



Digital Transformation

10 Digital Channels & Utilisation

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Distribution

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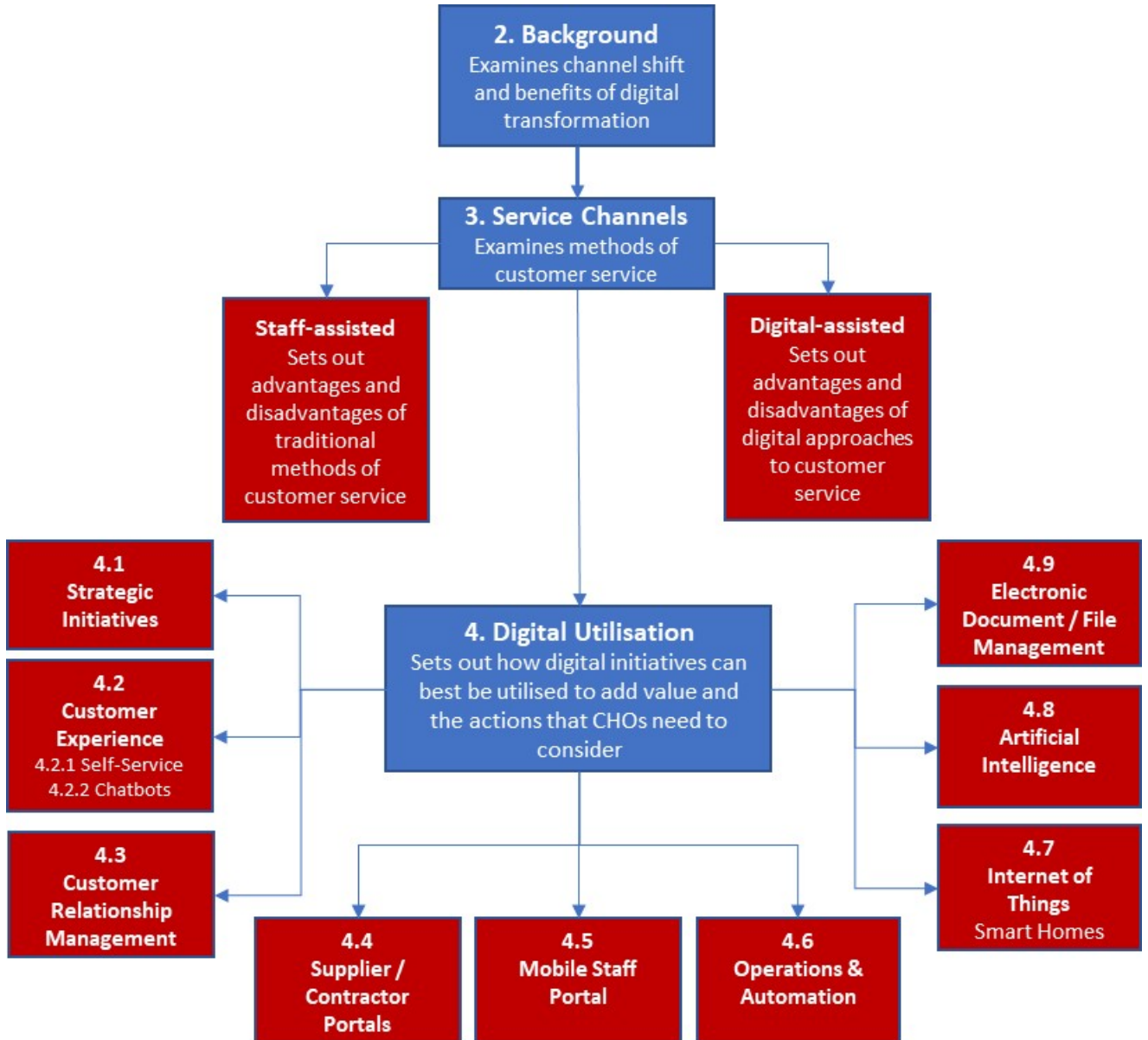
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1. Introduction

This document explores the use of digital and non-digital channels and provides an assessment on the areas of operation where digital transformation could add most value through effective utilisation, taking into account the associated implications that need to be considered.

It will take you through the following sections:



It should be read in conjunction with the following which are included in the CHIA NSW and CHIA Vic Digital Transformation Toolkit pack:

Document Name	Description
01 Developing an IS/IT Strategy.pdf	Provides a stepped-out process for CHOs on how to develop information technology and information systems strategies.
02 IS-IT Strategy Toolkit.xlsx	Aligned to the strategy document, the toolkit provides series of templates to use in defining your strategy.

Document Name	Description
03 03 Assessing IT Improvements.pdf	Investigates and researches the available opportunities for IT improvements needed by CHOs and document the findings with recommendations.
04 Digital Readiness Assessment.pdf	Sets out the approach on how to determine the state of a CHO's digital readiness and the results of a survey completed by 28 CHOs in NSW and Victoria
05 Persona Journey Mapping.pdf	Sets out a proposed persona journey mapping approach for CHOs
06 Persona Journey Mapping Toolkit.xlsx	Sets out a framework using situation stages for documenting persona journey mapping using proposed tenant and operational journeys covering: <ul style="list-style-type: none">• Doing• Thinking• Pain points• Issues• Improvements.
07 Digital Transformation Implementation Guide.pdf	Sets out the steps community housing organisations (CHOs) need to follow in defining and implementing digital transformation initiatives.
08 Digital Transformation Planning Toolkit.xlsx	Provides a toolkit of templates on defining and prioritising digital objectives, defining projects aligned to objectives, assessing risk and defining a digital transformation roadmap.
09 Case Studies.pdf	Sets out a range of case studies across a selection of industries, with each study focussing on the challenge(s) that each organisation has faced, the solutions it implemented and the results that have eventuated

2. Background

Change is all around us and has been so for decades. It is a fact of life.

Think back to various 'tomorrows world' technology related initiatives that have been introduced over the years and how commonplace some of these now are.

The evolution of mobile phones is a good example of this through to the now ubiquitous use of smart phones.

The development and implementation of digital technologies have resulted in the pace of that change being relentless and all-encompassing.



There are now more connected devices than people in the world. It is predicted that by 2025, 41.6 billion devices will be capturing data on how we live, work, move through our cities and operate and

maintain the machines on which we depend.¹ The manner by which individuals can utilise digital technology is the most noticeable aspects of this ongoing digital transformation revolution. Devices are now relatively cheap (depending on what you buy or lease under a contract); they are easy to use and are consumable. The technology is mobile, always on, and works seamless across a multitude of platforms.

Across every industry, no organisation is immune to advances in technology. Customers and employees alike now demand or expect greater mobility as the norm – they crave seamless and transparent access to information, as well as engaging user experiences.

Channel Shift – a process by which organisations seek to encourage customers to access or interact with services via channels other than those to which they normally choose – has rapidly gained traction across many industries and public service providers over the past 10 years.

Prompted by the technological advances, many organisations have upgraded their technology infrastructure with many connecting with their customers through digitally enabled channels. For those who have implemented it well, improved efficiencies in customer services delivery, back-office data management and reporting have resulted. For others, such initiatives are not however without their fair share of problems as explained in **07 Digital Transformation Implementation Guide.pdf**.

The term ‘digital transformation’ is now widely used and it can mean many different things to many different people. As mentioned in **07 Digital Transformation Implementation Guide.pdf**, and in terms of background to this document, digital transformation is about:

1. Better ways of **doing** things
2. **Creating** value
3. **Improving** the customer / supplier experience
4. **Automating** tasks
5. Improving how services are provided in more **efficient** ways to deliver experiences in a **co-ordinated, consistent and cost-effective way**.
6. **Building collaborative capabilities** that can better support CHOs in delivering services
7. **Fostering business resilience** and capabilities for the future and thereby reinforcing CHOs’ growth potential.
8. **Focussing on people and processes as well as technology** - the latter is the catalyst for helping or supporting you to provide these better ways of doing things and providing solutions.

¹ World Economic Forum (2020), The State of the Connected World 2020 Edition

In relation to its application in the community housing sector, as part of the CHIA NSW and CHIA Vic Digital Transformation guide, digital transformation has been defined as follows:

“The integration of digital technology into all areas of CHOs’ operations fundamentally changing how the organisation can operate, delivering increased accessibility to tenants through the introduction of additional service channels and providing an enhanced customer experience.”

For many organisations across many industries, digital technology advances can encourage a much broader reassessment of their business practices, with a recognition that innovation in technology frequently requires innovation in business models to reconsider their value and guide their ongoing operations.² Furthermore, it has driven organisations to question major assumptions about their customers; how they are being served, the experiences offered to them and the most efficient ways to deliver those experiences in a coordinated, consistent and cost-effective way. There has been a shift of perspective away from the specific technologies inherent in a digital world towards the principles on which digital-driven organisations operate.³

3. Channels

Digital transformation should not be seen as an avenue to dispense with the traditional methods of service delivery, neither should it be viewed as being just about technology.

The impact of digital transformation will vary in relation to generational patterns of adapting and ways of life. This is important in view of the impact on how your CHO currently operates; the initiatives you plan to introduce; how you could operate in the future and how such changes will be implemented.

It is important to reinforce that digital transformation offers enormous scope for CHOs to offer **additional** service channels for use by tenants, their family members, suppliers and support agencies.

It should not be viewed as fully replacing the customary or traditional methods as to how your services are accessed now and how they will be in the future, as these will always need to remain. There are many reasons for this.

1. Whilst access to digital devices is increasing each year, the Australian Data Inclusion Index (ADII) clearly indicates a substantial number of people are still highly excluded even though this figure is continuing to fall.⁴ The ADII threshold for digital inclusion is the point above which a person’s level of access, ability, and capacity to pay for digital technologies enables them to use digital services and participate in contemporary digital economic, civic and social life. Figures from the 2021 index are:

² Baden-Fuller, C. and Haefliger, S. (2013). Business Models and Technological Innovation. *Long Range Planning*, 46(6):419-426

³ Brown, Alan W. (2019), *Delivering Digital Transformation, A Manager’s Guide to the Digital Revolution*

⁴ <https://www.digitalinclusionindex.org.au/>

- a. Digital inclusion at the national level is increasing from an average index score of 67.5 in 2020 to 71.1 in 2021
- b. The divide between metropolitan and regional areas has narrowed but remains marked, with the regional index score of 67.4 in 2021 against a score of 72.9 for metropolitan Australia.
- c. 11% of Australians are highly excluded with an index score of 45 or below, although that number is declining
- d. Private renters have the highest Index score of all housing tenure types, increasing from 72.6 in 2020 to 74.6 in 2021.
- e. Social housing renters record an Index score of 61.5 (a small increase of 0.8 points since 2020), 9.6 points lower than the national average. Going some way to explain this gap, more than a quarter (25.12%) of social renters are mobile-only users, compared to just 11.37% of private renters
- f. Middle-aged and older Australians

Age Range	Digital Inclusion Score	Change Since 2020
45 – 54	72.3	+ 5.1
55 – 64	66.8	+ 4.9
65 – 74	57.3	+ 3.9
75+	47.4	+ 6.1

2. Furthermore, not everyone will have access to smartphones and there will be some who will rely on using basic, older style mobile phones, and with this, will still rely on SMS messaging.
 - a. Thirty years after the first SMS message was sent, figures compiled in December 2022 show that, despite the range of available communications platforms, including services such as WhatsApp and Skype as well as social media, 20% people still use SMS as their default messaging medium.⁵
 - b. This then poses questions as to how evolving technology can maximise use of SMS and the extent to which two-way communication can be fully achieved.
3. It needs to be recognised that not every issue can be dealt with on-line. If the problem or issue is complex, sensitive and / or urgent, then it is only natural that a person will want to / need to speak to a member of staff.
 - a. Conversely, it can be argued that if more people use online services for what can be deemed as 'standard' or routine service requests and 'avoidable' enquiries, that will enable staff to spend more time with those who need the most assistance or those with more pressing circumstances.
 - b. Refer to section 2.1.5 in **01 Digital Transformation Implementation Guide.pdf** for examples on developing business case models for self-service and automation. Based on your staffing overheads based on the time spent, you can derive an estimated cost for each activity and then calculate an overall cost, monthly and annually.

