

Future Gazing Future Shaping

Exploring Innovation, Transformation
and the Future of Housing Delivery

Updated findings - April 2019





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Foreword

Being innovative or looking to transform carries risk for organisations – risks which need to be managed, and mitigated against failure, which often slows progress. But choosing not to change is increasingly becoming even more risky.

Consider the example of Kodak: in 1975 employee Steve Sassoon, invented the world's first digital camera, which was shelved by Kodak as bosses thought "no one would ever want to look at pictures on a screen". After further development, Kodak chose not to market the camera in the 1980s due to fears it would put other parts of their business model at risk. Kodak made some money from the patents for the digital camera, but others were able to manufacture digital cameras at scale and build market share. In 2012, largely due to not embracing change, Kodak filed for bankruptcy. In fact it feels as if a month cannot pass without news of another household name (Blockbuster, HMV, Toys R Us and Debenhams are all more recent examples) that is being detrimentally impacted by innovative organisations that are delivering the same services in a digital way.

In 2016 Altair and 3C undertook a sector wide survey with the aim of stimulating debate and discussion on the opportunities for modernising delivery models in social housing. At the time of our first Future Gazing, Future Shaping research there was a sense of excitement around the sector; a feeling that the technology integration we have observed in other sectors would transfer to social housing and that aspects of services would start to be delivered quite differently, responding to the expectations of customers.

The sector expected social housing organisations to look very different in 2025. They would likely be fully digitalised with an agile workforce resilient to internal and external pressures. Providers would be able to effectively and immediately respond to customer needs and tailor products and services that maximised resident welfare. The ongoing deregulation of social housing and the introduction of new entrants with increasingly commercial business models all pointed towards a refreshed sector and a move away from traditional delivery methods. Technology and innovation were seen as critical enablers in this transition.

Outside social housing, technologies which were in their infancy in 2016 such as the Internet of Things (IoT) and predictive analysis, have matured significantly over the last 2 years. Furthermore, these technologies are demonstrating a greater level of flexibility which can be applied to a greater range of sectors and situations. Overall, housing providers still appear to be receptive to considering and incorporating innovation within their organisations. However, the enthusiasm and optimism displayed in response to our original survey in 2016 does not appear to have followed through into implementation to the degree that we anticipated.

Our 2016 research project felt like the beginning of a new era within social housing. Our survey respondents exhibited a high degree of self-awareness about the current state of modernisation within the sector and appeared prepared to enthusiastically embrace innovation, transformational change and new emerging technologies; learning from other sectors and organisations in the process.

Introduction

Why invest in innovation?

“It is not the strongest species that survive nor the most intelligent, but the ones who are most responsive to change”. Charles Darwin.

While obviously not writing about business, Darwin’s theory of the evolution of species can also be said to apply to organisations. History shows that businesses and organisations that are resistant to change are generally highly inefficient and when the environment around them changes they do not respond effectively. The ability to innovate in response to changing customer needs and changes to the wider operating environment provides the opportunity for organisations to gain a competitive edge, differentiating them from the competition and allowing them to provide a greater range of products and services and / or increase market share.

Innovation should be a high priority of any modern day, forward thinking business. It is true that innovation is not cheap (Apple’s annual spend on R&D is upwards of £10bn), however the overall cost of not innovating at all, is the risk of failing all together.

Case studies - a failure to innovate

Blockbuster

A household name with a loyal customer base, Blockbuster’s failure to foresee the transition towards digital streaming lead to many customers quickly switching to services such as Netflix. Footloose companies such as Netflix also have significantly reduced operating costs and are able to open their service to a wide range of customers. Additionally, the vast levels of customer data Netflix can utilise means products can be tailored to each individual through the use of predictive analysis.

Toys R Us

A more recent example of a business failing to innovate. The business had an overreliance on physical in store purchases, and the emergence of Amazon exposed the company’s lack of e-commerce capabilities. Amazon’s success is not only anticipating technological changes but also lifestyle changes of their customers. More people have less time to dedicate towards physical consumer shopping and the seamless nature of Amazons process from buying a product to it arriving at your house has led them to become one of the largest companies in the world.

The pace continues to accelerate

Across the economy we are seeing an acceleration in innovation and transformation.

Through the rise of data driven processes, AI integration and digitalisation, businesses can capitalise on opportunities that give them a competitive edge, be it in making internal processes more efficient and/or improving the services offered to customers.

Much of the technological developments promised for decades are reaching a point of maturity and will continue to become more influential and prevalent in our everyday lives.

High frequency change

There is a growing opinion that the type of change we are seeing across society is one of high frequency and low amplitude; the idea developed by Tom Cheesewright proposes that constant incremental change is now the predominant condition rather than occasional major shifts. Hence, businesses and workers need to be agile enough to respond to this new landscape.

Essentially, gone are the days of one independent, single change revolutionising how businesses and people operate, but a move towards more frequent, incremental changes across multiple sectors that ultimately leads to a greater more profound, sustained transformation.

Studies predict that this accelerated pace of change could lead to many jobs becoming fully or partially redundant as more organisations exploit AI and begin to rethink how they recruit and train staff.

More than at any point in history the development, implementation, adoption and either success or failure of a new idea happens more and more frequently. Consequently, organisations need to base future business models on the sharing of ideas with a constant flow of information and data. Whereas throughout the 20th century, technology needed high levels of infrastructure, including electric cables, grids and telephone wires, modern day technology has less reliance on physical infrastructure and as a result can be adopted more readily.

For workers there must be an increasing willingness to accept the need to be agile, with a diversified and ever evolving skillset.

But do some sectors and organisations remain resistant to change?

Although 2017 figures from the Office for National Statistics (ONS) showed expenditure on research and development (R&D) undertaken by UK businesses continued to grow, expanding by £1.1 bn to £23.7 billion in 2017, an increase of 4.9%, this has yet to manifest itself into higher levels of productivity. Since the financial crisis (2008/09) there has been a general slump in advanced economies' productivity growth at 2.3% annually, with the UK productivity increases averaging only 0.4% annually for the last decade.

Innovation for a lot of organisations still presents a high degree of risk while also perceived as a threat to existing jobs. Additionally, businesses are aware of the opportunity cost of investing in unproven technology

without a guaranteed a return on investment. This hesitation can be heightened during economic downturns and/or times of political instability.

Generation Z and evolving customer expectations

There is also a key issue regarding the customer base and its evolving expectations. Service organisations must constantly align services and products to suit their needs.

Today's upcoming generation (Gen Z) are digital natives, their outlook on the world is unique, different from their predecessors and they have a new more positive perception regarding new technology uptake. Additionally, their expectations as customers on the relationship they have with a service provider is dramatically changing.

There is an automatic expectation that personal information can be accessed anywhere at any time, while services should be tailored to the bespoke needs and wants of each individual.

Consequently, businesses need to be willing to listen to its customer base and use their feedback to continually improve and tailor products, services and user experiences that are more suited to them.

