton said, "The major ethical concern around AI is to do with unconscious bias. The fear is that if trained inaccurately, the AI could inadvertently discriminate against certain groups or individuals. Adopting a sector-wide approach to best practice and determining the right reasons for applying it will ensure AI stays within ethical boundaries and improves tenants' lives. And because AI regulation is evolving slower than the AI technology itself, there needs to be a higher level of governance and sign-off than for traditional technologies."



*"AI isn't about removing staff, it's about enabling them to have greater insights."*

Trevor Hampton, Director of Housing Solutions,  
NEC Software Solutions UK

Riverside's Stock said, "Technology innovators (and doomsayers) have highlighted the combined promise and perils of AI, with the latter including the AIs taking over and replacing us. But if designed well with carefully-chosen, simple use-cases, I think the opposite will be true and AI will usher in a new era of customer service.

"AI will mean that housing providers will need to skill up their employees for this 'brave new world' but most

employers do this all the time as part of their day-to-day operations. For example, at Riverside, we have an ongoing focus on our colleagues' digital capabilities, encouraging the use of a comprehensive e-learning portal, technology 'spotlight sessions' and IT 'driving licences'."

## AI & data management strategies

Made Tech's Ocskó said, "AI should accelerate data management strategies on a huge scale and open them up. If we're going to collectively make use of AI, we can't live in a world where we are hiding data away. Organisations need to anonymise their data and release it in such a way that AIs can learn from real-life situations.

"The problem with 'data management' is that it's often misconstrued as 'data protection' and locking away data. It is really about how you use data to manage your services better, so opening it up in the right way is key to making AI work effectively."

Mobysoft's Phillips-Blackburn said, "There is a trend to aggregate all data in one place to allow AI models to be developed on big data sets. This means consolidating data from disparate sources but also making sure that the data is clean. Consequently, housing providers must take into account their AI plans when considering their wider data management strategies."

NEC's Hampton said, "There is so much hyperbole around AI that a less exciting but crucial aspect to it has largely been ignored and that's how it has been steadily improving data management. Data quality is improving because AIs must be trained using clean and accurate data or they will make poor or wrong recommendations; better data quality, accessibility and cyber security are all beneficiaries of the increasing use of AI."

Orlo's Johal said, "AI can have a significant impact on housing providers' data management strategies but it's very important to ensure that AIs are implemented ethically and are bounded by appropriate data-governance policies to protect privacy and prevent bias."

## Is AI tactical or strategic?

Civica's Berry said, "Tactical AI applications focus on specific tasks, problem solving and data-driven decision-making in limited contexts. Examples include AI-powered

chatbots for repairs' diagnostics, pattern-recognition algorithms for detecting defects to external fabric of properties using satellite, drone and Google Earth-type imagery and natural language processing (NLP) for sentiment analysis.



*"It's very important that AIs are implemented ethically and are bounded by appropriate data-governance policies to protect privacy and prevent bias."*

Hardeep Johal, Head of Product & Development, Orlo

"Strategic AI applications focus on analysing complex systems, predicting future trends and helping with high-level decision-making. Examples include AI systems predicting a housing provider's future spending based on building components using deterioration modelling and other contextual data, or even helping to define corporate strategy."

Converse360's Roberts said, "AI can be both tactical and strategic. Tactical AI might be using it to resolve a specific problem or for a particular use-case; it may be cost-effective and quick to deploy and it solves an immediate problem. A strategic view is needed if you want to start automating processes, integrating systems or digitising new services. For those strategic developments, there's a lot more planning needed to really understand what outcomes you're looking for – for example, we're now seeing many housing providers trying to re-imagine how they can deliver services rather than just digitising what they're already doing."

Mobysoft's Phillips-Blackburn said, "AI informs strategic decisions because it takes time and careful management to build models which are accurate, ethical and trusted. However, those same insights can be used to make short-term, tactical decisions."