⁵ <https://www.thenationalnews.com/business/technology/2022/12/03/text-messages-still-used-by-1-in-3-people-30-years-after-first-sms-was-sent/>

4. Some people feel more comfortable speaking to a member of staff, in order to have confidence that their enquiry or request will be dealt with. Persona journey mapping can be used to validate this and the types of personas who feel this way. Some will likely want to continue doing this because they always have and this is what they are accustomed to.
5. People will want to talk to a human.
 - a. Note a variety of organisations in other industries offer this option on their web sites with some making it easier to do so.
 - b. Whilst chatbots add value to service provision, they can potentially be frustrating or irritating to some in how they are used depending on how they are designed / structured.
 - i. Statistics show that use of chatbots can reduce response wait times, enable more people to get answers outside normal office hours, access information in different languages and that an increased number of cases can be successfully resolved through automation.
 - ii. Refer to **09 Case Studies.pdf** for examples of where chatbots have been used successfully in various industries including social housing.
6. Customer service will always cover many types of channels
7. Staff need to be empowered and be capable of actively assisting any tenants who cannot access online services
 - a. To do this, staff need to make use of well-structured IT to support the delivery of flexible and integrated services beyond those which are transactional in nature and when required by tenants
8. The Australia Digital Standards Authority specifically states that the non-digital experience should not be ignored.⁶
 - a. In particular, it states that people often start using a service and have to come back to it later, or switch to a non-digital channel to complete the transaction. In view of this, in designing a digital online channel, it is therefore important to ensure that users' transitions between non-digital and digital channels (when they need to happen) are as smooth as possible.
 - b. Contrast this approach with a customer service survey conducted by Gartner in 2019.⁷
 - i. This identified that live channels such as phone, live chat and email cost an average of USD 8.01 per contact, while self-service channels such as company-run websites and mobile apps cost about USD 0.10 per contact.
 - ii. Unfortunately, from more than 8,000 customer journeys, Gartner found 70% of customers are using self-service channels during their resolution journey. The problem was that only 9% were wholly contained in self-service.
 - iii. The 9% of customers who resolved issues on their own accomplished what they needed to without having to initiate a time-consuming live interaction. This was a win-win for the customer and for the company. On the flip side, customers who

⁶ <https://www.dta.gov.au/help-and-advice/digital-service-standard/digital-service-standard-criteria/12-dont-forget-non-digital-experience>

⁷ De Lisi, R and Poole, D (2019), Does Your Digital Customer Service Strategy Deliver? Gartner Inc

needed to switch to even one live channel incurred a cost that is 80 to 100 times more.

- iv. Whilst this is necessary in some instances, a majority of service leaders indicated in Gartner’s findings that nearly 20% to 40% of today’s live volume could be resolved in self-service channels.
- v. Gartner also found that many service organisations have continued to add more and more channels even though access to these channels does not produce the customer experience benefits expected. Instead, adding channels leads to more complexity and requires you to divide your resources in more ways, which makes it hard to deliver a low-effort, high-quality service experience. The addition of digital channels often results in varying levels of maturity and an inconsistent experience. Worse still, live call volume and associated costs for issue resolution are not decreasing. The key outcome from this is how self-service digital channels should be utilised and this is discussed later in this document.

3.1 Types of Service Channels

In community housing, and until very recently, we have been accustomed to the traditional method of service delivery i.e., the human interaction.

That is the way it has usually been done and that is the way to which most tenants are accustomed to using or expecting.

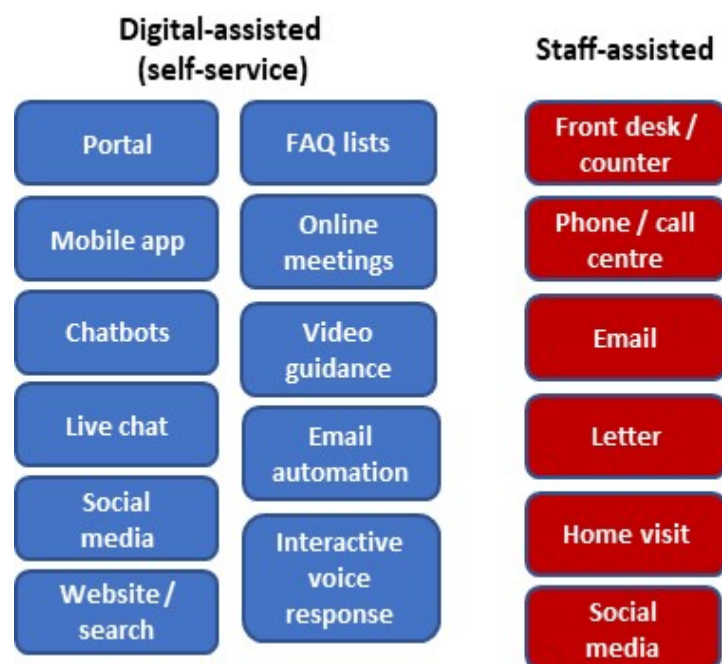
When we introduce digital assistance, it opens up a variety of **additional service channels for those who wish to use them.**

Digital is not replacing the staff-assisted channel. It is merely providing a variety of alternative mechanisms for those who wish to

self-serve – to log a service request, get something done, find something out, ask for something or know their current situation on something such as their rent balance or status of a work request.

The growing plethora of channels has given rise to the term omnichannel. This is evolving further to the concept of optichannel.⁸

An optichannel mindset takes stock of individual channel performance and then makes optimisations based on customer expectations, personal preferences, and the anticipated return on investment.



⁸ <https://www.clickz.com/from-omnichannel-to-optichannel-marketings-return-to-rationality/260551/>

In essence, this is about being available where customers spend most of the time.

In housing terms, optichannel means having the right channel for the right tenant or person at the right time and determining those which are most appropriate for those who need it or are accustomed to using it – in other words, what works best for them. Hence why digital offers scope for **additional channels** to be provided **for those who wish to use them**.

One aspect to bear in mind, however, is the impact on operations in relation to the growing number of channels and the potential challenges and difficulties in joining them up, so that all communications are visible and actionable, regardless of the source.

An optichannel approach therefore requires consideration as to how to integrate with back-office call centre, customer relationship and housing management systems.

3.1.1 Service Type Assessment Summary

There are positive and negative aspects which can be associated with each type of service channel and these are discussed in the table below.

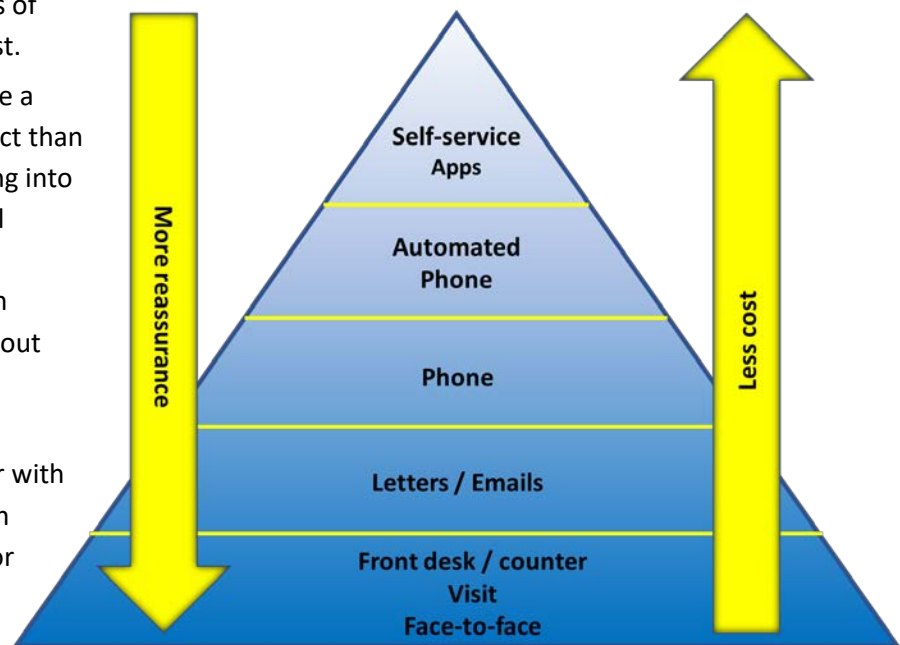
Think about this also in terms of reassurance compared to cost.

Some types of contact require a greater level of human contact than others, and for housing, taking into account the types of stressful situations that people find themselves in, a key aspect in housing service delivery is about providing reassurance with compassion and care.

Counterbalance this however with making it easier for tenants in submitting service requests or making enquiries for what can be deemed as routine

type of transactions which would otherwise be time-consuming for staff in terms of the number of calls or letters they would otherwise receive, e.g.:

- Lodging a repair request
- Viewing your transaction history
- Downloading a rent statement;
- Updating your contact details etc.



Digital Assistance			
Type	Summary	Positives	Negatives
1. Portal	<p>A self-service portal is an additional channel by which a tenant can either make an enquiry online or submit a service request to the CHO.</p> <p>Portals should be device agnostic such that the enquiry or request can be made on any type of device such as a smartphone, tablet, laptop or through facilities provided in community access points such as libraries etc.</p> <p>The portal should be designed to utilise a digital workflow engine integrated to the CHO's back-office system to notify staff when requests are submitted and for the status of the request to be displayed in the portal.</p>	<p>a. A good, well-designed self-service portal offers the potential to reduce the demands on CHO front-line staff.</p> <p>b. Online portals allow customers to self-serve from anywhere, on any device, at any time with the result that accessing services is:</p> <ul style="list-style-type: none"> i. More convenient for everyone ii. Particularly beneficial to tenants with limited access to transportation iii. Especially useful for those who cannot call or visit during normal working hours. 	<p>a. Some tenants / applicants may not have tools / facilities to access the Internet.</p> <p>b. Some tenants / applicants may feel uncomfortable using online facilities. Refer to other documentation in the Digital Transformation pack of documents as to how other organisations have provided education, training and assistance to residents to enable them to get online.</p>
2. Mobile app	<p>An app specifically designed such that self-service can be supported on a mobile device using similar functionality to the portal provided through the CHOs web site.</p>	<p>a. Versatile mechanism to make enquiries and service requests on a mobile device and view current status of the service request as well as other information such as account balances, income, household composition etc.</p> <p>b. Mobile communication function for CHO / person interaction.</p>	<p>a. Some tenants / applicants may not have access to smartphones.</p>

Digital Assistance			
Type	Summary	Positives	Negatives
		<p>c. Offers huge potential to reach out to the vast majority of customers who have access to smartphones. Statistics show smartphone usage is growing each year. From 18.6 million users in 2017, the number of Australian smartphone users in 2021 is expected to increase by 2 million to reach approximately 20.6 million smartphone users.⁹</p>	
3. Chatbots	<p>Chatbots are becoming increasingly common across many industries.</p> <p>The document <i>09 Case Studies.pdf</i> provides examples as to how some housing organisations have deployed chatbots.</p> <p>As an example, Believe Housing, based in north-east England and managing 18,500 homes, answered 11,186 non-urgent and repeat questions through its chatbot between October 2020–2021, beating its initial predicted usage target. This translated to £43,625 (\$76,730) in cost savings based on an average cost</p>	<p>a. Available to tenants outside of office hours, 24*7*365.</p> <p>b. Can be made available in different languages.</p> <p>c. Links can be automatically shared to self-help articles or videos.</p> <p>d. Can be programmed to deal with an array of questions or issues and provide answers using artificial intelligence (AI), allowing CHO customer support teams to focus on conversations that need them the most.</p> <p>e. Can assist in more efficiently allocating human resources to higher-priority tasks.</p> <p>f. Reduce call-wait times.</p>	<p>a. Subject to the nature of the question and how the bot has been programmed, possibility of offering only limited responses.</p> <p>b. AI bots could be expensive.</p> <p>c. Prone to lacking personalisation and therefore limits the quality of the customer experience.</p> <p>d. Possibility they could frustrate some tenants (although case studies do show their benefits in how they can be used to provide responses to tenant questions).</p>

⁹ <https://www.redsearch.com.au/resources/australian-mobile-statistics/#:~:text=From%2018.6%20million%20users%20in,approximately%2020.6%20million%20smartphone%20users.>

Digital Assistance			
Type	Summary	Positives	Negatives
	per contact of £6.85 as per UK-wide research by Gartner. ¹⁰	<ul style="list-style-type: none"> g. Increase communication channels and choice for tenants. h. Offers potential to lead to faster response times. i. Get an immediate impact with tangible results. j. Enable tenants to do things, quickly, simply and easily. 	
4. Live chat	According to leading global market researcher Forrester, ¹¹ live chat is 17-30% cheaper than a phone call on the basis that multiple customers can be handled simultaneously. Live chat offers the fastest response time	<ul style="list-style-type: none"> a. Staff can handle multiple chats at the same time. b. A chat window can be easily embedded on the CHO web site. c. Customers can chat with a staff member and carry on with day-to-day tasks at the same time e.g., whilst waiting for the staff member to reply with a response. 	<ul style="list-style-type: none"> a. Makes the touch point much less personal. b. Customer may feel process is somewhat scripted or robotic in nature. c. Difficult for the staff member to decipher the person's emotions (hence why journey mapping is so important). d. Immediate solution or response may be expected when this may not be possible.
5. Social media assistance	<p>Social media is no longer a platform which is limited to social interactions between friends.</p> <p>Many organisations now have a strong social media strategy, enabling customers to interact with them,</p>	<ul style="list-style-type: none"> a. Tenants / applicants can contact their CHO with their most-used apps. b. Many people have widespread familiarity with social media and this channel can provide instantaneous access to their CHO. 	<ul style="list-style-type: none"> a. Needs to be monitored by designated staff. b. Specific software tools may be needed to monitor and respond to messages on all social media platforms.