A look back

Future Gazing, Future Shaping - 2016 findings

The original survey in 2016 attracted responses from the senior leaders in 70 social housing providers across the UK with the aim of stimulating debate and discussion on the opportunities for modernising delivery models in the future. Coming out of the 2016 study were three reports that provided a comprehensive view of our results and some considerations moving forward:

- Report 1: The vision for Housing in 2025
- Report 2: How the sector is approaching innovation and transformation
- Report 3: Learning from others

At the time of our first future gazing future shaping research - there was a sense of excitement around the sector. A feeling that the technology integration we have observed in other sectors would transfer to social housing and that ultimately the sector would look very different in 2025. Our report aimed to provide clarity on the following issues:

- The key drivers for transformation in the sector
- What the typical housing organisation will look like in 2025
- How organisations are tackling those drivers by transforming their businesses
- Best practice approaches being adopted by providers
- Innovative thinking that could be applied from outside of the sector

The vision for housing in 2025

Our original research concluded that the sector expected social housing organisations to be fully digitalised with an agile workforce that are resilient to internal and external pressures. Additionally, providers would be able to effectively and immediately respond to customer needs and tailor products that maximised resident welfare. The ongoing deregulation of social housing, new entrants and commercial business models all pointed towards a refreshed sector and some moves away from traditional delivery methods. Technology and innovation were seen as critical enablers of that transition.

Much of this change will be due to technological integration with high hopes for the way in which the 'Internet of Things' (IoT) and Artificial Intelligence (AI) could potentially revolutionise the sector.

The overall message to social housing providers was that they must be prepared and willing to integrate the oncoming wave of changes and to adjust business models now in order to accommodate them.

How the sector was then approaching innovation and transformation in 2016

Of the 70 respondents who took part in the survey, around 60% described their organisation's approach to innovation as either 'early adopters' or 'early majority'. This encouraging finding was also backed up by Inside Housing and Dolphin Index that found social housing providers are on average more innovative than UK organisations as a whole.

Additionally, providers were not only saying the right things, but their actions hinted towards a sector transformation, with 65% stating they are currently implementing change/ transformation programmes. Interestingly, 70% of respondents had in place a digital strategy with a high focus (85%) on ways in which they could automate customer transactions.

Our findings also pointed towards RPs being very receptive to implementing change programmes. However, especially at board level, research suggested a skills gap with regards to IT competency which was a key constraint for providers to successfully deliver technology driven transformation programs.

Learning from others

Our research in 2016 also sought to identify other sectors and organisations that had successfully integrated technology and modern ways of working and to see what could be learned and applied to social housing provision.

We identified some exciting technology-based innovations such as GPS wearable technology to help keep track of individuals with dementia and drones being used to assist asset management teams when surveying properties.

Additionally, organisations ahead of the curve were adapting business models specific to their individual needs, rather than 'one size fits all'. Much of this is only possible through Customer Relationship Management (CRM) tools that allow providers to easily view transactions and interactions with customers with complete ease, usually through a web-based portal.

Outside social housing, our 2016 research suggested that Retail and Banking were the other sectors that leaders looked to for inspiration due to their high levels of customer transactions. The internet of things (IoT), a concept that allows devices connected to the internet to interact and exchange data, was also seen as having a significant application to social housing with one example showing how home components such as boilers could transmit data to repairs teams to predict future maintenance requirements.

Current drivers for change

Brexit

So, what has happened in the two years since our first survey? Well Brexit, Brexit and Brexit! Dominating much of the UK (and EU's) attention for the last couple of years, the nature of Brexit (and whether at all!) is still being negotiated. The impact of this high level of uncertainty has yet to be significantly felt, and the UK economy has performed generally as expected throughout 2018, with GDP averaging 1.4% and inflation averaging 2%, while unemployment levels hit a 40 year low of 4%.

The impact of this on innovation and transformation? Well one could argue that necessity forces change, and the potential disruption presents an opportunity for social housing to reinvent itself, to rethink strategies and processes and to use technology and digitalisation, such as offsite construction and AI, to drive innovation and remove inefficiencies. Whether this theory comes to fruition remains to be seen and very much depends on the 'type' of Brexit the UK gets.

Developments within the social housing sector

The pace of change has also significantly increased within social housing. The impact of Brexit has yet to fully take hold, however there is increasing belief a hard Brexit could lead to increased supply chain costs especially in relation to new builds, while the influx of external private funding into social housing could be constrained in a situation where high inflation leads to a substantial rise in interest rates. Throughout 2017 and 2018 we have observed several other regulatory and sector trends that have a bearing on the sector's future direction.

Post-Grenfell

The Grenfell tragedy in June 2017 has had a far-reaching impact on the sector and has kicked started the debate over the voice of residents and their engagement and influence with their landlords. Consequently, the Hackitt review further exposed the deficiencies with development and maintenance of high-rise buildings and looking forward to 2019 and beyond, we expect to see both regulatory changes and more strict application of safety rules.

Social Housing Green Paper

In Autumn 2018, the sector received the highly anticipated 'Social Housing Green Paper', labelled by Teresa May as "major reform of social housing is needed". It contains significant implications for social housing providers moving forward.

Additionally, the government stated its goal of the RSH having a more rigorous and proactive approach to enforcement of consumer standards, using Ofsted in the education sector as a model example.

One of the key highlights of the Green Paper is the potential implementation of 'league tables' that would publicly expose poor performing providers, while the Regulator is hoping this increased level of transparency makes landlords more accountable and incentivises them to improve performance and tenant services. We also expect this to be driver for transforming service delivery models in future.

The Green Paper also encourages social housing providers to keep residents' concerns at the core of their objectives and to make sure their voices are not only acknowledged but feed into future planning and decision making. Involving residents throughout is advisable especially when implementing new technology or transformation programs. RPs should consider using feedback from residents as means of gauging what works best for them and continue to monitor their needs and preferences.

Housing crisis – no end in sight

Seen as one of the most significant challenges facing the UK in the coming years, the basic problem revolves around housing demand outstripping supply and has been doing so for some time.

A recent study (Jan 2019) from Shelter highlights several issues with the decline in social housing development and vast levels of young people unable to own a property. Additionally, the number of homeless households has risen to 320,000 in 2018.

Research estimates an extra 240,000-340,000 new build homes are needed per year to satisfy growing demand, while the current government has pledged to deliver 1 million homes by the end of 2020 and to deliver half a million more by the end of 2022.

Effective approaches to transforming service delivery models can create much needed capacity for investment in additional development.

New lines of funding and new entrants to the sector

The significant reduction in government funding available to social housing providers in the last 10 years has forced RPs to look further afield and turn to private markets to fund development, with providers increasingly using the bond market as a means of accessing external finance.

This 'funding gap' has presented an opportunity to investors looking to diversify their portfolios and invest in a sector that is seen as relatively low risk and able to deliver stable returns over the long term.

Additionally, in recent years we have seen the increased number of 'for profit' providers entering the market. For example, Legal & General has launched its own Registered Provider which has already acquired asset in excess of £1b.

The emergence of 'for profit' providers is seen as both a threat and opportunity for the sector. One view argues that new funding provides a means of meeting social housing demands and if new entrants abide by the regulator's standards, then on a macro level its very beneficial. However, critics point towards for profit providers risking the historical 'charitable' values of RPs and that they can bid much higher than traditional providers for Section 106 agreements from councils. It is likely that these new sources of investment will also bring new ideas on service delivery and operating models.

What the updated survey says

Methodology

Our approach was to design a short, responsive survey that would serve as a basis for comparison against our 2016 research. While we updated some questions with content to reflect current innovations, the new survey maintained the same questions and structure as its 2016 counterpart.

The sector-wide survey was issued via e-mail link to our database of affordable housing directors, executives and board members to gather their views on transformation and innovation in their organisations and in the wider sector. Responses were collected using SurveyMonkey online software.