## The (misplaced) threat to housing staff

Made Tech's Ocskó said, "Housing staff shouldn't feel threatened by AI. AI should liberate them from dealing with mundane, repetitive queries. Staff will be able to work on the interesting cases and complex scenarios that AIs are unprepared for and unsuited to."

NEC's Hampton said, "AI isn't a threat to housing staff and shouldn't be perceived as such. AI isn't about removing

staff, it's about enabling them to have greater insights to make better decisions. To put it in context, the volume of quality data needed to train an AI isn't nearly enough to perform even the simplest of tasks performed by a typical housing officer."

Orlo's Johal said, "AI can be daunting if not implemented correctly, whether that's trying to do too much too soon or staff not being sufficiently trained to allow the AI to complement their roles. Above all, it's important for senior teams to make sure their staff understand why AI will be beneficial rather than threatening.

"If done ethically, AI shouldn't be seen as human replacement but an enhancement to day-to-day roles. For example, if 80 per cent of inbound enquiries are FAQs and repeated queries, the remaining 20 per cent needs a more hands-on approach, which is where customer-service staff can really excel."

Riverside's Stock said, "AI is not a threat to housing staff – for example, most housing providers routinely use AI as part of their cybersecurity capabilities. Some housing providers are already on their second generation of AIs, moving beyond simple chatbots and automated messages to use sentiment analysis to prioritise their most complex calls, matching the calls with the most appropriate person to tackle the problem there and then with the customer.



*"AI isn't a threat to housing staff – most housing providers already routinely use AI as part of their cybersecurity capabilities."*

Alison Stock, Group Director for Digital & Technology, Riverside

"Riverside implemented 8x8's 'contact centre as a service' (CCaaS) solution last year and we're now set up to incrementally turn on new capabilities as we go along, as well as use our Salesforce CRM software to generate 'next best actions' in real time for our call-centre advisors."

## Examples of AI in housing

Civica's Berry said, "Good examples of AI in our sector include arrears analytics solutions delivering operational efficiencies and financial benefits through a combination of automation and human-decision augmentation, and using RPA to automate repetitive tasks such as universal credit reviews."



Converse360's Roberts said, "Many housing providers are using our 'conversational AI' platform to automate customer service and offer enhanced services outside business hours, with HMS data used to identify customers and provide personalised responses. That said, we've seen various implementations of basic chatbots that don't use AI, can't connect to corporate data and don't integrate with contact centres; these siloed offerings don't offer a great service."

Orlo's Johal said, "Bromford is a great example of AI in housing. After the same-day implementation of our chatbot, the housing provider saw over a quarter of its customers' enquiries resolved without any need for a human agent, thereby saving time and reducing its annual costs by over £330,000."

Made Tech's Ocskó said, "There are so many companies out there claiming that AI will predict everything, but they only have access to some early AI tools – it just isn't ready yet. AI will only be really useful when one of the big software companies can collate, manage and process the amount of collective data required for a meaningful resource."

*Housing Technology would like to thank Paul Berry (Civica), Karl Roberts (Converse360), Glen Ocskó (Made Tech), Dominika Phillips-Blackburn (Mobysoft), Trevor Hampton (NEC Software Solutions UK), Hardeep Johal (Orlo) and Alison Stock (Riverside Group) for their editorial contributions to this article.*

## GENERAL NEWS



## Soho Housing is set to deploy Evo's property management platform in a trial project to fully digitise its repairs service.

During the trial, Evo will take over responsibility for the management and delivery of all repairs, contractors and documentation relating to around 25 per cent of Soho Housing's properties. Evo will give residents an app with which report problems, triggering a series of automated workflows for the entire repairs process.

Barbara Brownlee, chief executive, Soho Housing, said, "Our partnership with Evo allows us to deliver a truly digital repairs service to our residents, and we're looking forward to seeing an improvement in the quality of our repairs and maintenance services."