¹⁰ <https://futr.ai/housing> - Guide to Chatbots in Social Housing

¹¹ https://www.forrester.com/report/how-to-diagnose-channel-performance-issues-in-chat/RES178022?ref_search=0_1674523879201

Digital Assistance			
Type	Summary	Positives	Negatives
	<p>providing e.g., feedback on service or to voice their discontent.</p> <p>Apps commonly used are Facebook, Messenger, WhatsApp, Instagram, Snapchat etc.</p>	<p>c. CHOs can publicise events, consultative meetings, promote their services etc.</p> <p>d. Community pages can be created to form self-help groups.</p> <p>e. Tenant satisfaction stories can be easily shared and promoted.</p>	<p>c. Could be difficult or challenging to monitor every single social media interaction.</p> <p>d. As social media is not a dedicated or focused CHO enquiry / support platform, many more comments can be received beyond what the service teams can handle.</p> <p>e. Negative posts can have an adverse impact on the CHO brand.</p> <p>f. Tenants could share detrimental posts at any time of the day, when staff are unavailable to respond, and which could escalate and go viral.</p>
6. Website / search	<p>The CHO website can be used to provide a wide range of information about its services, policies and procedures.</p> <p>It can provide help and guidance to tenants on every aspect of service.</p>	<p>a. Enables CHOs to provide guidance on key aspects of services and what tenants / applicants need to do in specific situations.</p> <p>b. Subject to the content provided, may reduce number of enquiries being made by phone, letter, email or office visit.</p>	<p>a. Subject to design of the website, this may deter tenants / applicants from using it.</p> <p>b. Used solely on its own (i.e., without use of a portal or a mobile app), it can only be used to provide advice and guidance on services and procedures (what to do, who to contact etc).</p>
7. FAQ lists	<p>An additional feature to a web site can be the provision of a list of frequently asked questions.</p>	<p>a. Used to address commonly asked questions.</p> <p>b. Could result in reduction of enquiries being made by other channels.</p>	<p>a. Needs to be well-structured and sufficiently concise.</p> <p>b. May not answer every possible enquiry.</p>

Digital Assistance			
Type	Summary	Positives	Negatives
		<ul style="list-style-type: none"> c. Potentially allows staff to focus on more important issues, cases or requests. 	<ul style="list-style-type: none"> c. Subject to content, may be difficult for tenants / applicants to find relevant information. d. Likely to be superseded in the future by increasing reliance on chatbots.
8. Online meetings	The Covid-19 pandemic proved the importance of using online meeting technology.	<ul style="list-style-type: none"> a. Enables business continuity and accessibility of services. b. Can be more accessible to people who work, lack transport or have children at home. c. Potential to quickly engage with people when needed. d. Particularly useful for residents in remote locations (assuming good Internet connectivity). 	<ul style="list-style-type: none"> a. Not all people may have access to Internet facilities. b. Low Internet speed could result in a poor customer experience. c. Length of an online meeting could be arduous.
9. Video guidance	<p>Video can be a very useful form of customer service.</p> <p>YouTube videos can be used to provide guidance on various types of services such as logging a repair, reporting a change in circumstances, how the account statement works etc</p>	<ul style="list-style-type: none"> a. Can be provided through social media platforms (see above) to reach as wide an audience as possible. b. Can be available anytime, anywhere. 	<ul style="list-style-type: none"> a. Not all people may have access to Internet facilities. b. Low Internet speed could result in a poor customer experience. c. Resources needed to prepare and compile videos. If outsourced, this could result in significant cost.
10. Email automation	As indicated in the next section below, email requires manual input to receive, investigate and respond to	<ul style="list-style-type: none"> a. Confirms an immediate response to the tenant / applicant. 	<ul style="list-style-type: none"> a. Will still require a further response from the CHO when either answering the enquiry or providing an outcome.

Digital Assistance			
Type	Summary	Positives	Negatives
	<p>the enquiry or service request being made.</p> <p>Email automation can be set up such that people can know when their responses has been received and also provide an automated case number</p>	<p>b. Provides assurance that the enquiry / service request has been received by the CHO.</p>	
11. Interactive voice response (IVR)	<p>IVR allows customers to interact using their voice or mobile keypad, as commonly used by banks.</p> <p>Based on what the user inputs, IVR can understand the problem and offer correct information.</p> <p>IVR can process basic requests with relative ease and offers potential to better support or even improve customer journeys.</p>	<p>a. Provides a 24*7*365 service to assist people with enquiries (subject to how it has been defined and implemented).</p> <p>b. Potentially can improve enquiry routing by relaying to relevant staff.</p> <p>c. Potential to deal with routine enquiries and thereby enable staff to focus on more complex cases.</p>	<p>a. A poor implementation could easily frustrate tenants and spoil the whole process.</p> <p>b. Long and complicated menus with various options can potentially confuse people using the service.</p> <p>c. Cannot be used to solve complex issues.</p>

Staff Assistance			
Type	Summary	Positives	Negatives
1. Front desk counter	<p>Many, if not all CHOs, provide front desk counter facilities to respond to tenant or applicant enquiries.</p> <p>It is potentially the first touchpoint on the tenant / applicant persona's journey with the CHO. First impressions count</p>	<p>a. Personal interaction can provide assurance that the enquiry will be dealt with.</p> <p>b. Subject to the nature of the enquiry, an answer can be provided face to face, thereby supporting or enabling</p>	<p>a. Counter staff may be expected to know the answer to everything as they are the face of the organisation.</p> <p>b. Staff may not be able to provide an immediate answer to the tenant's enquiry.</p>

Staff Assistance			
Type	Summary	Positives	Negatives
	and have a decided impact whether it will be a good or bad experience.	<p>standard or improved customer satisfaction.</p> <p>c. One on one service interactions can help to build rapport with tenants and win trust.</p>	<p>c. The staff member who is dealing with the matter may be out of the office when the tenant reports the issue or enquiry at the counter.</p> <p>d. Can be stressful if the tenant has negative behaviours (angry, irritated, anxious etc).</p> <p>e. A single customer case can result in significant time being incurred to deal with it at the counter and may cause annoyance or frustration to those waiting.</p>
2. Phone / call centre	<p>Phone has been the most common use of customer contact for decades and many people will likely continue to prefer it.</p> <p>Some people will always feel more comfortable speaking to a person.</p>	<p>a. Provides a more personalised service.</p> <p>b. Tenants can interact with their Tenancy Manager or Customer Relationship Officer to report services requests and make enquiries, with probably the vast majority being resolved at the time of making the call.</p> <p>c. Automated call-back functions can be used.</p>	<p>a. Long hold times can be frustrating for tenants.</p> <p>b. If a free phone general contact number is not in use, such long hold times can be expensive for tenants.</p> <p>c. Staff cannot handle multiple calls at the same time.</p> <p>d. Staff may be expected to know the answer to every response.</p> <p>e. Unless notes are taken, there is no record taken and potentially could result in future disputes as to who said what by when.</p>
3. Email	Staff have more time to respond following receipt of the email, then	<p>a. Records details of customer conversations over a period.</p>	<p>a. Delays in responding can lead to increase in customer frustrations.</p>

Staff Assistance			
Type	Summary	Positives	Negatives
	<p>investigate the enquiry or process the service request.</p> <p>If the enquiry or case is complex, it is possible an array of emails may then ensue, which may prove difficult to track.</p> <p>Customer email management software could be used to convert emails to service tickets or customer relationship management software can be used, similar to what some of the mainstream suppliers provide in their housing management systems</p>	<ul style="list-style-type: none"> b. Official channel of communication. c. Record kept of every conversation. d. Notifications can be automated. e. Attachments can be easily sent. f. Templates can be used for replies. 	<ul style="list-style-type: none"> b. Difficult or challenging to keep track of conversations. c. Detail is free text and can be difficult to deduce outcome on occasions subject to how user phrased the response(s). d. Lack of real time human interaction – ‘the human touch.’
4. Letter	<p>Typically used as a standard means of communication by tenants in lodging service requests, making enquiries and in responding to requests for information (such as income and changes in circumstances)</p> <p>Commonly used by CHOs in responding to enquiries or providing standard types of correspondence such as rent statements etc. Costs for generation of correspondence can be significant.</p>	<ul style="list-style-type: none"> a. Provides a written log of the issue or enquiry in order that it may be investigated. b. For the CHO, (and subject to content and how this is described) letters are used to set out a response or provide an update or instructions on a particular topic or service function. 	<ul style="list-style-type: none"> a. Cost of overheads in CHO preparing letters, printing and postage. b. Time lag in responding combined with postage means that an immediate response to an enquiry is not possible

Staff Assistance			
Type	Summary	Positives	Negatives
5. Home visit	<p>A key function in tenancy and property management services.</p> <p>A home visit is arranged to inspect or to discuss / resolve specific questions or issues relating to the tenancy.</p> <p>Most CHOs, if not all, visit tenants at least once per year to check the condition of the property.</p>	<p>a. Can lead to better problem resolution by staff viewing or discussing the enquiry / issue / complaint on-site.</p> <p>b. Maintains or develops rapport with residents.</p> <p>c. More convenient option for tenants.</p> <p>d. Could serve as the last resort if all other avenues have been exhausted.</p>	<p>a. Annual visits need to be scheduled.</p> <p>b. Appointments sometimes not kept by the tenant resulting in additional visits being needed.</p> <p>c. Lack of mobile technology leads to need to manually capture notes of the visit and enter to the main system upon return to the office (note many CHOs are intending to implement mobile technology in the next few years)</p>
6. Social media	<p>Although included above, social media interaction will still require staff assistance in monitoring and progressing enquiries / issues / complaints logged over social media.</p>	<p>a. As above</p>	<p>a. As above</p>

4. Digital Utilisation

To ensure you will utilise digital tools effectively to add value to what you do, it is important you have a clear vision and determine where digital transformation can be best applied in your organisation.

Refer to **01 Digital Transformation Implementation Guide.pdf** to identify how to identify and prioritise your digital initiatives and then set these out in the form of a digital strategy, which should be used as the framework to drive the implementation of your target digital operating model.

The introduction of digital channels can add an array of additional options for:

1. Tenants, applicants and stakeholders who wish to use them.
2. Suppliers
3. Staff

Approaches to the effective utilisation of digital technology are provided below:

4.1 Strategic Initiatives

Acknowledging that digital exclusion exists within social housing does not mean that you should not do anything when it comes to introducing digital initiatives to improve the customer experience in how people contact you.


Neither should the assumption that there will always be some who cannot or who will not use digital channels to get things done or seek answers online.

Do your own digital access strategy and then you will know how reliant people are on non-digital channels.

Furthermore, turn the current situation of digital inclusion on its head and think how a digital survey can inform objectives for your digital strategy and assess what you need to do to encourage tenants to channel shift.

Questions to think about are:

1. How can you encourage tenants to channel shift?
2. What do you need to do to best enable tenants to access or interact with your services via channels other than those to which they would normally choose?
3. What help and guidance can you provide to enable them to know how to best use new digital service offerings?
4. How do you create an online experience that is engaging, responds to the needs of individuals and serves as an effective way in which tenants can access and interact with key services?
5. What can you learn from other industry sectors?



Channel shift is about taking an active role in engaging with your tenants, understanding their views and perspectives, promoting the benefits of the new digital channel and enticing them to use it, encouraging them to interact with you in ways other than those to which they are accustomed.