Uptake on the survey was moderate with 49 complete responses. These individuals represent organisations in England, Scotland and Wales.

Results

The following section sets out the results for the topics covered by the survey along with interpretation and commentary.

Innovators or laggards






As in the 2016 survey we asked respondents to assess the approach of their organisations along a scale from innovators at one end to laggards at the other – see Table 1. No respondents described themselves as ‘laggards’, although only 4% did so in 2016. The fact that all respondents don’t see themselves as the last ones to adopt new innovation has significance.

The most noteworthy change is the increase of 17% of respondents describing themselves as ‘early majority’, with the main drivers behind this change being twofold:

One, providers in 2016 who saw themselves as either ‘laggard’ or ‘late majority’ have most likely implemented new innovations over the last 2 years and have become more confident in their approach to integrating new methods of working or technology. Additionally, this may be a sign that providers initially slow to uptake new technology have now managed to implement matured technology within social housing, including web portals and social media applications.

Second, our study shows a fall in providers describing themselves as ‘innovators’ or ‘early adopters’ by 7% and 5%, respectively. These results are somewhat contradictory to the opinion in 2016, where providers were expressing their intention to not only integrate new methods, but to take a leading role in that transition. Results ultimately point towards a changing perspective on up taking innovation. A substantial increase in the middle ground of ‘early majority’ demonstrates that there is a willingness to introduce new technology, however a combination of unsuccessful pilot schemes and substantial time lag on the return on investment for new technology may push innovation down the pecking order for social housing providers.

Table 1: Innovation Scale

<p>Innovators</p> 	<p>We are often a trailblazer and the first organisation to adopt an innovation.</p>
<p>Early Adopters</p> 	<p>We are often opinion leaders and are similar to innovators in how quickly we adopt, but we are also as concerned about managing performance, reputational and other risks as we are about being ahead of the curve on new ideas.</p>
<p>Early Majority</p> 	<p>We adopt an innovation but only after it has gathered momentum within the sector.</p>
<p>Late Majority</p> 	<p>We approach an innovation with a high degree of scepticism and tend to make changes to our approach only after the majority of the sector has adopted an innovation.</p>
<p>Laggards</p> 	<p>We are the last to adopt an innovation and typically tend to be focused on 'traditional' approaches to service delivery.</p>

Question 5: 2016 and 2018 Organisational Approaches to Transformation and Innovation?

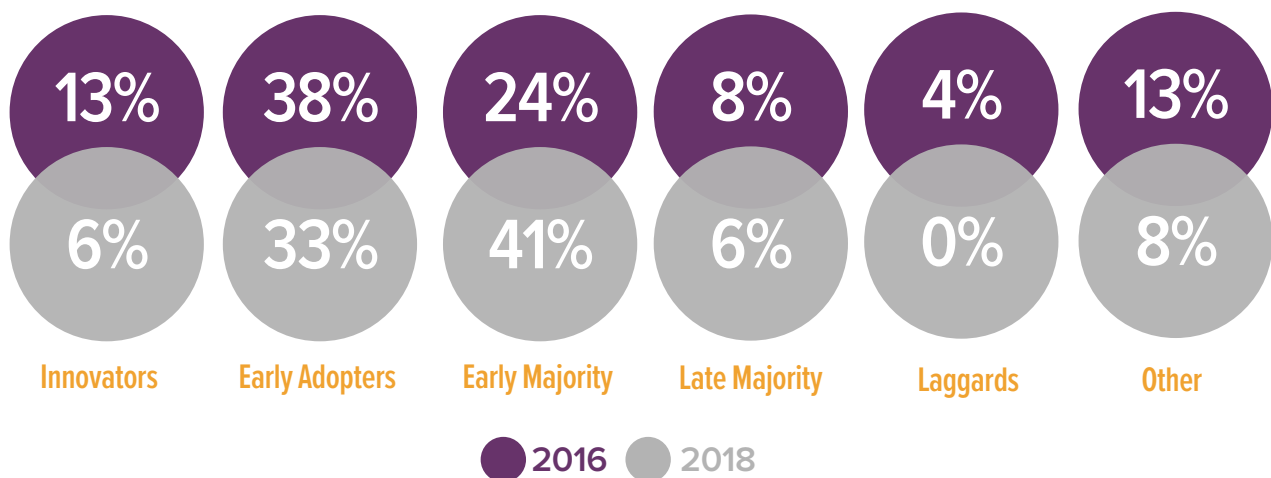


Fig 1. How respondents described their organisations' approach to transformation and innovation

One encouraging sign is a fall in providers describing themselves as 'laggard' or 'late majority'. This suggests that once a new innovation has matured within an industry and proven its benefits, less eager providers are genuinely willing to integrate. There is also the compounding effect of providers becoming more confident to integrate future innovation at an earlier stage.

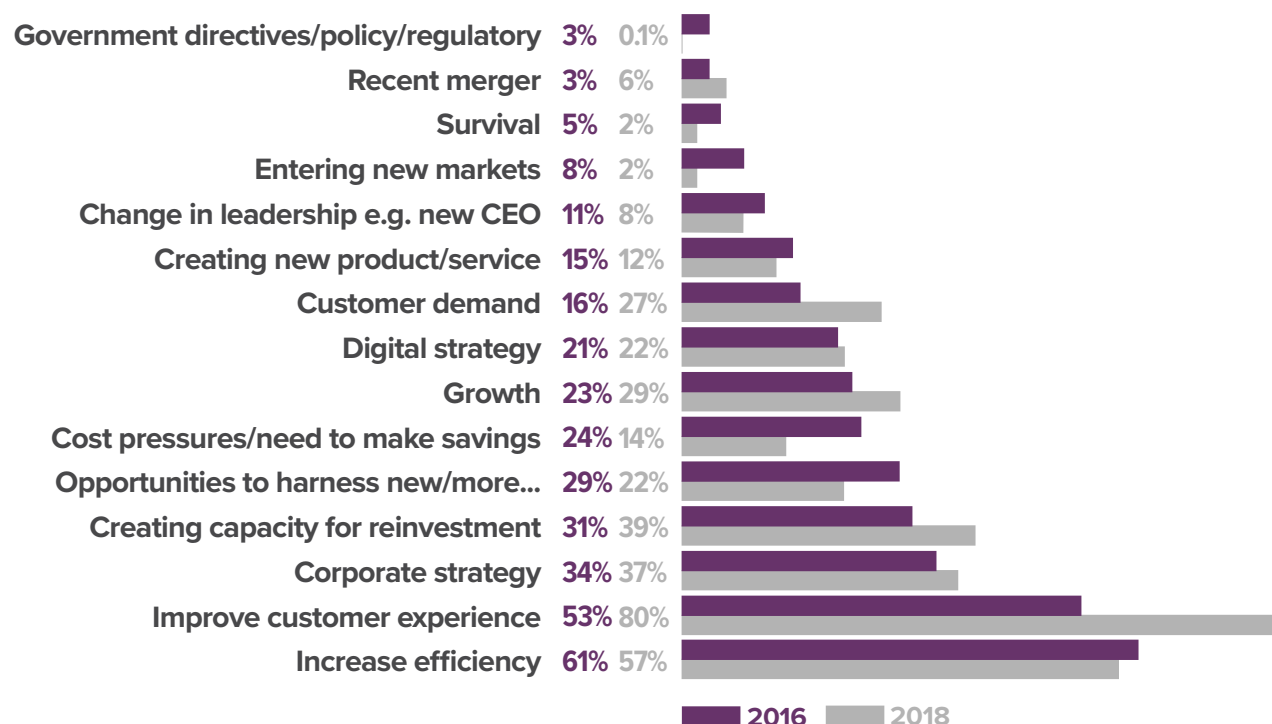
Why are organisations transforming?

