

# What will the digital housing association look like?

**‘Change... then more change’. This seems to be the mantra of those regulating the Housing sector – each year a new theme and a slew of new initiatives emerge. But are they helping with the primary aim – to deliver more homes for people to live in?**

**I thought it would be interesting to take a look at the sector in the context of the aim mentioned above, but in the future – and taking into account technologies that are already starting to assist providers and some which may still be over the horizon. I drew this together into a question – what will the Digital Housing Association look like, and how will it assist the very people that need to be helped – the customers?**

You could break the activities of a typical Housing Association down into the following core functions. Let us look at each in turn, and then at the whole picture.

- **Management**

The operational arm of the organisation – onboarding new customers, allocating property, managing tenancies, dealing with issues, managing close of tenancy.

- **Property**

Managing both the responsive [unplanned] and planned maintenance of the asset base – guided by a better or worse set of data to inform the decisions being made.

- **Repairs**

Where this function is in house, then a maintenance company manages the bulk of works carried out on the asset base.

- **Finance**

Manages the money – be it bank accounts, incoming payments and credit, outgoing payments and debts, funding streams, treasury.

- **Care and Support**

Manages defined groups of customers/tenants, assesses, signposts and provides support to those customers/tenants.

- **Doesn't exist yet...**

This is a new area of the business that currently has not been thought of.....

On the basis of my rather simplistic breakdown above, let us look at scenarios that could be happening in the future in each of these core activities, to see how technology may be employed.

## FINANCE:

Financial transactions flow smoothly and quickly through a fully integrated financials system which contains all accounts data – both suppliers and customers. Large parts of this information are processed at run time, when the rents module runs the debit and period end process. However some groups of customers will be subject to non-property based charges and these may come into the sales invoicing function via an automated, and again fully integrated service charge module which processes calculations on charges that have been raised throughout the year. These can now be sent to the customer via an outsourced mail provider who prints, folds, envelopes and franks the outgoing documentation having received an automated electronic file from the Association. Any customers in receipt of these charges will be automatically highlighted within the system when planned works are in the process of being ordered and tendered for, enabling automated consultation to be carried out.

Procurement is increasingly being done via a ‘punch out’ facility which integrates into the financial system via the Association’s portal platform, enabling real time pricing and electronic purchasing to be carried out rather than having to raise paper based purchase orders. The repairs operatives also now work in a similar way with their building materials supplier, obtaining stock items ‘just in time’ as they become depleted on their vehicles.

On the other side of the coin, customers can take advantage of self billing via the portal platform which enables statements of account to be pulled off electronically and payments made via a range of portal based and app-based payments solutions.

The external repair contractors who serve the Association also now interact via the Supplier Portal described above – eliminating the many bureaucratic and paper based steps in the order processing trail and saving considerable sums on each order. Invoicing is done in the same work flow, meaning that manual invoice entry is almost a thing of the past – although any paper based documents that are submitted will be scanned and indexed into the document management system for later viewing.

The Finance Director now has full visibility of the data from the organisation via reporting on the single database, enabling links to be made from financial data back to individual works orders or rent transactions rather than having to embark on lengthy paper trails. The auditors are happier because they too have the ability to easily see the path of a transaction from source to destination, as well as users, dates and times of events.

## MANAGEMENT:

This is the function within the Association with the widest set of responsibilities, and as many staff as possible have been given a wide set of tasks to carry out whilst being essentially home and field-based facilitated by an integrated mobile working platform that interacts with all the Association’s back-office systems. Crucial to this is off-line working. A set of visits can be assigned, scheduled where possible as appointments by either the contact centre staff or increasingly by the customer self-serving. In this way, the Housing Management service now follows the model of other service based industries, whereby customers can make contact via social media, sms, portal, smartphone app, phone system, and self-select a convenient appointment, (powered by the dynamic scheduling engine that was originally implemented by the Association to manage its Repairs Operatives), after entering a brief description of their problem. Skills-based intelligence will route the task to the most appropriately skilled team and confirm a date and time for a visit.

Key to the function of the management of the tenancy lifecycle is the organisation’s customer knowledge. Tenancy sustainment has become far more effective due to algorithms that use previously unconsidered connections between disparate information held in the IT systems to create alerts requesting interventions. These may be arrears



related, or innocuous combinations or data relating to missed appliance service appointments, anti-social behaviour and other issues. But because sustaining tenancies is key to the Association's function, it now operates in a far more efficient and proactive way that the highly reactive way it did before.