6. How will you know whether people will use new digital channels?
 - a. Consider the experience of the new Sony Walkman marketing exercise set out in **05 Persona Journey Mapping.pdf**.
7. Another way of thinking about this, is how do you drive, entice or encourage people to go online?
 - a. Do not assume that tenants will use your new digital online service just because it is there.
8. How best can you nudge tenants to using new digital channels?
 - a. Think of and explain the benefits to them.
 - b. Set out the advantages for those who have the means to access online services.

In essence, channel shift is about moving your CHO from traditional models of delivery (i.e. face-to-face, phone calls, letters etc.) to a model where a large part of contact will be conducted online. It is also about taking an active role in engaging with your tenants, understanding their views and perspectives, promoting the benefits of the new digital channel and enticing them to use it. This has the potential to fundamentally change the relationship between you and your tenants as well as altering the way that staff work. As a result, the new digital vision is as much a cultural change as it is a change of delivery. Remember, digital is realistically a change programme not a technology one.

In addressing these questions, consider the following:

Initiative	Aspects to Consider
1. Channel shift planning	<ol style="list-style-type: none"> a. Develop an end-to-end business transformation plan to optimise engagement with all who engage with your CHO, with the objective to evolve to lower cost channels through self-service initiatives and service notifications. b. Continually develop channel shift opportunities to maximise the proportion of digital transactions. c. Other industries have aimed at driving (maybe forcing) people down the digital route by deliberately restricting access to face to face or human interaction types of services. This is not the nature of community housing due to the stressful situations that need to be dealt with. Reducing choice or access to current contact channels is not an option. There is however, a balance as to what digital can deliver in terms of operational efficiencies. Consider therefore how your new digital service is pitched and how it is designed, taking into account the views as part of consultation and from persona mapping as described below.
2. Persona mapping	<ol style="list-style-type: none"> a. Refer to 05 Persona Journey Mapping.pdf for details on how to undertake customer journey mapping and the steps to follow. b. Undertake persona mapping to understand the different needs tenants have, how they currently respond to you or approach you when they have a problem which they need resolving. c. Identify how they are likely to react to certain initiatives thereby providing the opportunity to develop a tailored and informed approach relevant to specific needs and circumstances.

Initiative	Aspects to Consider
	<ul style="list-style-type: none"> d. Determine the proportion of tenants who are prepared to shift away from their traditional methods of contacting you when they have problems or enquiries that need to be resolved. e. Undertake research to determine how different persona groups would respond to channel shift as well as the initiatives and actions that are likely to be most successful. f. Identify what drives certain persona groups in how they contact you and where digital could make a difference. g. When that difference has been determined, determine how you would promote the new service channels and how you would encourage tenants to use them. h. Recognise that different groups may require different approaches and incentives. i. Use persona mapping workshops to identify potential fear factors amongst tenants who may be apprehensive or anxious about using any new digital service. Some may be reluctant or scared to even talk about their anxiety. Stress that digital is an additional channel that can offer many benefits, such as knowing what is happening to your service request or enquiry. See also below for further suggestions on how you can address any fears or anxieties that tenants may have. j. Identify how a channel shift plan can result in an improved experience based on listening to current pain points and identifying how digital initiatives can help to address or resolve these.
<p>3. Digital access</p>	<ul style="list-style-type: none"> a. A key aspect in the channel shift towards digital is not only the proportion of your tenants who have access to technology, it is also their personal preferences in what they want to use, how they use it and their skills in using it. b. Create an access map of all locations providing free Internet in the areas or regions covered by your CHO. c. Liaise with other public service organisations, such as local governments to identify how digital inclusion can be increased and encouraged. d. Ensure that your new online self-service initiative will be: <ul style="list-style-type: none"> o Easily accessible o Simple to use o Streamlined and logical to follow o Convenient and device agnostic o Inclusive o Stable e. Identify and implement new initiatives to provide access or for tenants to have the means to access the new service through partnerships with third-party companies. Cost of access should not be a deterrent. See further points below relating to partnerships.

Initiative	Aspects to Consider
	<ul style="list-style-type: none"> f. Ensure that no persona group is excluded from access to any services. g. Provide a range of language and easy-to-read options as part of your self-service service, which should be available on any type of device. h. Promote the new digital channel to nudge tenants into using it or ‘trying it and see.’ i. On each traditional or accustomed method of interaction, ask your staff to suggest the new digital channel where the tenant can receive the same service but online. j. Advertise the new service in newsletters, meeting halls and at tenant advisory group sessions. k. If you have a call centre and when the caller is put on hold, provide recorded messages advertising the new digital channel. l. Always think about the content you have on your web site to enhance your image and reliability.
<p>4. Digital champions</p>	<ul style="list-style-type: none"> a. Identify digital champions in your community who are willing to be volunteers to assist people who cannot access the internet? b. Consult with your tenants to determine who would be interested in this. c. Consider offering incentives to encourage volunteers to become digital champions. d. Assess the facilities you can offer them to enable them to do this.
<p>5. Partnerships</p>	<ul style="list-style-type: none"> a. Explore partnerships with other providers to provide facilities and / or IT equipment to enable or encourage residents to get online and use digital services? b. Work with partners to put in place free Wi-Fi at Community venues for access during opening hours to help tenants access your online services. c. Introduce an IT equipment loan scheme pilot project in conjunction with industry partners.
<p>6. Education</p>	<ul style="list-style-type: none"> a. Work with other institutions to establish or offer digital courses to residents. <ul style="list-style-type: none"> i. Refer to 09 Case Studies.pdf which includes examples of how digital education has been provided in various European Union countries b. Develop a Digital Competency framework to be included in the appraisal process. c. Closely align digital access projects with organisations providing employment and training services so sessions or courses can be delivered from a potential network of learning hubs. d. Introduce a sustained marketing and communications campaign, including e.g. <ul style="list-style-type: none"> i. A guide showing residents how to use online services. ii. Details on how to navigate your web site iii. Involve residents and seek volunteers to establish a task group to ensure that the language and instructions are friendly and accessible.

Initiative	Aspects to Consider
	<ul style="list-style-type: none"> e. Tenancy Managers could use a client service visit as an opportunity to provide guidance as to how to use the CHO's online services and maybe observe the tenant or household member using the self-service portal.
<p>7. Services</p>	<ul style="list-style-type: none"> a. Consider stopping paper statements. Not only will this reduce costs, it also has a positive environmental impact. b. Assess how you can improve your web site to make it easier to access and better support the processing of service requests and transactions. c. Provide options on your website so that a preferred method of communication can be recorded e.g., via email. d. Ensure that your core tenancy management system can hold information on communication preferences. e. Good digital service design does not mean simply re-creating processes used by existing channels. Assess how and where you can or should undertake a re-engineering of process and/or integration of a number of related processes. Refer to the steps outlined in <i>07 Digital Implementation Planning Guide.pdf</i>
<p>8. Targets</p>	<ul style="list-style-type: none"> a. Consider the introduction of SMART related targets for inclusion in your digital strategy e.g.: <ul style="list-style-type: none"> i. x% of tenants will have access to the internet at home by y date ii. x% of tenants will be registered and using the tenant portal / transacting with you by y date iii. % employees having a basic level of digital competency

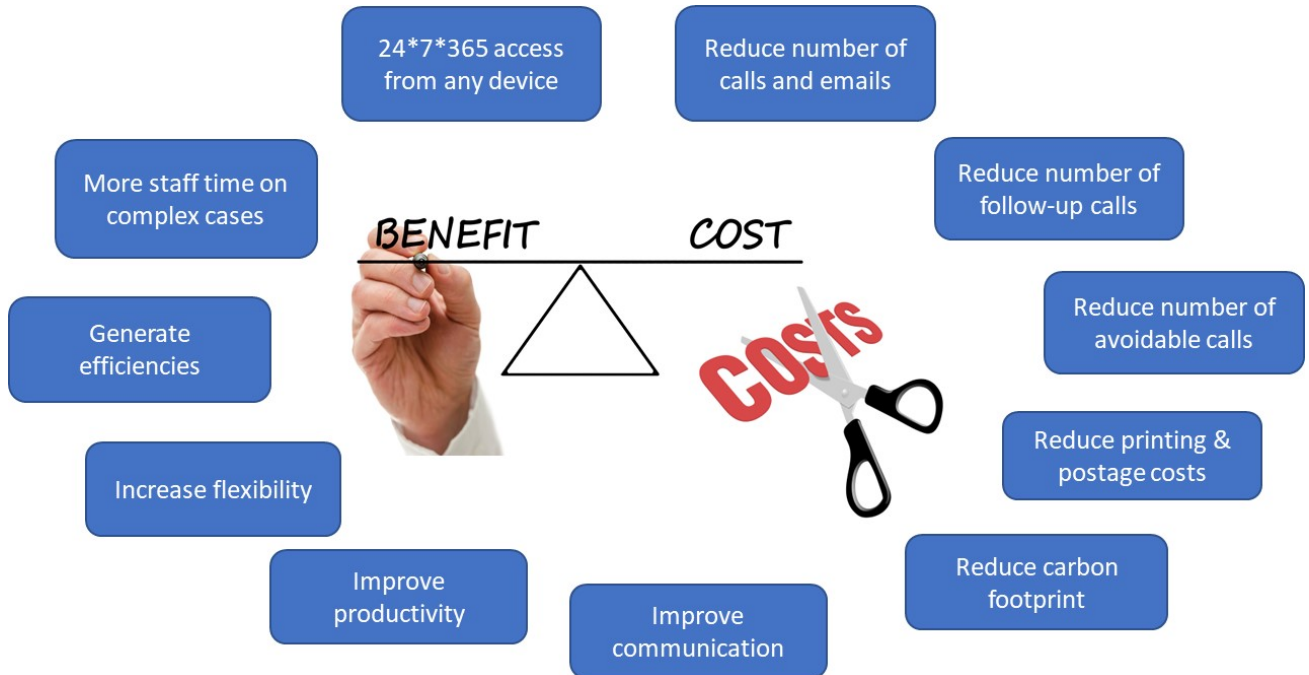
4.2 Customer Experience

4.2.1 Self-Service

Digital transformation offers enormous potential to add considerable value to improving the customer experience through a self-service portal, accessed as an app either via a smartphone or a tablet or accessing the portal from the CHOs website using a laptop, as illustrated below:



In relation to customer experience, the utilisation of digital channels provides additional choice to people in how they contact their CHO and offer the following benefits as well as opportunities to cut costs:



Refer to **01 Digital Transformation Implementation Guide.pdf** for an example of a cost matrix.

To ensure that a digital self-service initiative can add most value, the following actions are needed to achieve effective utilisation.

Action	Consideration
1. Identify tenants' pain points in relation to how they contact you	<ul style="list-style-type: none"> a. Understand what makes it difficult for them and then assess where the introduction of digital channels could improve this. b. This will have been identified from the persona journey mapping exercises you will have done. c. Refer to 05 Persona Journey Mapping.pdf for approaches to undertaking persona journey mapping.
2. Assess in detail how a digital experience could improve the journeys customers have with you.	<ul style="list-style-type: none"> a. Think about the customer journey from a digital perspective. How could digital tools make customer journeys easier for those who would use the service? b. Consider how digital can play a part in keeping customers / clients informed of changes to your services and new initiatives. c. Think about the cost / benefit implications as indicated in the illustration above.
3. Put people first (tenants, suppliers and staff).	<ul style="list-style-type: none"> a. Analyse their needs and plan the technology solutions around those needs to ensure good take-up of whatever digital initiatives are being planned.

Action	Consideration
	<ul style="list-style-type: none"> b. Assess the training and educational needs of tenants, suppliers and staff. c. Assess how you will communicate the reasons for implementing new digital initiatives.
<p>4. Determine which customer / client interactions could take place digitally. The above graphical illustration provides examples to the types of self-service interactions that could be supported.</p>	<ul style="list-style-type: none"> a. Once this has been determined, consider the impact on: <ul style="list-style-type: none"> i. Current customer service structure. ii. Current business processes and the changes needed. A good digital experience is achieved by a whole-of-organisational approach from the front to the back-end of the CHO. b. As referenced in other documents in the CHIA NSW and CHIA Vic Digital Transformation pack, organisations operating using a silo-based structure find it challenging to improve the customer experience. c. Implementing digital tools but relying on an existing silo structure is a recipe for merely replicating current levels but within a digital context. d. Such an approach will more than likely contribute to limited success or at worst, digital transformation failure. e. Assess how back-office systems will need to be integrated to display information on the current status of the enquiry or the service request in the digital channel being used such as the portal / mobile app, so that the tenant can then be aware of what is happening and how the enquiry or request is progressing.
<p>5. Assess where digital channels could improve accessibility to information</p>	<ul style="list-style-type: none"> a. Think about what the user would need to see and how best to display it.
<p>6. Identify the digital self-service channels that can be easily and effectively used by tenants</p>	<ul style="list-style-type: none"> a. A simple website that is easily accessible and easy to navigate is better than one with a colourful design but ends up wasting the person's time. b. A tenant portal app that is easy to download, sign up for and use are vital in creating a great digital customer experience. c. Make it as easy to use as possible. If your user finds it difficult to navigate their way through a complex hierarchy or maze of options, that actually contradicts the purpose of digital transformation.