The greatest change we have seen from 2016 is a 27% increase in 'improving customer service' and an 11% increase in 'customer demand' as the main drivers behind transformation and change. Both these changes are interesting and provide insight to the changing trends of both the customer (tenants) and providers (social housing providers).

From the tenant perspective, there is an automatic expectation that services should be tailored, accessible, simplified and consistent. This is mostly due to the pace of change they have experienced in other sectors, where technology such as predictive analysis, utilisation of big data and AI are becoming more common place.

Question 9: 2016 and 2018 Current Drivers of Transformation & Change

Fig 2. Drivers for transformation and change in social housing organisations



From the social housing provider's perspective there is a growing awareness of having increased levels of tenant involvement. Due to the sector's response to Grenfell, and more recently set out in the green paper, the Regulator is encouraging social housing providers to not only acknowledge tenants, but fully engage with them in their overall objectives. Ultimately this may have the effect of social housing providers investing in innovation that satisfies their tenants. Our next question sheds some light on the customer focused innovations that respondents believe will be most prominent in 2025.

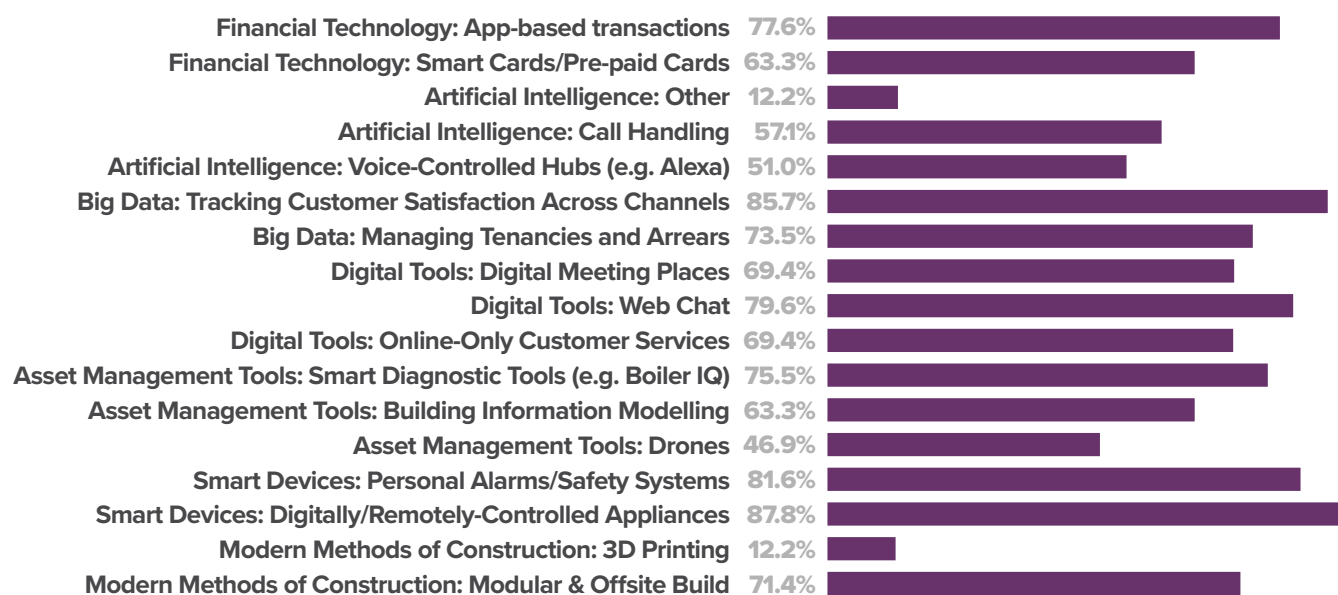
Another key point here is that respondents have not changed their stance on survival and macroeconomic pressures such as Brexit being significant drivers for change. This could stem from the sector’s relative security from flux in the wider economy. However, if the sector continues its trajectory towards greater deregulation and especially private sector funding, moving away from grant funding, this exposure to market forces could lead providers to invest in technology as a means of managing macro-economic risks.

What technologies will be in use by 2025?

Our current study asked a new question; we asked respondents to select those technologies that they anticipated would be implemented by 2025 – see Fig 2. Perhaps not surprisingly, the top three responses were all tenant focused – see Table 2.

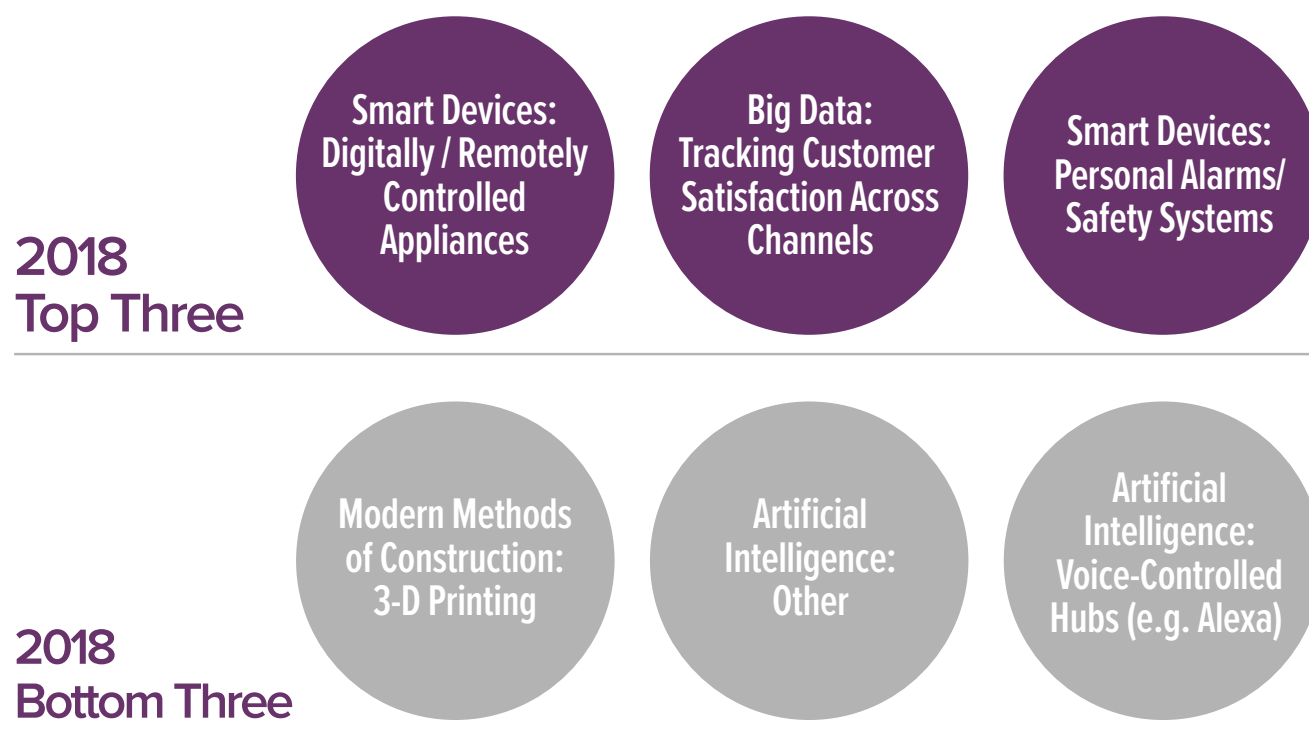
Question 12: Technologies in 2025

Fig 3. Proportion of respondents that expect to adopt specific technologies by 2025.