Steven Rae, chief executive, Evo, said, "The undersupply of social housing is a common theme at the moment but most of the commentary focuses on new developments which, while important in itself, ignores the large number of properties that need fixing first and even more that only need a simple solution or upgrade to prevent them from being taken out of supply."

Innovative providers such as Soho Housing are recognising that digital transformation is a vital part of delivering housing that meets the Decent Homes standard. Our technology is simple and user-friendly and enables repairs to be completed out quickly and smoothly, removing a layer of unnecessary resource that could be reallocated elsewhere."



# Seven steps to data maturity

Ben Proctor, Innovation Director, Data Orchard

*Data underpins every part of an organisation. That makes it hard to manage and improve but powerful if you get it right.*

Data science and technology give us tremendous new ways of understanding and managing information about people, assets and services, yet many housing providers struggle to realise the full benefits of their investments in new technologies, find that they failed to deliver or simply ran into the sand before being fully rolled out.

Data projects can be particularly challenging. Data suffuses an organisation, not just in terms of its technology and infrastructure but also in terms of how people talk and think about their assets, customers and services.

## Data maturity framework

It's useful to have a model to understand the holistic nature of data in an organisation. As an example, our data maturity framework considers seven themes of data in an organisation. These include tools, the data itself, how the data is analysed and how it is used. It also includes three people-focused themes: leadership, culture and skills.

Our framework was developed after research into hundreds of housing providers, charities and social enterprises; it is free for anyone to use under a Creative Commons licence.

Leadership and culture are absolutely crucial; our research has demonstrated a very strong correlation between an organisation's data culture and its overall data maturity.

## Encouraging experimentation

A mature data culture is one where questioning and experimentation are encouraged. A data mature organisation is one where it's okay to come into work each day and point out what went wrong yesterday. That's how organisations use data to drive improvement, but that doesn't happen by accident; it requires concerted efforts

by leaders and managers to encourage curiosity and exploration.

In reality, many organisations unintentionally drive questioning out of their culture, in no small part because moving to a questioning culture can be very difficult. For example, a classic psychological study from Harvard found that, counter-intuitively, more effective teams in hospitals seemed to make more errors; the study showed that more effective teams report more errors because in an effective team it is safe to talk about the things that went wrong.

## Changing behaviours

To move from an organisation where surfacing errors is discouraged to one where it's actively encouraged requires heavy investment, not in software, staffing and infrastructure but in management and leadership behaviours.

This isn't to say that tools and technology aren't important because they clearly are. The plethora of BI/analytics tools now available can be used to generate insights that were simply not possible before. However, housing providers will only realise the value of their investments in these tools (and in the analysts and data scientists needed to harness them) if they've already invested in their organisational data culture.

Investment in tools and culture isn't the end of the story. Analysis relies on good quality, well-governed data. Conducting analysis won't provide any value unless the insights are used by teams to change the way they do things. All employees may need new skills, not just in how to use the tools but also in how to think about and use data in their work.





### The importance of data skills

All of this takes leadership. Our research also suggests that data skills are lacking from many housing providers' executive teams. We can't expect all leaders to also be data professionals but there are signs that leadership teams lack access to a strategic understanding of how data can affect their overall performance.

Before drafting the business case for that new analytics platform or fancy data warehouse, it would make sense to take stock of where you are against all seven themes of data maturity and make sure you have a plan to make progress on all fronts.

*Ben Proctor is the innovation director at Data Orchard.*

## Socitm Advisory's £5 million investment from BGF

*Socitm Advisory has received a £5 million investment from BGF, with the capital investor becoming a minority shareholder in the company. BGF's investment will be used by Socitm Advisory to expand its range of services and grow its client base across local and central government and other public services.*

With a strong presence in the social housing sector, Socitm Advisory provides a range of professional services covering data, technology, innovation and organisational design for projects ranging from long-term



ERP transformations to broader digital and organisational change programmes.