Action	Consideration
7. Ensure that the experience is integrated across the business, and designed for the customer's needs.	<ul style="list-style-type: none"> a. Assess whether your current organizational structure can support a fully integrated customer experience. b. Refer to the operational aspects to digital utilisation below in relation to automation.
8. Research and consult with tenants on those that have access to the Internet, have use of smartphones and who are likely to use a self-service option.	<ul style="list-style-type: none"> a. Remember, digital is an additional channel for those who have the means to use it. b. For effective utilisation, the self-service channel should be device agnostic – accessible anywhere and on any device. c. Take this into account when designing your self-service channel and if using a specialist digital supplier, discuss how the solution is capable of supporting different methods of access: smartphone, tablet and PC.
9. Assess how you will promote the new service	<ul style="list-style-type: none"> a. After consulting with tenants on Internet usage, consider how you will promote use of the new service to ensure maximum take-up through e.g., newsletters, further consultation etc.
10. Explore how you can develop partnerships with third-party organisations to assist tenants getting access to the Internet.	<ul style="list-style-type: none"> a. Tenants have better access to the internet through provision of equipment, devices etc and possibly discounted telecommunication services subject to the nature of any partnering arrangement that can be secured b. Training can be provided by partnering agencies or support groups
11. Assess how you will provide educational services and facilities	<ul style="list-style-type: none"> a. Through consultation, identify digital champions in the community who can assist those who need guidance and confidence in using online self-service facilities. b. Explore how you can provide training in the community.
12. Ensure the digital self-service is easy to use.	<ul style="list-style-type: none"> a. A good omnichannel experience will enhance consistency and faith in its ongoing use. b. Establish ways of capturing user feedback and act on this
13. Determine which technology tools will deliver the best digital customer experience is key to achieving effective utilisation.	<ul style="list-style-type: none"> a. Thoroughly evaluate your procurement options and product capabilities.
14. Develop a coherent digital plan to meet your business needs both now and into the future.	<ul style="list-style-type: none"> a. For guidance on how to develop a digital strategy, refer to 07 Digital Transformation Implementation Guide.pdf

Action	Consideration
15. Implement a process of continual digital review.	<ol style="list-style-type: none">Remember that ensuring effective utilisation is continuous, requiring constant review and updating to meet changing preferences.Technology will never stand still. Further initiatives in the digital world are inevitable.

4.2.2 Chatbots

Chatbots and virtual assistants offer benefits in supporting self-service and automation. There are 3 types of chatbots:

1. Rule-based
2. Powered by Artificial Intelligence (AI)
3. Application-oriented

With AI, they can be programmed to swiftly answer frequently asked questions (FAQs), allowing your customer support teams to focus on topics that matter the most. AI is



defined as the theory and development of computer systems able to perform tasks normally requiring human intelligence, such as visual perception, speech recognition, decision-making, and translation between languages. In general, AI systems work by ingesting large amounts of labelled training data, analysing the data for correlations and patterns, and using these patterns to make predictions about future states.¹²

AI chatbots can be programmed to understand specific user intents and actions, initiate proactive notifications and provide a personalised service. Furthermore, they can be easily deployed on to multiple digital channels and messaging channels, such as Facebook Messenger, WhatsApp and Instagram. Transactional-based chatbots can be configured to automate specific requests and integrate with back-office systems.

They can also lead to faster response times and be offered automatically in different languages. Chatbots present a faster and more cost-efficient alternative to translation services. Multilingual chatbots can automatically translate questions and answers, helping you to digitally include your hardest to reach residents.

A chatbot can be used as a further option to enhance service provision whilst lowering costs and maintaining existing customer support teams. Furthermore, they can be used to diminish unnecessary human involvement. Of course, housing is a very human operation and use of chatbots is not intended to remove this, rather they can be used effectively for routine types of enquiries or questions.

To ensure that a chatbot initiative can add most value, the following actions are needed to achieve effective utilisation.

¹² <https://www.techtarget.com/searchenterpriseai/definition/AI-Artificial-Intelligence>

Action	Consideration
1. Define your requirements.	<ul style="list-style-type: none">a. Think through how a tenant would want to use it. How can a chatbot help them?b. Think of the content in terms of the types of questions typically posed and then choose the functions for it.c. A warm greeting and making the process personal will make users feel more at home in using the service, so think through the style of questions and how they are phrased.d. Think about options that the user needs, e.g., languages where you provide an option for the person to select the language they wish to use.e. Think about the information also that can be displayed such as your opening hours, location or provide options to request e.g., an appointment with the Tenancy Manager, with the chatbot potentially sending an appointment confirmation by email.
2. Define a question hierarchy	<ul style="list-style-type: none">a. Think through how you deliver customer services and the main functions provided.b. Consider a hierarchy of questions for each function and how answers may generate further logical questions which need to be covered.c. Think pro-actively and not reactively in designing the question hierarchy.d. Define specific use cases, considering the types of enquiries the chatbot can solve for tenants, applicants and their helpers. Ensure that the structure of questions can distinguish the types of questions being entered (i.e., the chatbot knows what the person is asking in relation to a specific problem or issue)e. Most importantly, do everything you can when designing it to ensure it does not sound like a robot.f. Some suppliers are now providing chatbots as part of their product suite, so as part of any evaluation, check how the tool is configured or whether you need to explore specialist providers operating in this area.
3. Factor in emotions	<ul style="list-style-type: none">a. Think about how the chatbot can be set up to encourage users to communicate and express their anxiety or stress.b. Chatbots are starting to be used widely in the healthcare industry, so research how other industries have deployed them.

Action	Consideration
4. Determine how to achieve integration with social media	a. Consider how a chatbot could be integrated with social media platforms to further provide a seamless customer experience.
5. Assess how and when live channel support would be needed	a. Think about how you would provide the option to handover to a live agent or customer service representative.
6. Ask for feedback from tenants and review comments	<p>a. Sometimes this can be somewhat overbearing with feedback being requested by most organisations – ‘how did we do?’ etc, however it is important to understand what people feel when they are using the service.</p> <p>b. Consider how automation can be used to save time in analysing results.</p> <p>c. Consider including a form for people to rate their experience in how their enquiry was resolved.</p> <p>d. Instant feedback not only shows what has been resolved and how, but it could also show where improvement may be needed in the digital service you are providing.</p> <p>e. When users have a good experience, they can inadvertently become advocates for users in using the service.</p>
7. Define reporting requirements	<p>a. Think about the reporting you will need to undertake to prove how a chatbot service has been utilised. For example, think about analysing the:</p> <ul style="list-style-type: none"> i. Number of enquiries being made outside of office hours – this will substantiate the costs of implementation and usage. ii. Number of non-urgent and repeat questions being made through the chatbot which otherwise would have previously been handled by a call handler or customer service representative. iii. Types of questions being raised to provide insights on the topics that matter to tenants, thereby guiding further future content creation. iv. Number of tenants using the chatbot who were encouraged to use new self-service tools, thereby reinforcing the value of the CHO’s digital service. <p>b. Compile the above into an analytics dashboard, so you can identify trends in tenants’ needs, even before they may become apparent through other avenues, such as consultation activities. This data can then be used to inform the future evolution of the chatbot.</p>

Action	Consideration
8. Assess how you measure performance	<ul style="list-style-type: none"> a. Remember, that poor performance or design of the chatbot can result in a poor customer experience and therefore will be poor utilisation of a digital technology initiative. b. Good analytics will help you measure performance. c. Proper planning, thinking, design and implementation will ensure effective utilisation.

4.3 Customer Relationship Management

Some suppliers provide customer relationship management (CRM) functionality but not currently all. It is now increasingly important to have a 360-degree view of any person that you are dealing with or providing services to.

Systems with good customer relationship management can benefit your operations by helping you to centralise, optimise and streamline communications with your tenants, clients, applicants, household members, stakeholders, agencies and other third parties.

CRM functionality can be used to organise and manage contacts and all forms of communications as well as automating key tasks. It tracks and manages all interactions and communication your staff have with all people you deal with. It enables you to know more about people other than your tenants.

Furthermore, in deploying a self-service portal, it is important for your back-office system to have a record of the enquiry or service request being made online and then how it is allocated to respective staff for action.

Refer to **03 Assessing IT Improvements.pdf** for further

details on what CRM based systems can offer and the benefits they provide.

To ensure that CRM can add most value, the following actions are needed to achieve effective utilisation.



Action	Consideration
1. Undertake a gap analysis of what your current systems provide to enable you to manage all forms of interaction with your residents.	a. Refer to section 4.2.4 in 01 Developing an IS/IT Strategy.pdf for details on how to undertake an assessment of your current information systems in terms of how they support customer relationship management.

Action	Consideration
	<ul style="list-style-type: none"> b. Think through whether your current systems are capable of integrating to self-service and staff mobile portal apps. c. Think through how your organisation interacts with any form of contacts made by a person or organisation across your sphere of operations. d. Consider what you need to do to implement a person centric approach. Your CHO will typically provide services to an extraordinarily diverse range of people and it is likely that it may need to improve how it can manage that interaction. e. Assess how you manage and maintain contact details with all organisations and staff (third party support organisations; agencies; partners and their staff) that it deals with. f. Consider how information needs to be held irrespective of the type of service function or operation
<p>2. Define your requirements.</p>	<ul style="list-style-type: none"> a. Consider the following areas of operations and compare against what your current system currently provides: <ul style="list-style-type: none"> i. Single view of customer ii. Role related views for staff to see the key data they need for records in their portfolio iii. Summary dashboards of staff portfolios iv. Ability to search on contacts v. Provide facilities to alert and prevent data duplication in customer records vi. Categorise and group all customers vii. Record multiple contacts viii. Manage all inbound and outbound contacts, irrespective of type and source ix. Preferred contact methods x. Preferred language xi. Automatically associate types of contact methods (inbound & outbound) to all customer / organisation records across the system, with details of the type of communication being displayed and by date received or sent. xii. Hold the relationship of the client to your CHO, e.g., tenant, support agency, private owner, contractor, non-tenant etc. A client may also have multiple relationships