The use of big data to better understand and track customer satisfaction, which is already a staple of the majority of other customer focused sectors, should be a prominent feature for all social housing providers. Access to and intelligent use of data is starting to differentiate organisations, with those at the forefront demonstrating the ability to more swiftly adapt, making informed decisions and ensuring good governance. Those that are not in control of their data are finding business transformation more difficult and in certain cases, particularly around compliance, the consequences for the executives involved has been severe.

Additionally, around 85% of respondents have confirmed that by 2025 they will be using both digital smart devices, such as personal alarms, and devices that can be remotely controlled. The use of smart devices goes hand in hand with the IoT, and the natural progression is that once a home has been fitted with several smart devices, social housing providers will be able to utilise IoT technology to obtain greater operational efficiencies and more effective, diverse services to its residents.

Table 2: Technologies that are most and least likely to be implemented by 2025

(This question was not asked in 2016)

The 3rd top rated technological development that our survey respondents identified as likely to be adopted by 2025 was modern methods of construction. 71% of respondents selected this. The use of off-site manufacturing (OSM) has gained a lot of attention in recent years while the pressure to build more social homes could force providers hands to seriously consider OSM as a viable solution to satisfy growth plans. Interestingly only 12% of respondents selected 3-D printing, which demonstrates the infancy of the technology especially in relation to maintenance and construction.

The fact that 7 out of 10 respondents are considering implementing OSM as a viable solution to their growth plans has significance and sheds some light on sector changes. It is a widely known fact that throughout the sector there is a construction skills shortage. With Brexit around the “corner” and the expected strict future immigration laws pending, this skills gap might be further exposed. A hard Brexit may see many EU migrants (who make up vast amounts of construction sector) leave the UK. Our results may show this as a key driver for social housing providers seriously considering OSM as a means of protecting themselves against the risks associated with traditional construction methods.

How are organisations transforming?

Our results correlate with our findings about how organisations are approaching transformation and change, in that there is a move to the ‘middle ground’. Essentially laggards are becoming braver while innovators are scaling back and falling ‘back into the pack’.

Turning a stated intention into practical and tangible plans is another thing, however it would seem this trend is following a similar pattern. Although still around 60%, the expectation in 2016 was the respondents who stated that they were planning to implement transformation programmes would now be at the implementation phase. In those two years it would seem that plans haven't manifested to implementation and there has actually been a reverse effect.

Making a judgement on whether overall this a good thing for transformation and change within the sector is up for debate. From one angle, it is encouraging that providers who were previously not considering innovation to change their approach and plan a change programme. This may lead to technologies that are widely used throughout the sector (e.g. online portals) becoming fully embedded in all social housing providers.

Table 3: Proportion of respondents who are implementing a transformation programme

	2016	2018	Change
Yes, we are currently implementing our programme	65%	59%	-6%
Yes, we are currently in the process of planning our programme	29%	39%	+10%
No, we are not planning for or implementing a programme	6%	2%	-4%

However, for new innovations to take hold and develop within a sector, there needs to be a real appetite from a few, often large providers that have the capabilities and resources to invest. In the 2016 report we stated that providers were forecasting significant savings over the next 5 years, and it has been suggested that perhaps R&D investment proved an easy budget line to eliminate.

What type of change is being implemented?

Over 80% of our respondents indicated their transformation programme included digitalisation for shifting customer channels, working processes, culture or efficiencies – Table 4.

For respondents who answered that they were in the process of planning or implementing transformation programmes, they were asked what is included in the scope of the programme. One change from 2016 was that respondents were given the option to select from a set of sub groups that allowed for more accurate identification of drivers.

The most significant change we saw was from respondents who selected culture as part of their transformation programmes, increasing from 61% in 2016 to 84% in the most recent research. Following sector movement towards greater tenant involvement this could be in part attributed to the desire to create a culture that is customer focused.

Similarly, we observed an increase in respondents selecting processes as a key component of their change programmes, increasing by a total of 17%, from 69% to 86%. The results suggest that providers are looking at the “bread and butter” of their internal processes.

However, activity in an area that is still in its infancy in social housing appears to have contracted compared to 2016. Interest in AI was gaining momentum in 2016 with over 50% of respondents including it in their change programmes, but this has fallen to only 20% in our latest research. Pilot projects such as the MiiHome project that have yet to come to fruition or become scalable, show that just because AI works in other industries it may take some time for social housing to fully integrate its possibilities.

Table 4: Type of change being implemented by our survey respondents’ organisations

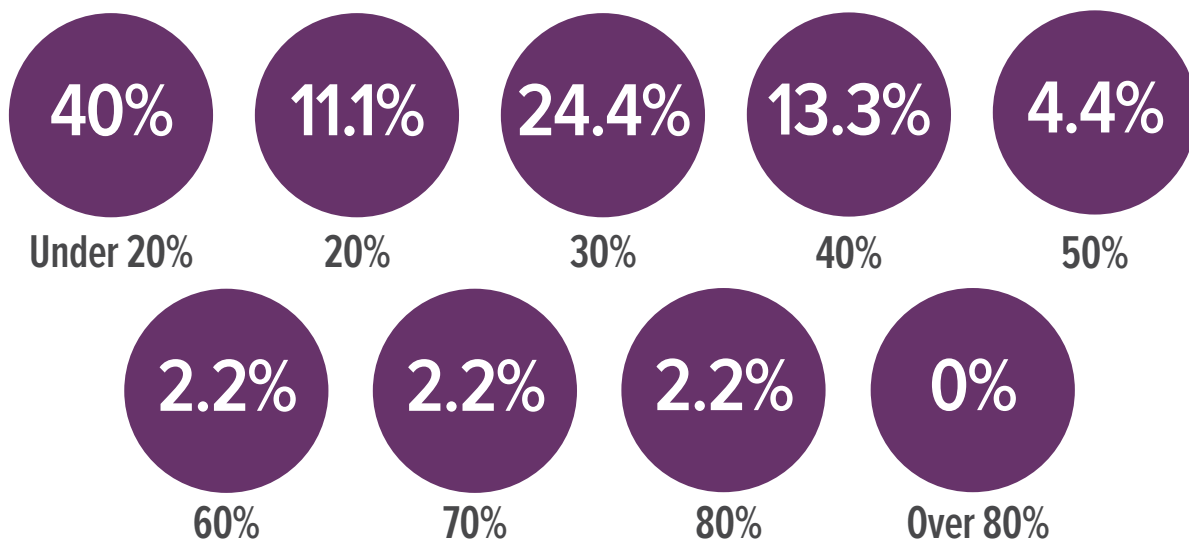
2016	%	2018	%
Digitalisation	66%	Digitalisation and technology – e.g. shifting customer contact channels online	82%
		Digitalisation and technology – e.g. shifting internal and other service delivery online	76%
		Digitalisation and technology – other	20%
		Artificial intelligence	20%
Customers	58%	Customers – Redefining the organisation’s relationship with customers including the level / types of services to be delivered	69%
Process	69%	Processes – Re-designing processes and ways of working	86%
People	53%	People – changes to terms and conditions, job roles, and skill requirements	61%
Organisational Design	55%	Organisational design – e.g. changes to organisational structures, reduction in head count, change in types or groupings of functions	55%
Service Delivery Models	27%	Service delivery models – e.g. outsourcing or sharing services	39%
Culture	61%	Culture – e.g. creating customer-focus, team-working, commerciality	84%
Not asked in 2016		Efficiencies – creating value for money by operating at lower costs	82%