The deal was led by Mark Nunny and Elena Kovalikhina from BGF's Central & East growth team, with Nunny joining Socitm Advisory's executive board as part of the deal.

Nunny said, "Socitm Advisory is a well-established transformation consultancy, having built market-leading expertise and specialist services to support its public-sector customers. We were attracted to the business by its focus on improving public services, the calibre of its people and the RoI it's delivering to its customers."



## Business automation and ‘can do’ innovation

George Grant, CEO, Broadcaster & Publisher, Housing Technology

*I’ve had the privilege of witnessing at first-hand the incredible changes that have swept through the social housing sector during the past 15-20 years, as our company has grown to become the largest IT and business news and information service for this vital sector. I’d like to share my thoughts on the role of business automation in the transformation of social housing, focusing on its potential to improve the quality of business applications and ensure compliance.*

Our sector, like most others, is undergoing dramatic digital transformation. To keep up with the pace of change, we need innovative tools to ensure housing providers can build, maintain and manage homes efficiently. Business automation platforms, like those offered by companies such as Leapwork, are at the forefront of this movement.

Housing Technology recently co-hosted an evening event at Quaglino’s in London that brought together a small number of senior IT and business heads from leading housing providers, with the focus on how business automation can accelerate digital transformation. We were joined by guest speakers Gareth Levingston from RHP Group and Richard Holland from Notting Hill Genesis as well as James Funge from Leapwork.

Automation platforms are game changing for housing providers. By enabling them to automate repetitive tasks, these platforms increase efficiency, reduce the risk of errors and ensure compliance with ever-changing regulations. This translates into faster, more streamlined processes for building and maintaining homes, ultimately benefiting those who need them most.

One of the key challenges for almost all housing providers is the integration of multiple software systems to manage their diverse and inter-connected business processes. Business automation platforms simplify this by offering



seamless integration capabilities. This means that housing providers can easily connect their existing systems to these platforms, creating a unified environment which streamlines operations and reduces the need for manual interventions.



Furthermore, many business automation platforms are adopting a no-code approach, empowering non-technical staff to create, maintain and update automation processes. This democratisation of technology enables housing providers to tap into the skills and knowledge of their entire workforce, rather than relying solely on their IT specialists, thereby fostering a 'can do' culture of innovation and agility.

At our recent London event, Gareth Levingston of RHP and Richard Holland of Notting Hill Genesis shared their experiences of quality assurance (QA) and integration strategies around application architecture, with both of them highlighting the importance of robust QA processes to ensure the reliability and usability of software applications. Business automation platforms address this QA need by automating the testing process, allowing housing providers to quickly identify and resolve issues, ensuring the highest standards are maintained.

The full potential of business automation platforms can only be realised when housing providers integrate them into their daily operations. As RHP's Levingston said, "Business automation is important to us because it gives us the ability to scale and find efficiencies in laborious areas, freeing up smart people to do more strategic things.

"We have started working with Leapwork and QA and we've already seen great successes, and expanding this approach into other areas, such as rents, repairs and customer contact as well as emerging technologies like AI, is an absolute must for us."

*George Grant is the CEO, publisher and co-founder of Housing Technology.*

**HOUSING  
TECHNOLOGY**



# Designing your future delivery approach

Stephen Repton, CEO, One Consulting

*While change and transformation continue to drive business decision-making, ICT is still sometimes viewed as a 'break-fix' responsive service whose function is to simply keep the lights on; it's only when things start to go wrong that people sit up and listen. It's therefore important to be on the front foot and be thinking towards the future to stay ahead of the curve and to assure good governance and viability within your organisation moving forward.*

Many housing providers still don't engage with their ICT teams in ways that enable them to get the most out of this important service. A lot of people talk about ICT being an enabler for business change, but in the real world and behind closed doors, that's not always the case.