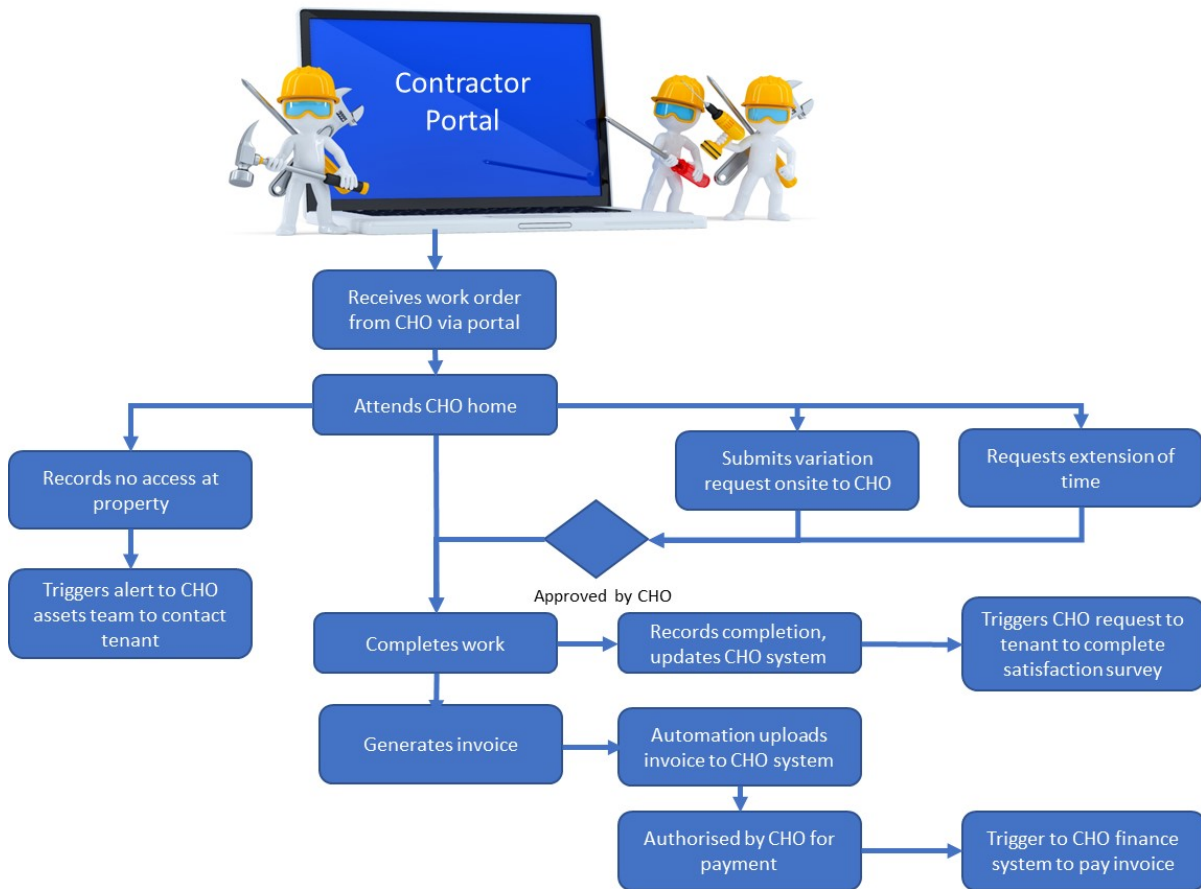
Action	Consideration
	<ul style="list-style-type: none"> xiii. Hold the relationship of the client to other parties including emergency contacts and next of kin. xiv. Link related contacts from different parties. (e.g., linking tenants to support workers to landlords etc no matter which area of CHO's business i.e., finance/tenancy/maintenance) xv. Allow the user to see a consolidated view of all correspondence issued to a client. xvi. Record user-definable client profile details, e.g. socio-cultural, demographic, disability, living situation, income, health and emergency contact, ensuring fields can be made mandatory as necessary. Such information should be held against each person record. xvii. Generate analytical reports in order to gain a perspective as to what is happening in the community, the housing and the people who live there based on the demographic information that is held on all residents (tenants; private tenants and owner occupiers). xviii. Manage organisations and contacts. xix. Appointment functions: raise and amend for specific types of activities with scheduling facilities combined with integration to Outlook xx. Information to support customer risk assessments.
<p>3. Review your customer experience processes and operations</p>	<p>a. Refer to <i>01 Digital Transformation Implementation Guide.pdf</i> to assess how you currently deliver customer services; how you are structured to best support these and define your digital objectives.</p>
<p>4. Review your current communication channels and identify where CRM could offer improvements</p>	<ul style="list-style-type: none"> a. Assess how or whether you can currently record multiple contacts with individuals; groups and organisations on a one-to-many basis. This includes various contact methods (telephone, letters, meetings) and contact reasons (feedback, enquiries, appeals). b. Assess how you would need to generate notifications and acknowledgements using an array of contact digital channels in conjunction with your CRM e.g., notifying a tenant when arrears have reached a certain limit; notifying a tenant of an inspection date / reminder etc; notifying tenant of a repair appointment; acknowledging receipt of payment etc

Action	Consideration
5. Review your current customer contact data	<ul style="list-style-type: none"> a. Assess how often you really reviewed your contact data. How accurate is it? How often do you ask your tenants to confirm their contact details. b. How is contact information currently kept? c. What format is the contact data. Invariably, older legacy systems do not provide masking formats that provide consistency in how phone numbers are held resulting in wide discrepancies. d. Assess the impact on data migration to a new CRM system based on your current data quality. If you have not already done so, start the process of reviewing your customer contact data, do it now.
6. Identify process and operational improvements that you can make in utilizing CRM functionality	<ul style="list-style-type: none"> a. Do not replicate what you do now in a new CRM based system. b. Identify the scope for how CRM can improve what you do. c. Ensure you have defined customer service goals. Be clear what you want to achieve from a CRM. How do you want to improve your customer relationships. Refer to 05 Persona Journey Mapping.pdf to assess how you can identify improvements by mapping out the experiences your tenants have with you. Why do you want to improve customer relationships? What specific customer behaviours mean the most to how your CHO delivers services? d. Assess the current touchpoints and then examine how these will change in relation to the digital transformation initiatives you intend to implement. e. A CRM can support a collaborative customer service approach which is a major benefit over traditional systems. Implementation of a CRM can address any issues being caused by silos of working and silos of information.
7. Assess what you can automate in a new CRM based system	<ul style="list-style-type: none"> a. Review the manual work your staff currently do in entering customer contact data in your current legacy system. b. Take advantage of the workflow automation features typically provided in CRM systems to eliminate time-consuming and repetitive functions. c. Assess what the CRM can do to automate data entry and generation of responses e.g., automatic email acknowledgement responses. d. Assess how best you can personalise responses.

Action	Consideration
8. Assess the level of integration	<ul style="list-style-type: none"> a. Some of the systems currently available in the housing sector have integral CRM capability and form a core feature of the system design. b. If you are intending to retain your legacy system but intent on procuring a CRM product, assess how it will effectively integrate.
9. Evaluate products	<ul style="list-style-type: none"> a. As noted above, some suppliers to the housing sector provide CRM functionality integral to the overall system. b. Determine the key features you need, including the sample list of requirements set out above.
10. Train your users	<ul style="list-style-type: none"> a. Ensure that your staff understand the benefits that CRM can offer. b. Ensure that the above preparation and planning are incorporated in your training. A CRM can only be as effective as your CHO will allow it to be. c. Ensure that staff always update customer information. d. A CRM is only effective when the data it provides is current. This should be obvious however, not all staff will remember to do this. e. Determine the number of mandatory fields needed as well as the reference values to ensure that data is entered accurately.
11. Analyse your data	<ul style="list-style-type: none"> a. CRM systems are very good at allowing you to analyse customer trends and data. b. Assess how you can combine CRM analytics with your digital transformation projects to gauge how many tenants are using digital channels to contact you and submit service requests. c. It is much easier to provide a positive customer journey experience when you know a lot about your customer. d. CRM can circumvent future issues and complaints by helping you learn from past encounters. Drilling down into how things went wrong, how long responses took and what was said is much easier when you fully utilise your CRM software

4.4 Supplier / Contractor Digital Channels

Similar to how a digital portal / app can add considerable value to how CHOs offer customer services, the implementation of supplier / contractor portals can likewise improve the level of interaction. An indicative diagram is provided below illustrating the flow of information between the CHO and a contractor portal:



The contractor portal displays all work orders received electronically with access available to the CHO with the status of the work order being displayed e.g., issued to tradesperson; appointment arranged with tenant etc.

A mobile digital app can be used by contractor staff when on-site to:

1. Request a variation
2. Request an extension of time
3. Record no access to the property
 - a. In turn this triggers a notification to CHO staff to contact the tenant to arrange access.
4. Record work completion

Upon work completion, the invoice is generated either directly in the contractor portal or the contractor's finance system and issued to the CHO electronically.

To ensure that the introduction of a contractor / supplier portal / app initiative can add most value, the following actions are needed to achieve effective utilisation.

Action	Consideration
1. Review current processes.	a. The provision of a contractor portal will inevitably mean new ways of managing and monitoring maintenance work

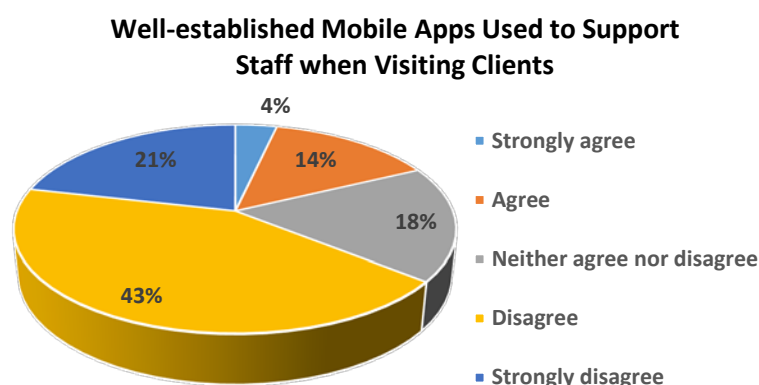
Action	Consideration
2. Assess capabilities of CHO maintenance system.	a. Assess information flows for issue and receipt of work order information.
3. If the current CHO system provides workflow automation capability, assess and document the steps for how staff will be alerted to tasks such as authorise variation request and approve invoice.	a. This will mean new approaches to how CHO staff have previously managed maintenance work b. Define delegation limits for processing work orders and authorising invoices.
4. If the current CHO system does not provide workflow automation functionality, assess and document the steps for how staff will view information.	a. Consider the training implications in relation to how variations, work completion and invoices are processed and displayed.
5. Set up integration with the contractor portal (if not provided by the asset maintenance system supplier).	a. Document integration requirements following completion of new processes being defined. b. Test integration

4.5 Mobile Staff Portal

Now more than ever, CHOs must enable mobility throughout their workforce to enable staff to work anywhere, anytime.

Supporting tenants where and when they need it most means that CHOs need to invest in mobile solutions, digitising all business processes where possible.

The digital readiness survey showed that some have ventured down this path with 7 of the 28 respondents already procuring mobile apps.



Mobile technology is rapidly developing and CHOs have opportunities to deliver tangible benefits to their front-line staff.

With nearly two-thirds of respondents in disagreement to this topic, it is clear that the usage of mobile apps across the sector still has some way to go before maturity and a good level of utilisation is reached.

Key benefits for staff in using digital mobile apps are:

1. Having access to tenancy and property information in real time on-site when visiting tenants in their home, thereby providing a more effective communication channel.

2. Removes the need to take paper-based notes when visiting a property and then entering in the information to the main housing management system when returning to the office. Data duplication and needless manual effort is therefore replaced in an instant by using a mobile app.
3. Ability for staff to spend more time working in the field.
4. Cost savings and efficiencies are therefore generated through the lack of time spent in data duplication. Overhead costs can be reduced and waste minimized.
5. Improves job satisfaction for staff working in the field. A common complaint amongst staff is the amount of manual work needed when visiting tenants and not having information easily at hand.
6. From a service perspective, the Tenancy and Property Manager has immediate access to the information they need whilst on-site using a smartphone or tablet.
7. Information is automatically and immediately updated from the mobile app to the main housing management system.
8. The tenant customer experience is likewise enhanced with staff having access to the information that may be needed when answering any questions or in verifying specific points, such as when a payment was made or a repair request made.
9. Mobile apps have the potential to greatly improve business operations through access to online information and also when combined with task automation functionality. In turn, both of these factors can enable CHOs to improve efficiency and effectiveness.
10. Data connectivity improvements in recent years means more opportunities to better utilise mobile working. Looking ahead, super-high speed and wider area coverage will increase the scope for greater use of mobile apps.

The following graphic shows an array of features that you should be looking for when implementing a digital staff mobile portal.

Think of this in terms of being able to view records and perform specific functions, with the mobile app displaying the key features the user would need when working in the field, and being able to complete a task end-to-end.



To ensure that a digital mobile staff portal can add most value, the following actions are needed to achieve effective utilisation.

Action	Consideration
1. Engage staff	<ul style="list-style-type: none"> a. Involve staff in the procurement of a mobile app. b. Understand the causes of staff frustration when out on-site. c. Assess how staff would best use a mobile app.
2. Determine the most time-consuming activities when out on-site	<ul style="list-style-type: none"> a. In engaging staff, listen to their view on what are the most time-consuming activities whilst out on-site and then consider what you want from a mobile app. b. How could a mobile app make life easier for staff when out on-site
3. Review and re-assess the touch points for staff and tenants when using a staff mobile app	<ul style="list-style-type: none"> a. Consider the devices that staff would need to use. Would this be “Bring Your Own Device’ which is gaining traction in some organisations or do you decide on the procurement and distribution of tablets. b. Assess what is the best device to use when out in the field. c. Think through the data that a mobile user needs to capture when out in the field and the key data fields that need to be included in the mobile data app. d. Think through how the tenant (and their household members) could benefit from the staff member using the app to provide them with advice.
4. Define requirements	<ul style="list-style-type: none"> a. Once staff have been consulted, assess the functions that your staff will need access to when working onsite in tenant homes. b. Assess how staff will need to view records and perform functions. c. Do not expect to replicate the core systems you use for housing and property management exactly on a mobile app. Think how the information should be displayed and used on mobile devices. d. Clearly set out your requirements as to the functions that need to be supported on the staff mobile app. e. Refer to 03 Assessing IT Improvements.pdf for examples of business functions that should be supported. f. Consult with other CHOs using mobile products and assess their experiences – what worked, what didn’t, what would they do differently?
5. Evaluate mobile solutions	<ul style="list-style-type: none"> a. Fully evaluate products being proposed by suppliers. b. Assess the technology used

Action	Consideration
	<ul style="list-style-type: none"> c. Does the mobile solution support off-line working or must it always have a connection for it to work? d. How intuitive is the app? e. What business rules are embedded in the app? f. What is the level of integration with the back-office system? g. What needs to be set up as part of the implementation?
6. Review and assess how business processes can be made more efficient	<ul style="list-style-type: none"> a. Think through how use of a mobile app can improve current business processes. b. Assess the impact on the business process of work being completed in the field.
7. Determine the impact of a staff mobile app operating in conjunction with back-office automation and task management.	<ul style="list-style-type: none"> a. Think how a user processing a transaction on-site could be used to automate a task to a user in the back-office. b. A good example would be where the mobile user identifies rechargeable work on-site and either needs to have the work and / or recharge account authorised by a manager before the tenant's consent to pay is sought or where the tenant is advised that they will be re-charged for the damage.