Waiting list applications are primarily now received online via the portal, and all viewings and sign ups are done by staff using mobile devices, with document packs such as tenancy agreements, certificates, and all tenancy documentation being produced electronically and emailed to the new tenant automatically after sign up, a workflow task being allocated to the relevant officer to do a 28 day follow up visit at the same time.

Customer satisfaction has increased because in simple terms, the range of management services are now easier to access at any time of day or night, clear appointments are given [and largely kept], and visits are therefore performed quicker and are more effective. The organisation sees dramatic increases in staff efficiency, enabling reallocation of some previously office based roles toward customer facing roles that add value to all parties.

The Head of Housing now runs a service which is based on knowledge not assumptions and hearsay. Quick, simple access to either self-service or, in complex cases, a knowledgeable officer visiting at a convenient date and time are now realities for customers, enabling the vast majority to get on with their lives and serve themselves while the organisation has now reorganised its delivery team to focus face to face resources on the more vulnerable groups within its customer base – those who need the help most.

#### PROPERTY:

Another area where data has become one of the key assets in the Property Services department, responsible for the development and ongoing management of the property stock - who have employed mobile working to gather stock data for some years. However this data, previously one-dimensional, has now been gradually transposed into Building Information Models – 3d electronic renderings of the actual buildings and blocks which increasingly also hold contextual stock condition information that can be viewed in 3d and when focused on by the user, reveal their detailed meta data and associated documents [such as CP12 certificates]. This will evolve into end-user viewers within the mobile working app that, when the device is held up toward the building, will reveal this data in augmented reality via the device's camera.

Another area that has now been revolutionised is the actual surveying itself. Drones are now routinely used and a CAA-qualified surveyor is employed within the team to operate the drone. Highly detailed photography is now conducted to assess high and inaccessible areas of buildings, and data extracts of properties needing a survey are uploaded from the core integrated Asset Management module into the app that then feeds the building data into the drone, creating a 'fly list' so that the surveys can be carried out. The result is either individual photographs of specific problems, or a complete, miniature 3d rendering of the building or a faulty element that then can be 3d printed back at the office.

But a lot of the work now done by the Property Services department is now based on 'predictive maintenance'. Because many of the property's devices such as heating systems, water pumps, damp sensors, lighting and door entry systems are now web-enabled, the Association is able to use its portal platform as an aggregation tool into which it has 'plugged' all the third party data sources that capture the data from these devices. As millions of bits of data flow into this aggregation tool, they feed the analytics tools residing in the portal platform which produces triggers back into the integrated Repairs and Maintenance system when action is needed. In the context of reactive repairs, this means that a certain range of fault codes will automatically trigger the





creation of a works order for the property concerned, and if it is tenanted, will send the tenant a link to log on to the portal to select a suitable appointment slot for the repair. If the property is not tenanted, work can be scheduled immediately with no intervention.

In the context of Asset Management, this data is also now being used to decide which makes of device are the most, and least, reliable, based on volume of failures or repairs – thus informing future decisions. Even when a device doesn't fail, it still records its usage, for example the hours that a boiler has been run for. This again makes planning more logical – because it can eliminate the replacement of a certain device just because it is a certain age, when it may in fact have been hardly used in that time.

The Asset Director now has a rich set of data about the Association's assets, updated in traditional and modern ways through methods that were impossible before, but have transformed the ability of the team to make quicker, smarter and more cost-effective decisions.

#### REPAIRS:

The main reason for contacting the organisation, and the biggest consumer of staff time and resources, used to be the repairs service. A telephone call used to initiate the process, with an order then printed out and passed to the contractor who then carried out the work, and submitted a paper invoice at some point on the future for payment to be made against. Now, because the workforce are managed by a dynamic scheduling engine that allocates tasks to the most appropriate person, the majority of tenants access the responsive repairs service via the Association's branded smartphone app or via the online portal platform. After a brief diagnosis of the issue, they will be presented with a range of possible appointment slots from which they can choose the best. Once chosen, the 'slot' is allocated to an Operative in real time and sent to their mobile device. Last time it let its repair contracts, the Association made it a condition of the contract that all tendering Contractors would use its scheduling and mobile working tools. So now, the same process exists for all repairs irrespective of who carries them out – further reducing costs.

Online invoicing streamlines the relationship with external contractors still further, while the asset data updates automatically via the fully integrated core system.

Performance, productivity and timesheet information all flow seamlessly back from the operatives' mobile devices further informing where efficiencies are still needed, thus also aiding training and development.