There is evidence that organisational appetite to outsource or share services has increased over the past two years. This is likely to be due to the increasing pressure on housing providers to show value for money in service delivery, recognising that economies can be achieved through shared purpose and investing together. Selecting the right outsourcing partner and indeed any partners in collaboration is critically important as is evidenced by one respondent who remarked that their organisation has insourced services due to the value for money and service provision from the contractor being poor. Collaboration in other sectors (particularly across sectors where organisations make best use of different strengths) is generally becoming more frequent.

Channel shift

Another clear result for our survey is that digitalisation is a high priority for respondents, especially with regard to managing customer data. This included customer online portals and internal processes such as Microsoft Office 365. Again, social housing is somewhat late to the party when compared to most other customer-based sectors in basic digitalisation however it is encouraging that respondents observe this is an issue and are taking steps to address it.

The survey respondents reported on the number of transactions currently completed online. Results show that 75% of respondents completed 30% or less of their transactions online – see Fig 3. This is surprising given that in 2016 digitalisation was stated by over 60% of respondents to be a central element of their transformation programmes.



Question 22: Transactions Currently Online (2018)

Fig 4. Proportion of respondents with specific decile percentage of transaction online

Of the areas of digitalisation, respondents outlined that customer focused technologies have the highest priority. Online resident access channels including portals, webchats and social media, saw an increase of 11%, while automation of services including reporting and ordering of repairs and ASB reporting saw an increase of 12%.

Do social housing organisations have sufficient skills to deliver transformation and change programmes?

Critical to organisations successfully implementing innovation and change is having a workforce that not only fully embraces this change but has relevant skills. From 2016, we have found that respondents who “strongly agree” that their workforce has sufficient skills has increased by almost 10%. Additionally, nearly 65% of respondents now “strongly agree” or “slightly agree” their workforce can deliver transformation programmes.

Table 5: Degree to which respondents agree that their organisations have the necessary skills

	Strongly agree	Slightly agree	Neither agree or disagree	Slightly disagree	Strongly disagree
2016	11%	42%	15%	26%	6%
2018	20%	43%	7%	26%	4%
Change	+9%	+1%	-8%	0%	-2%

This indicates that providers are increasingly hiring people who have the right capabilities and investing in training/ development to improve the skills of current staff. This fits with our own observations of the sector where we have seen an increasing number of ‘Transformation Director’ roles being recruited to.

Our respondents who strongly or slightly disagreed that their workforce had sufficient skills outlined the challenges created by current managers being unable to support transformation programmes; the importance of out of sector skillsets; and the lack of young talent joining their organisations due to competition with the IT and other sectors.

The skills gap is not only a problem within social housing, but an ongoing economy wide issue. A recent study by the Open University states that businesses spent a total of £6.3bn on temporary workers, recruitment fees, inflated salaries and training as a result of the skills gap, especially within IT. Seeking temporary expert assistance can provide the solution. The benefits of seeking external expertise to address the skills gap include:

- Access to an individual or individuals with experience from across the social housing sector and beyond who have an understanding of what has worked and what has not
- Reduced management distraction with management, training and appraisal provided externally
- No recruitment costs
- Cover/replacement is provided should the individual become unavailable

- From a governance perspective, advice provided by a qualified, external expert
- will provide Boards with reassurance
- Outsourced arrangements are normally flexible and can adjust in line with the organisation's requirements and terminated at relatively short notice
- The cost of such outsourcing arrangements will often represent a saving on the cost of recruiting a full-time candidate.

Summary and analysis – what is going wrong?

Overall housing providers still appear to be receptive to considering and incorporating innovation within their organisations. However, the enthusiasm and optimism displayed in response to our original survey in 2016 does not appear to have followed through into implementation to the degree that we anticipated.

Our 2016 research project felt like the beginning of a new era within social housing. Our survey respondents exhibited a high degree of self-awareness about the current state of modernisation within the sector and appeared prepared to enthusiastically embrace innovation, transformational change and new emerging technologies; learning from other sectors and organisations in the process.

We have been surprised by the results of our updated survey. Rather than seeing an acceleration of change initiatives, instead we now see a more cautious sector, still stuck in a planning rather than delivery stage.

We propose several contributing factors to the failure of the sector to meet the promise of just two and a half years ago.

Sector structure

The housing sector differs from other service delivery sectors (utilities, banking, retail etc.) in that few organisations operating in it have the same scale, capacity and ability to invest in large scale change and innovation programmes.

Partnership and collaboration may be critical here and some examples are already emerging of joint commissioning of, for example, CRM design and implementation.

The absence of a burning platform

As recently as two years ago the full impact of the social housing rent cut was still being felt. At the time of our first survey, all housing providers were at the tail end of reviewing their business plans and implementing strategies to accommodate reduced revenue streams. Most commentators have been surprised by the relative ease with which the sector has absorbed the rent cut and perhaps as this major driver for change has now all but disappeared and as the sector now looks forward again to five years of above CPI rent increases, the sector feels more relaxed and less motivated to implement what might be perceived as unnecessary change.

Regulatory and sector conservatism

Social housing is a highly regulated sector with the focus of the Regulator on risk management and value for money being an integral part of each provider's governance and management arrangements.

This has potentially meant that some in the sector have a less strong focus on new ways of working, or innovations which may identify them either as an outlier or could potentially have a longer-term return on investment (with low value achieved in the shorter term).

Absence of competition and market forces

Tenants are effectively stuck with their landlord and service provider and to date we have not seen the imposition of choice that has been seen in other sectors in recent decades, most notably in the case of utilities, schools and healthcare.

Looking forward we expect this will change particularly as new entrants challenge the status quo.

Failed implementations

We have witnessed several transformation programmes that have struggled to deliver the objectives originally set. There have been several different reasons for this:

- Suppliers to the sector have often failed to deliver the digital solution advances promised. Many customer portals have proved unattractive and not encouraged customers to shift to using online services.
- A lack of expertise and sometimes commitment at Executive level has led to insufficient resource being invested and other business distractions receiving priority.
- Many at management level are resistant to change and without strong leadership have returned to the comfort of traditional working practices
- Promoting, encouraging and supporting customers and staff to embrace digital services and new working practices has not received the focus, skills and resource needed, leaving many unaware of the benefits.
- Fear of failure has impacted ambition, particularly when there has been no 'burning platform, to accelerate the need for change. There is little evidence of Boards holding Executives accountable for setting and achieving transformation, whereas the failure to achieve self-imposed targets is embarrassing and potentially creates job insecurity.

In summary, culture change is the golden thread that runs throughout transformation programmes with an emphasis of its importance at executive level. It has often been said that 'Culture change eats technology change for breakfast'. Without strong and determined leadership, transformation programmes are unlikely to succeed.