I often talk to senior housing executives who want to make changes but don't know where to start when it comes to the perceived 'dark art' of ICT service delivery. This can be due to a knowledge gap or that they think things are going well based on what they're being told. With that in mind, here are a few things to consider when designing your future delivery approach (FDA) for your ICT.

## Problems

The delivery of ICT services is no longer about technology and fixing things. It's about identifying the business problems that you need specialist expertise and help to solve. Start with analysing your key business issues and work backwards, from the problem through to the required outcomes.

This approach will help to identify solutions and benefits as well as support the business case for your FDA. When designing your approach, it's crucial to understand the day-to-day challenges that ICT can help to address; this will help to clarify the available options for your FDA.

## Participate

A fundamental part of any FDA design and its implementation is consultation and ongoing engagement with colleagues. Often when designing new ICT models, organisations 'do to' colleagues rather than 'do with' them; collaborating with the people affected by change enables them to be part of the journey.

It's important to talk to people – get their views on what works well, what could be improved and share any ideas that might enhance the ICT experience. This approach builds trust and loyalty, helping to embed new ways of working and 'gel' teams together.

## Personalities

We often see organisations dive straight into technology to solve problems and then get bogged down with escalating costs, wasted effort, inadequate solutions and an ICT service that doesn't or can't deliver what is needed. Furthermore, people often get slotted into roles because of their technical ability or previous experience, rather than their personality, approach and willingness to learn new things. However, it's easier to teach the technical side of a job than it is to change attitudes and behaviours.

When designing your FDA, play to the strengths of your people. Have functions, roles and processes that enable the right people to make a difference, identify shining



stars and develop plans that allow them to thrive through collaboration with colleagues across the organisation. Build your approach to enable continuous personal development, succession planning and remove single points of failure.

### Priorities

Create an ICT strategy and action plan that provides a golden thread back to your organisation's operational delivery plans, corporate risk strategy and overarching business strategy. Tell people what the organisation's priorities are so that there is clarity for everyone.

This approach will inform the skills, knowledge and experience needed to align and deliver effective ICT services alongside your business priorities. It will ensure that you can design an approach that will deliver what the business needs rather than having an ICT service that 'thinks' it knows what the business needs are.

### Productivity

Have an approach that enables quality to be reviewed continually. Identify service inter-dependencies and design processes that follow good practices (n.b. these should be simple and easy to understand and carry out).

Often ICT delivery becomes complicated because of unnecessary bureaucracy, preventing the job from getting

done and resulting in all-round frustration. Create simple, flexible controls and measures that enable you to know how your ICT service is performing and use those insights to continually refresh your service approach.

### Performance

The role of ICT takes many forms but in simple terms, it's all about the experiences of people who deliver the service and the people who use the service on a daily basis; happy, motivated people will deliver great outcomes.

Customer service should therefore be the focal point for any FDA, and core to this is maintaining great relationships and building trust. This can be achieved through business partnering, speed of response, setting expectations and keeping people informed. Any FDA design should consider these key components along with the metrics and feedback needed to provide the insights for continually refining your service approach.

One Consulting has supported many organisations to review and improve their approaches to ICT service delivery; if you would like to know more, please contact us.

*Stephen Repton is the CEO of One Consulting.*

Since 2008 Housing Technology has been connecting established technology partners with UK housing providers and local authorities.

Working with organisations such as **Aareon, Aico, and FireAngel**, we have produced industry-leading research and guides on the latest technology trends in social housing, including:

- **IoT Deployment in Housing**
- **CRM & Omni-Channel Communications**
- **Comprehensive Guide to Connected Homes**

As the leading technology publication for housing, we have showcased organisations, including **Civica, Esuasive, Housing Insight, IntoZetta, Lioness Recruitment, NEC Software Solutions** and **Sophos** to communicate their messages and solutions to the sector through our bi-monthly magazine.

Our live events, interviews, roundtable events and Q&A sessions have also helped to connect our technology partners with housing association decision makers to build new, and strengthen existing relationships.