4.6 Operations & Automation

It's all very well providing a self-service or a staff portal app as the front end, however, a key aspect to the effective utilisation of digital technology is determining what happens at the back end in terms of:

1. Integration to the CHO's back-office systems.
2. How staff are made aware of a service request being submitted through the digital self-service portal app or a variation and invoice being raised through the contractor portal and its mobile app.

2. Arrears escalation and generation of communications.
3. Identify of tenant damage, raising of a recharge account, managing a repayment plan and processing a work order ensuring that the correct proportion of damage is identified. In this instance, staff from tenancy, assets and finance can be involved.
4. Processing complaints of anti-social behaviour through a variety of steps to resolution of the case. These steps may well involve other members of staff who become involved upon completion of previous steps.
5. Vacancy management in supporting the steps through distinct paths to relet a property subject to its circumstances e.g., is it a routine vacant or does it require major works, has it been abandoned and what are the related steps, how is methamphetamine cleansing administered and who needs to be involved and when.

The potential benefits of automation are:

1. Reduce cost.
2. Enhance processing time of specific functions or activities.
3. Reduce response times.
4. Reduce waiting times.
5. Increase efficiency.
6. Allow more time to be devoted by staff to priority or more complex cases.
7. Potential increases in tenant satisfaction.

To ensure that the digital portal solutions as described above can add most value, the following actions are needed to achieve effective utilisation.

Action	Consideration
1. Determine the sequence of steps needed to respond and resolve each type of service request.	<ol style="list-style-type: none"> a. Determine the users who are involved or who need to be involved b. Assess your current status quo and assess how automation can improve specific business processes e.g., in arrears management, think through actions could be automatically escalated to other staff or with communications to tenants being automatically generated such as through the self-service mobile app to advise tenants their account has slipped into arrears. c. Review, redesign and reconstruct selective processes only when you have a good understanding of how workflow / task management software can support the extent of automation you want to introduce. d. Ensure you have the foundations right and avoid replicating what you do now, but consider how software can help to improve what you do through automation. e. Map out end-to-end workflows for specific housing functions and identify repeatable tasks.

Action	Consideration
2. Review how your customer services are currently provided.	<ul style="list-style-type: none"> a. From the digital readiness survey undertaken (refer to 07 Digital Implementation Planning Guide.pdf), you will have determined whether your structure to deliver customer services is silo-based or is integrated across teams. b. Assess the extent of any re-structuring needed to establish a more seamless customer experience.
3. Assess how workflow / task management software can be aligned to any revised structure	<ul style="list-style-type: none"> a. Consider new business processes in relation to the new structure and the configurational capabilities of the software. b. Consider how staff will need to view and act on self-service requests or transactions being initiated by other parties such as contractors. c. For each task in relation to each service request or transaction, assess the actions that the user will need to undertake. d. Assess how tasks will be monitored and escalated. e. Assess how the status of each task will be conveyed to the person using the portal to enable them to effectively track the progress of each service request.
4. Assess how automation can be used in conjunction with tenant self-service portals	<ul style="list-style-type: none"> a. Reference has already been made to use of a digital workflow engine in relation to self-service portals and back-office processes. b. By setting up automation integrated to a self-service portal, this can result in cutting traditional call times whilst improving instances of no access and getting work done on time. c. Also consider how automation can be incorporated within AI driven chatbots.
5. Assess how automation can be used in conjunction with contractor / supplier portals	<ul style="list-style-type: none"> a. As indicated in section 4.3, assess how workflow / task management functionality can be utilised in conjunction with specific contractor actions such as submitting a variation request and submitting an invoice. b. Think through the user delegations that would be set up to either automatically approve such requests or actions. c. Assess how managers or team leaders would be prompted of specific tasks to authorise (where the authorisation level exceeds the permitted delegation amount). d. Assess how the information flow can be configured to be as seamless as possible.

Action	Consideration
6. Review your data	<ul style="list-style-type: none">a. Poor data quality can pose significant obstacles or hurdles to establishing automated processes e.g. if tenant contact details are not up to date, that can lead to delays in a task being completed, such as maintenance work being raised and arranging an appointment to call at a tenant's home to carry out the repair.b. The lack of standard operating procedures could result in inconsistencies in how staff undertake complex, but routine, operations. Any inconsistencies can result in difficulties tracking performance with issues around data capture, measuring efficiency, quality output and uniformity. Inconsistent approaches to carrying out operations can result in data quality issues being identified as part of exception reporting and should be ameliorated from an operational excellence, risk and compliance perspective.c. It is therefore important to undertake periodic data reviews of all data held to ensure its relevance and accuracy.d. Proactively measure and monitor the data you hold to eliminate the root causes of data issues being generated e.g., consider your data reference values, use of mandatory fields, system configuration etc.e. Identify if there are any clear and common themes in issues, challenges and root causes.f. Remember that the tolerance for error in an automated process is small if your data is not accurate or not managed properly.g. Is the current technology infrastructure an underlying contributor to the current state and limitations of both your data and analytics capability?h. Consider how a data management strategy is defined and used.<ul style="list-style-type: none">i. Assess the current state of your data environment.ii. Understand the desired state to develop a high-level data strategy.iii. Develop a roadmap for the uplift and implementation of the data capabilities of your CHO.

IoT deployment offers a range of potential benefits including:

1. Provides mechanisms to monitor tenant safety.
2. Ensures health and safety compliance requirements can be met.
3. Addresses energy / fuel poverty through effective monitoring and controls.
4. Monitors the well-being and health of elderly residents e.g., through use of motion detectors.



Refer to **09 Case Studies.pdf** for an example of how this is being used in the UK (London Borough of Sutton and the Sutton Housing Partnership).

5. Monitors maintenance life to incorporate in future strategic asset management planning and provides long-term insights for asset condition forecasting.
6. Supports green energy initiatives and reducing building energy.
7. Helps to conserve water and monitor leaks.
8. Provides better immediate knowledge through measuring and reporting on specific outcomes from the data that the device generates.



Refer to **03 Assessing IT Improvements.pdf** for further information on deployment and usage.

To ensure that IoT initiatives can add most value, the following actions are needed to achieve effective utilisation.

Action	Consideration
1. Define strategy	<ol style="list-style-type: none"> a. As with defining a strategic asset management plan, it is important to define an IoT strategy. Key questions are why do it and where would you start? b. Determine the asset related initiatives where IoT deployment can add value and where it is needed. c. Identify the objectives for IoT deployment e.g., increased productivity, decreased costs through predictive maintenance.

Action	Consideration
	<ul style="list-style-type: none"> d. Research where IoT could best be deployed by your organisation. e. Consider the introduction of a pilot project to show proof of concept. f. Identify the reporting requirements needed to analyse the data that an IoT initiative could generate. g. Determine where IoT is aligned to your CHO's business goals and its overall IT strategy.
<p>2. Assess the technology implications</p>	<ul style="list-style-type: none"> a. Assess how IoT can be incorporated within your technology architecture. b. Consider the physical layers of IoT devices (e.g., sensors); the network (bandwidth); software apps (some still in their infancy) and computing resources needed to process the data. c. Assess the computing resources needed to handle additional processing or use cloud-based solutions.
<p>3. Assess the security implications and the best ways to secure IoT devices and data being generated</p>	<ul style="list-style-type: none"> a. Data being sourced from IoT deployments can be sensitive and confidential. b. Currently, there is little governance or guidance in relation to IoT security and there is a lack of overarching mechanisms to ensure proper security management. Legislation focusing on IoT security is largely viewed as a fragmented patchwork of laws. Many current data security laws – and especially statutes requiring notification of data breaches – do not apply to IoT security issues.¹³ Standards are however emerging for an architectural framework for IoT.¹⁴ The standard offers a common architectural framework for IoT across transportation, healthcare, utility and other domains. It conforms to the international standard ISO/IEC/IEEE 42010:2011.
<p>4. Determine the information integration requirements to back-office systems.</p>	<ul style="list-style-type: none"> a. Mention is made above to a potential benefit to forecasting future planned maintenance. This will however be subject to integration of data from the IoT sensor to the back-office asset management system. b. Many CHOs still consider asset management to pose distinct challenges particularly with the systems available to fully support it.

¹³ State of the Connected World, 2020 Edition, World Economic Forum

¹⁴ <https://standards.ieee.org/ieee/2413/6226/>

Action	Consideration
	<ul style="list-style-type: none"> c. Assess how data needs to be held in the back-office asset management system from what the IoT device holds and generates.
5. Assess the data and its formats that the IoT device and supporting software generates	<ul style="list-style-type: none"> a. Subject to the device and the supporting software, IoT data is likely to be highly time sensitive and consideration needs to be given as to how this will be held. b. Assess the data storage implications as part of your evaluation of supplier products. c. Assess whether an intermediary repository is needed to host the data from each device before the data is analysed.
6. Understand the design components of devices deployed	<ul style="list-style-type: none"> a. Remember that IoT devices will be small computers connected to a wide network. b. As indicated above, consider the security implications in terms of how data will be transmitted and how secure it needs to be.
7. Assess the device management implications	<ul style="list-style-type: none"> a. Assess how you will procure, connect, configure and maintain each IoT device deployed in each home.
8. Assess the communication implications	<ul style="list-style-type: none"> a. As part of any IoT project, determine how you will communicate with tenants, explaining the reasons for the installation of IoT devices in their homes.
9. Define the reporting requirements	<ul style="list-style-type: none"> a. Determine a detailed understanding of how IoT data will be used analysed and used, aligned to the technology infrastructure implications you will have assessed as indicated above. b. The real value you will get is not from the devices deployed but the data you will be collecting. Refer also to the next section on use of AI in conjunction with IoT to predict future actions. c. Assess the extent to which AI functionality will be incorporated within the sensor software and how this will be analysed. d. Assess whether the device supplier provides its own portal for data analysis. If so, assess the implications for the management of reporting and how data will be aggregated. Will this therefore require the establishment of an IoT data warehouse for example?
10. Determine IoT deployments	<ul style="list-style-type: none"> a. Having assessed the technology implications, determine where IoT devices could best be utilised by your CHO.

Action	Consideration
11. Evaluate products	<ul style="list-style-type: none"> a. With IoT still being in its relative infancy in the community housing sector, products and apps are still evolving.¹⁵ b. Ensure you undertake a full evaluation of products being proposed by suppliers. c. Seek guarantees on delivery from the supplier.
12. Assess risks	<ul style="list-style-type: none"> a. Consider the potential diversity of potential IoT deployments in housing. b. Ensure all IoT devices can be configured and are discoverable across the network. c. Ensure that proper authentication can be configured and managed for each device. d. Consider the firmware updates likely to occur and the impact of any downtime. e. Assess the security implications as mentioned above.
13. Assess support and maintenance	<ul style="list-style-type: none"> a. Evaluate how IoT device suppliers will provide support and maintenance services. b. Compare the support costs of potential suppliers. c. Carefully examine the support contracts from IoT device suppliers.

4.8 Artificial Intelligence

Reference was made above to how AI is or can be used as part of the overall design of chatbots to guide users through a hierarchy of questions in relation to a particular topic enquiry.

AI can also be used for reporting and analysis, providing CHOs with insights into their operations that they may not have been aware of previously.