The possibilities are endless if innovation is embraced

Some social housing organisations are taking a lead

As detailed in Section 5, overall there appears to have been a regression back to the 'average' position in the sector with seemingly fewer organisations willing to invest in true innovation. This doesn't mean however that there aren't good examples or leading lights out there. Here are some examples.

Within social housing, we have seen some innovative ideas come forward as well as an awareness of technologies in other sectors and their potential use in social housing.

Case Studies

Microsoft Dynamics 365

Microsoft's customer relationship management (CRM) software provides a digital platform for tenants to manage queries while it gives RPs full visibility and a 360-degree view of each customer across all tenures and service offerings. It has a web-based portal which can be accessed via multiple devices, it can be fully integrated with social channels and tailored to meet the specific requirements of the client.

Origin Housing, one of the HAs who have implemented the software, have reported that 60% of customer enquiries have been resolved at the first point of contact, with a total of 95% of customer enquiries resolved. Importantly, of the enquiries outstanding, the end to end visibility that the CRM provides means that the root of the problem can be easily identified.

MiiHome project

Smart Home technology is being trialled in Salford to help older more vulnerable people within their homes. The scheme is a collaboration between several universities, an NHS trust and Salix Homes to use AI in detecting early signs of medical issues in older people.

MiiHome involves sensors such as Microsoft Kinect technology, most commonly associated with the Xbox, fitted into people's homes. Not only does this reduce the strain on NHS services, but demonstrates the benefits of collaborating in partnership with organisations outside social housing.

The hope is that if successful, this type of sensor technology will one day be part of the fabric of the future home and scalable across the sector, especially if the home is supporting an older person who lives alone.

Some RPs are exhibiting an encouraging drive to invest the time and money in innovation and as a result are starting to see real tangible results. Reduced inefficiencies and a more tailored service to residents are just some advantages, while there is a growing optimism that the trailblazers within the sector can show the benefits of innovation to their more hesitant peers.

Internet of Things (IoT)

The Internet of Things (IoT) is a concept that allows devices to connect, interact and exchange data without the need for human interference. After gaining a lot of traction in recent years the technology is starting to mature. Increasingly, organisations in a variety of industries are using IoT to operate more efficiently, better understand customers to deliver enhanced customer service, improve decision-making and increase the value of their business.

Companies that offer IoT solutions to social housing include Pinnacle Solutions who have worked with a number of HAs in detection of Co2 and humidity levels and whether tenants are managing their heating appropriately. BT (British Telecom) are now also piloting an outsourced service, which is paid for monthly and where BT own, manage and maintain the sensors.

The idea of having 'Smart Homes' within social housing is one of the main technologies expected to have a huge impact by 2025. From detection of issues to automatic notification to contractors, it is clear that the IoT can reduce costs throughout the whole asset management and maintenance process.

Since the first Future Gazing, Future Shaping report in 2016, research suggests that although several providers are implementing pilot IoT schemes, it is still very much in its infancy. A number of challenges still need to be overcome, but the expectation is that once smaller scale projects demonstrate the capabilities and benefits IoT can provide, scalable rollouts will lead to a more affordable offering that demonstrates tangible return on investment.

We believe very strongly that the social housing sector needs to take a hard look at its apparent unwillingness to embrace the opportunities created by the continuing evolution of new technologies like IoT.

Learning from others is an essential and healthy element of every organisation's and sector's strategy. Looking externally outside social housing there is an indication that change, and innovation is happening at a much greater pace.

Technologies which were in their infancy in 2016, such as IoT and predictive analysis, have matured over the last few years. We have still to establish where true return on investment has been achieved, although evidence suggests it is just a matter of time. Furthermore, technologies are demonstrating a greater level of flexibility and can be applied to a greater range of sectors, demonstrated by IBM's Watson which has provided huge efficiencies in areas as diverse as healthcare and physical asset management.

Case Studies

Energy Sector

A number of companies within the energy sector have successfully implemented IoT allowing households and businesses to better manage their energy output leading to significant efficiencies and cost savings.

IoT also allows for full transparency on each individual building's carbon footprint. Through the mandatory roll out of smart meters, customers have the ability to instantly view efficiency levels and tailor their energy usage to their individual requirements.

On a larger scale, IoT technology can be used with smart energy grids which help balance supply and demand. This is especially important during high demand periods and provides the necessary support as advanced countries transition to renewable, but often intermittent sources of energy.

Asset management with IBM Watson

IBM's Watson program utilises a wealth of data and insight through AI which it has paired with its Maximo asset management solution to enhance asset management.

Using the IoT data from people, sensors and devices, the technology can provide warning signals from assets which can ultimately reduce unplanned downtime and increasing operational efficiency. The technology has previously been used in large scale assets such as power stations and transportation infrastructure, assets that exhibit a high level of risk.

For social housing real time monitoring of properties has the potential to allow providers to have full transparency of high/low performing assets, mitigate maintenance issues and quickly respond to repairs. The time lag it takes for a resident to identify and report an issue would be diminished as providers could immediately fix the issue once sensors detect a problem.

One hurdle would be the scale of implementing sensors in each property, as to date the technology has been generally applied to large scale assets.

Looking forward, social housing providers should continue to monitor other sectors and emerging technologies, especially those with a focus on customer delivery such as consumer shopping and retail banking. We complete our report with examples of the type of initiative which if embraced might prove beneficial to social housing.

Artificial intelligence (AI)

The possibilities regarding AI are pretty much endless and could be seen as the biggest opportunity (and threat) across multiple sectors. Essentially, AI is making computer programs think intelligently and in turn, increasingly complete tasks in a similar manner to that of humans.

Case Studies

Healthcare

In all aspects of healthcare, AI is making huge strides and improving the lives of patients, from research and diagnosis to patient treatment.

- Research: AI is accelerating the detection rates of diseases with significant advances especially in cancer detection. Earlier and more accurate detection of diseases significantly increases the likelihood of treatment being successful.
- Diagnosis: Medical professionals have access to a wealth of information previously not available. One ground-breaking process is again IBM's Watson software that can review and store far more medical information than previously possible. Every medical journal, symptom, case study of treatment and response around the world is stored and the specific resources supplied to each individual patient, exponentially faster than any human.
- Treatment: Increasing use of robots in medical procedures, which can dramatically reduce the chance of procedures going wrong due to human error. AI assisted surgery will help reduce surgical variation and its attendant inefficiencies and poor outcomes, so improving recovery times and reducing associated cost.

Construction and Robotics

More than 8 million of the UK's homes have an uninsulated suspended floor which can account for up to 1/4 of heating bills. Uninsulated suspended floors also significantly impact an occupants' comfort and health due to cold draughts, uneven temperatures and an increased risk of damp and mould. Q-Bot have commercialised a unique solution using a robotic device to apply insulation in situ, without having to disrupt those living in the property. A robot is inserted through a small opening and sprays insulation to the underside of the floor. A typical home can be insulated in 1-2 days using this method. The system has been fully accredited and is the first robotic system to secure a BBA certificate and secure ECO funding. Q-Bot is currently working with the social housing sector to roll out the service across the UK.

The technology also includes the ability to survey and digitise buildings using a 3D mapping system and AI to process the data. This enables floorplans and a detailed record of each building to be cost effectively created.

However, the continued drive for more intelligent AI threatens nearly all jobs in the long term and a study in Nov 2017 conducted by McKinsey Global Institute estimated by 2030, 800 million (one-fifth of the global workforce) could be replaced by automation, with those developed countries who are able to invest in automation being the most affected.