Supply chain has moved on a long way since the days of the central stores. Now fully outsourced to specialist partners, material management is based on van stocks that are depleted and updated via operatives' mobile devices as the job is completed. Where the level of stock on a van falls below a certain level, the number of that item that need to be re-ordered will be added to a list that is submitted electronically to the material supplier at a certain point in the day. Thus, 'just in time' materials management is implemented and the analytics tools that are constantly examining the streams of data from this and other services can be used to 'fine tune' particular parts and devices based on their longer term performance, failure rates, warranty claims and so on.

#### CARE AND SUPPORT:

As the Association finds itself serving a changing demographic, it finds that needs are changing – both the type of property now most in demand, and client group living in these properties, and the kinds of service they require. Thus, one challenge that has emerged is 'how can we keep our older customers living as independently in their homes for as long as possible?'. This is also an area where engagement with other agencies is crucial – for example health and social care agencies who used to operate in information 'silos', often resulting in important signs being missed in the life journeys of older or vulnerable people.

Apart from investing more in digital training and awareness to help these clients to harness the power of their online services, the Association has now used its customer knowledge, gained through the many and varied interactions it carries out daily, to 'personalise' its services especially for care and support. When the customer's consent is given, sensors can be employed to watch for certain events

and trends, such as differing levels of heating or energy consumption, with analytics tools learning when kitchen devices such as kettles are expected to be used. Unusual events or trends may trigger an alert to a Support worker to check on the wellbeing of that tenant. But wider integration of devices which are now routinely given to this client group as part of their tenancy, such as fall sensors and blood pressure monitor watches, means that the traditional 'pull cord' method of invoking an emergency intervention has become obsolete. Support visits are now increasingly targeted based on predictive analytics rather than just schedules, and have become more effective as a result.

Optional and possibly chargeable services have now been developed as a result of the efficiencies gained, such as home cleaning. The Association's portal enables mini social networks to be created within blocks of apartments – so that tasks can be shared and residents brought closer together. The Head of Care and Support now works more closely than ever with the local Health Trust and where permissible planning is co-ordinated to ensure that fewer vulnerable tenants are discharged into homes that they will be alone in. A significant part of the Association's activities are now changing toward providing a comfortable and independent life for older and vulnerable residents.

#### DOESN'T EXIST YET...

Things have changed significantly within the Association. Data is now recognised as a core asset and has management policies that reflect this, plus there is now an awareness and ownership of data within all levels of management. The Association's decisions are now largely based on this data and it is shaping where the organisation goes next by giving insights that were merely 'hunches' before.

But now it is possible for the Chief Executive to start to think outside the box.

As traditional funding sources start to dry up, and the need to develop homes becomes more pressing, how will that Chief Executive square the circle?

Technology has provided some of the answers.

The Association operates in a large provincial town. A growing University has created a busy private rented sector. Which organisation has the most experience and resources focused on managing residential, and maybe even commercial, property? With the portal platform, the Association could open up an external management service to other landlords and create a new revenue stream. This could extend out to repairs, using the internal contractor

business. It could even extend to asset management and surveying services using efficient technologies.

The internal contractor business provides the Association with certification services such as gas and electrical checks and certificates, using its mobile working platform to create the documents back at the office. It could now pilot that service to home owners and landlords in the area using the same technology platform, creating a new revenue stream. Where the Association does not provide those services through its own business, it could offer trusted contractors who can do the job.

Caretaking services, again run via self-service, dynamic scheduling and mobile working, are now supplied to other property owning companies in the local area. This may also extend into separate facilities management activity in the future using the new Facilities platform that the Association is implementing.

The point here is that this section of the business did not use to exist, because nobody was thinking 'outside the box'. Potential to expand businesses in all sorts of areas exists, and collaborative technology also exists to facilitate this.

#### FINALLY... THE BIG PICTURE

What we have covered in the various sections of the Association's business here is an overriding theme; next-level networking that brings stakeholders and their data together to make processes faster, more efficient and more effective. One single, central system which acts as a repository for the knowledge in the Association, becomes the hub of this network, with analytics driving the workflows that make people take the right actions. Self-service becomes the default, while the consequent savings in resources mean that those in the greatest need – those who simply cannot manage an on line lifestyle – can receive the face to face support they need.

#### Aareon UK

Building 500 | Abbey Park | Stareton |  
Kenilworth | CV8 2LY  
Tel.: +44 (0) 2476 323723

[www.aareon.co.uk](http://www.aareon.co.uk)

*Aareon are the leading supplier of housing management and digital solutions for social housing providers in the UK, enabling us to set the standard for business processes.*