The Australian Government has endorsed a working definition for AI which was developed by the Commonwealth Scientific and Industrial Research Organisation (CSIRO), an Australian Government agency responsible for scientific research. CSIRO's definition¹⁶ for AI is:

“a collection of interrelated technologies used to solve problems autonomously, and perform tasks to achieve defined objectives, in some cases without explicit guidance from a human being.”

¹⁵ <https://www.techtarget.com/iotagenda/feature/7-IoT-SaaS-platform-providers-help-streamline-adoption>

¹⁶ Hajkowicz S A, Karimi S, Wark T, Chen C, Evans M, Rens N, Dawson D, Charlton A, Brennan T, Moffatt C, Srikumar S and Tong K J (2019) Artificial Intelligence: Solving problems, growing the economy and improving our quality of life, CSIRO Data61 and the Department of Industry, Innovation and Science, Australian Government, p 2.

The technologies that enable AI, like development platforms, and vast processing power and data storage, are advancing rapidly and becoming increasingly affordable. Maintaining the accuracy of your data is also just as important.

It should be noted, however, that this definition has not been adopted uniformly across government and there is more than one definition in use in legal policy and reform discussions on AI in Australia.

The Organisation for Economic Co-operation and Development (OECD) defines AI¹⁷ as:

“a machine-based system that can, for a given set of human-defined objectives, make predictions, recommendations or decisions influencing real or virtual environments. It uses machine and/or human-based inputs to perceive real and/or virtual environments; abstract such perceptions into models (in an automated manner, e.g., with machine learning or manually); and use model inference to formulate options for information or action. AI systems are designed to operate with varying levels of autonomy.”

In terms of customer experience, machine learning algorithms are increasingly being integrated into analytics and customer relationship management (CRM) platforms to uncover information on how to better serve customers, hence the importance of having a good CRM system to manage all of your customer contacts, communications and dealings with tenants.

The use of algorithms also has the potential to improve the quality of decision-making by increasing the speed and accuracy with which decisions are made. As noted above, chatbots have been incorporated into websites to provide immediate service to customers.

AI can also be utilised in conjunction with IoT devices to pre-empt asset failures, monitor asset behaviours, conditions and performance factors through remote monitoring and predictive analytics to generate a risk assessment matrix and schedule of actions. AI-enabled technologies are beginning to be used in smart homes in various countries to provide intelligent services and recommendations while IoT coupled with AI concepts has been applied to home environments.

Automation of decision-making and of job positions has also recently become a talking point among academics and IT analysts. This latter point is however causing some concern. The British Trades Union Congress (TUC) recently conducted a survey of workers about their experiences of technologies making or informing decisions about them at work where 22% who responded said they had experience of use of technologies of this type for absence management, 15% for ratings, 14% for work allocation, 14% for timetabling shifts, and 14% in the assessment of training needs and allocation.¹⁸ The TUC believes that AI systems have much to contribute and should be embraced, yet these new technologies need to be deployed in the right way. It is more than likely that its concerns would be shared by other representative bodies in other countries in relation to human and employment rights.

¹⁷ <https://www.oecd.org/digital/artificial-intelligence/>

¹⁸ <https://www.tuc.org.uk/research-analysis/work-and-technology>

In terms of reporting, AI can play a valuable role in data analytics. With AI-powered reporting tools, organisations can potentially get insights and analytics that were once impossible to obtain.

These tools are able to explore large data sets much faster and more efficiently than humans

can, so CHOs are able to make better, more informed decisions faster than ever before.

There are a number of different types of AI-powered reporting tools available on the market, and each has its own unique features and capabilities. These are:



AI Type	Purpose
Natural language processing (NLP)	Process and understand human language; the meaning of text data and generate reports on that data
Predictive analytics	<p>Makes predictions about future events. Helps organisations make decisions about the future. NB this should not be interpreted or confused with business intelligence, which uses historic data to show what has happened in the past or shows the current position e.g., the number of open work orders issued to specific contractors; number of void properties by status etc.</p> <p>Predictive analytics uses historic and current data to predict what <i>could</i> happen in the future, and which may involve large amounts of data.</p> <p>A good example is analysis of payment transactions and payment history. An AI reporting tool could be used to suggest an optimal payment plan that has the highest probability of being adhered to in order to prevent tenants from being in arrears.</p> <p>Predictive analytics can tell why something has happened and what might happen next. With proper analysis, such information can be used to improve aspects of your operations that you may not have been conscious of.</p>
Machine learning	<p>Allows computers to learn from data and improve their performance over time. Uses data that organisations gather combined with programmed algorithms to imitate the way that the human brain learns.</p> <p>Its insights improve business intelligence by helping organisations identify hidden patterns and make accurate</p>

AI Type	Purpose
	<p>predictions for data-driven decisions. It delivers personalised content and recommendations based on past behaviour and preferences.</p> <p>Machine learning is increasingly being used in other industries to learn about customer behaviours and inform how processes may be simplified and made more personalised.</p>
Data mining	Extracts key information from very large data sets.

To ensure that AI and predictive analytics can add most value, the following actions are needed to achieve effective utilisation.

Action	Consideration
1. Assess your data	<ol style="list-style-type: none"> If you do NOT have large or complex data sets, AI may not be relevant to your organisation. Remember AI is only as capable as the data it is working from, which reinforces the need for you to continually review your data and ensure you maintain it correctly. Seriously consider the volumes of data that will be generated with the number of digital initiatives you can deploy e.g., number of self-service transactions; data generated from IoT sensors etc. With the right, high quality data, CHOs can gain insights to enable them to decide on the right technologies to manage their tenants and processes, the most appropriate communication channels to use, and ensure they are prioritising their most vulnerable tenants. Collecting, storing, collating, analysing and using data both strategically and operationally is the key to the future ability of CHOs to deliver the right services at the right time, as cost-effectively as possible. AI can play a vital role in predicting future trends to suggest the proactive actions that could be taken.
2. Assess your needs	<ol style="list-style-type: none"> Do you need to make predictions about the future? It is vitally important to be proactive rather than reactive, hence why AI analytics can offer real value.
3. Assess your expertise	<ol style="list-style-type: none"> If you do have complex data sets and / or need to make predictions about the future, the key question to consider is the type of tool that is the best fit for your CHO.

Action	Consideration
	<ul style="list-style-type: none"> b. Explore tools that are easy to use and do not need significant training but provide the features that you need.
4. Consider a target maturity level	<ul style="list-style-type: none"> a. Determine a plan of action to achieve a desired state of maturity in terms of how AI can be used in your organisation e.g., basic, developing, established, advanced or leading. b. Explore opportunities to enhance existing or well-understood processes in your organisation. Identify and pursue quick wins in a methodical way. Start slowly, test and review. c. A test and learn approach can be deployed as part of a discovery process to reframe mistakes and reduce the fear of failure. Consider this in the context of why digital transformation projects fail as outlined in 01 Digital Transformation Implementation Guide.pdf.
5. Assess the technical infrastructure and AI tools	<ul style="list-style-type: none"> a. Determine the technical infrastructure and tools needed to deliver and manage AI models, along with the internal expertise needed.
6. Assess costs	<ul style="list-style-type: none"> a. Cost and capability pose the likely biggest hurdles to be addressed. b. Review both in the context of other digital transformation initiatives you are considering.
7. Assess your skills	<ul style="list-style-type: none"> a. Based on the above, identify the resources you would need to successfully build AI reports. b. If you do not have the internal resources, undertake market research to identify external assistance.
8. Consider the governance and ethical aspects	<ul style="list-style-type: none"> a. Taking into account the TUC concerns as described above, continually review the implications of how AI would be deployed across your organisation.
9. Act on outputs	<ul style="list-style-type: none"> a. Based on the outputs that AI would generate, determine how best you would review and implement measures. b. Assess how your data can be transformed to provide valuable insights, particularly with the vast amounts of data that will be generated through e.g., IoT deployments (see above). c. Identify the scope for business improvement.

4.9 Electronic Document / File Management

Document management is a common pain point in many CHOs using older legacy systems.

Refer to **03 Assessing IT Improvements.pdf** for further details on document management.

To ensure that the digitisation of files and documents can add most value, the following actions are needed to achieve effective utilisation.

Action	Consideration
1. Determine your needs	<ol style="list-style-type: none"> a. It may seem simplistic or taken for granted but there are three types of software solutions for managing digital content: databases; content management systems and repositories, each with a different focus and function. b. Some of the mainstream software suppliers state that their products include document management functionality incorporated within their databases, however, you need to check where and how it is stored in view of any potential impact on file storage costs. c. Content management systems include photo libraries, digital asset management systems, electronic records and document management systems (ERDMS), and web-oriented content management systems. These systems store or organise content as well as enabling collection and record metadata and the ability to track content and control versions. Some CHOs have procured specific EDRMS systems based on the number of files and documents which they manage. d. A digital repository is a software system for centralised storage of, access to, and management of digital content, generally in a networked environment. Some repositories focus primarily on storage and access, which is what some suppliers to the housing sector offer. Some integrate with SharePoint for file storage and document management. Each user is typically allocated a specific amount of document storage space. Some systems provide document repositories in SharePoint for specific modules, for example for each tenancy there will be folders set up in SharePoint for e.g., Residential Tenancy Agreements, photos etc. e. Database systems are typically used to describe and track content collections, whether digital or not. They are primarily metadata systems and do not hold or store content objects beyond basic elements such as sample content (e.g., extracts, thumbnails, short audio clips) that form part of the metadata. Metadata is descriptive information about the file.

Action	Consideration
	f. Match your content to identifiable or defined needs.
2. Quantify your current file / document capacity	<p>a. Determine how many documents you currently have and the space currently taken up.</p> <p>b. Assess your current document libraries for duplicate templates or files.</p>
3. Define your file naming conventions	<p>a. Again, this may seem like the obvious, but content needs to be standardised.</p> <p>b. To properly store files, access and use them, there needs to be good file naming conventions that describes what the content is, as well as indicating who can use it. The term for this is metadata, and is used to describe any kind of digital content, its attributes and characteristics. Good metadata should be accurate, clear and meaningful.</p>
4. Determine how content will be managed	<p>a. Decide who has authority to access and make changes to your digital content</p> <p>b. Decide who has overall responsibility for it in terms of overall content management but also the technology aspects of how it is to be stored and accessed.</p> <p>c. Assess how you can effectively search your document libraries for files when needed, not only the metadata but also the document contents. Determine the best methodologies for doing so. Discovery features like tag clouds, multiple navigation choices, showcases and widgets can help your content be found more easily. Make it easy and attractive for users to browse.</p> <p>d. Make staff aware of document access rights that focus on permitted activities.</p> <p>e. Regularly scan your repositories as an ongoing activity as part of your document management processes.</p> <p>f. Determine how you can ensure documents and files will be kept securely and that they will be accessible.</p> <p>g. Assess the capabilities of your housing management systems to utilise workflow and task management functionality to generate and populate forms and documents with relevant data so that documents are sent with the right information at the right time to the right person in the correct format.</p>
5. Ensure all forms, templates are digitized	a. Review all of your current forms and templates and align them to relevant operational functions.
6. Assess your technology needs	a. Determine the hardware and software solutions that will best cater for your document management needs.

Action	Consideration
7. Assess your storage costs	<p>a. As indicated above, some systems are supplied with specific document storage limits, which if exceeded can attract additional storage fees. Clarify these with the supplier so there are no hidden surprises.</p>
8. Assess your storage management processes	<p>a. Ensure you have proper back-up processes in place. A back-up requires you to have a minimum of two copies of your content – your currently accessed content and a separate, up-to-date copy. Back-ups should be planned daily or weekly depending on the volumes of content available or being created, and should ideally involve a further off-site back-up to protect against theft, fire or natural disaster. Also consider the possibility of running more frequent back-ups.</p> <p>b. Long-term storage requires a different strategy from back-up. It involves planning for archival copies of your content to be migrated between different storage media over time. In terms of storage management, it is important that you have implemented structured and standardised naming conventions relating to appropriate formats and metadata descriptions.</p>
9. Evaluate the scope for paperless processes and associated customer interaction	<p>a. Consider how electronic documents will be processed through a self-service app, with the tenant, applicant, person providing an electronic signature.</p> <p>b. Work through the information flow as to the electronic document being stored against the relevant tenancy / application record, and how this could trigger the next action through automation.</p> <p>c. Avoiding the need to retrieve and print documents with a focus to manage and communicated documentation electronically can result in significant cost and efficiency savings as well as reducing the time and administrative tasks for staff. Sending and receiving documents electronically can be undertaken quickly and thereby save considerable time. Assess how such activities can be incorporated in your operational processes through electronic document management.</p>