Beyond data, prescriptive analytics

The third and final stage of business analytics, after descriptive and predictive, prescriptive analytics goes beyond just forecasting, but helps draw up specific recommendations.

While descriptive analytics aims to provide insight into what has happened and predictive analytics helps model and forecast what might happen, prescriptive analytics seeks to determine the best solution among a variety of choices.

Case Studies

UniCredit

Italy's largest bank has utilised software designed by London based Fico in its risk management operations. The objective is to replace traditional human-only decision making with a more agile and flexible technology framework.

UniCredit will use Fico software as a decision engine for the origination and management of personal loans, credit cards and small business loans.

The Fico prescriptive analytics software goes further by outlining business wide future risks and opportunities, suggesting decisions and illustrating the implications of each decision option.

For social housing providers who have large personal data sets on both properties and their customers, there is a real opportunity for providers to become 'data driven'. Although prescriptive analytics might be a step too far for most social housing providers, RPs should always back up decision utilising their data sets to draw out insight and identify areas for improvement.

Once you have sufficient data and knowledge of the behaviour patterns of your residents, then you have the potential to automate. For example, many providers have staff scheduling gas safety checks, which is something that could easily be automated. If you have data confirming when the last check took place, along with the interval period and knowing each resident's behaviour patterns and appointment success, you can automate the planning window for the current year's visits to ensure greater compliance.

Predictive needs

From Netflix hinting what TV show you may want to watch next to Amazon advertising products based on previous purchasing history, predictive needs are now common practice in many industries. Companies such as Amazon and Netflix have vast levels of data about their customers and using complex algorithms can best model the product or service which suits the individual's taste.

There is an increasing view that the substantial levels of data held by social housing providers could be used to predict an event before it happens and put in place mitigation strategies to best respond. One example could be RPs predicting future rent arrears. By identifying residents or areas that exhibit higher than average levels of arrears, RPs can take proactive action that supports the resident in paying rent on time.

The practical application of this is yet to be fully realised, however there are growing signs within the sector. Orchard, one of the sectors largest housing management software suppliers, are partnering with Newcastle University to come up with a viable solution in areas such as ASB and repairs which could effectively utilise predictive needs technology. This is one of many examples of how traditional suppliers to the sector are looking to collaborate and make use of such technology.

The art of the possible in a future social housing world where innovation is embraced

The housing sector isn't at the cutting edge of developing new technologies like other sectors – and it doesn't need to be. But it can make greater use and adapt emerging technologies from others. Take a few examples: voice interaction devices (e.g. Alexa), smart homes, smart devices, GPS technology, 3D printers, drones, artificial intelligence (e.g. Google Duplex), virtual and augmented reality. What if a housing provider in 2025 made full use of these technologies to deliver services?

What if a contact centre was fully resourced by AI technology (such as Google Duplex)? A customer would call the contact centre and 'speak' to the AI technology (which can engage in a full 'human' conversation, in any language) about the initial query (e.g. a repairs request). With a link back to the customers home via smart devices, the AI could run initial checks, before diagnosing the problem and coordinating the appropriate response.

What if smart devices, AI, 3D printers and drones were used as part of a responsive repairs service? Smart sensors are already becoming standard in some new homes. By 2025 it will be the norm for these sensors to regularly provide maintenance updates. AI will analyse the data, discern when a repair is needed (ahead of a failure) and will arrange for an operative to visit the property. Drones may deliver the required parts or tools, and the operative will have access to a mobile 3D printer to 'print' replacement parts on site.

What if a housing provider contacted customers through a voice interaction device (e.g. Alexa)? A customer could access any information, ask questions, make payment or submit orders via Alexa. This already exists within some services; there are examples of police forces making updates available to residents via Alexa. Organisations could improve customer engagement through more frequent feedback, providing updates on local activities and remote support, all on demand to customers.

Imagine if there was true collaboration between housing and other sectors for the development of new technologies. Large car manufacturers are already collaborating with digital platforms such as Uber to develop a service model which combines driverless cars, with an ordering platform; car ownership will be a distant memory. What impact might this have on the design of future communities, with no need for parking outside a property and safer streets within which children could play? What if housing providers collaborated with Amazon to develop Alexa technology to support elderly or vulnerable residents at home? Or, what if housing, the NHS and Fitbit collaborated to develop technology which enabled patients to be discharged from hospital more quickly, but whilst still be remotely monitored?

Some of these ideas aren't particularly aspirational. The technology is already available and being used by housing tenants to access services in many other areas of their lives. But in technological terms, 2025 is still a long way off and we can't be sure what will be developed next. Asking 'what if...' as a starting point breaks down the restraints and constraints on imagining what can be achieved through truly embracing progress; and don't forget the risks associated with not doing anything at all. Disruptors like Uber and Netflix have transformed the service offer in their sectors, and left traditional providers scrabbling to adapt. Housing sector disruptors are developing fast. A few years ago, we asked 'What if Tesco started providing social housing?'. In 2018, Lidl announced they were to provide affordable housing, so perhaps this question is more poignant than we realised. Who might be next? The new generation of private registered providers will bring both challenge and different ways of thinking.

The Future

Over the history of the social housing sector, there have been a series of defining periods which have led to periods of change – this includes the initial creation of housing providers by philanthropists in the early 20th century, through to the ‘Cathy Come Home’ film and campaign in the 1960s and the stock transfer programme in the 1990s and 2000s.

It is not over the top to suggest that we are in a similar period now – new entrants, for profit providers, changing customer demands and advances in technology all have the potential to significantly change the face and structure of how the sector operates.

The established sector cannot therefore stand still.

This does not necessarily mean that all need to become as innovative as a Google or a Netflix. And taking into account what the purpose of social housing is, full ‘out there’ innovation and risk taking would be inappropriate.

But the sector does need to embrace innovation and technology more than it is doing now. It does need to build in levels of innovative working into the way it approaches all aspects of service delivery. And it does need to constantly look out to other sectors to learn from and grasp ideas that could be quickly adopted to improve activities in housing.

Our recent survey shows that despite the interest in technology and innovation, the sector hasn’t really moved on since 2016. That is against the context of a wider environment which has moved on at an exponential rate over the same period.

The sector isn’t at risk of being left behind, it is already behind.

We will continue to run this series of reports and research. The original time horizon set out in our first report (in 2016) was 2025. That horizon is rapidly approaching, and when we re-run this survey again in 2021, it will be less than four years away.

The run in to 2025 has the potential to be a hugely exciting and dynamic period in the history of the sector. It also has the potential to be one which defines the sector as dropping further behind others. Now is the time therefore for organisations to truly grasp the opportunities that innovation, technology and data provide.



Altair



For more information about how Altair and 3C can support your transformation programme, please contact:

Michael Appleby, Director

michael.appleby@altairltd.co.uk

07545 314 749

Colin Sales, Managing Director

colin.sales@3cconsultants.co.uk

07810 543 008



www.altairltd.co.uk | 020 7934 0175 | info@altairltd.co.uk
Tempus Wharf, 29a Berronsey Wall West, London SE16 4SA



Report produced in association with 3C
www.3Cconsultants.co.uk | 0333 900 3003 | info@3cconsultants.co.uk
Acorn House, Oak Farm, Hampton Lane, Catherine de Barnes, Solihull B92 0JB

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