

Opportunities for AI in Adult Social Care Services



London Office of Technology and Innovation

Contents

01 Executive summary	3
02 Introduction	4
03 Identifying AI opportunities in Adult Social Care	7
03.1 Longlist of AI opportunities identified during user research	7
03.2 Prioritisation methodology	8
03.3 Prioritisation results and shortlisted opportunities	8
03.4 Opportunities in detail	11
03.5 Long-term strategic AI opportunities	17
04 Recommendations and considerations	18
04.1 Summary of deployment considerations	18
04.2 End-to-end approach to AI based service delivery	19
04.3 Overarching recommendations	20

01 Executive summary

London local authorities are increasingly seeking and exploring innovative solutions that deliver cost-savings and improvements to service delivery, especially in adult social care services, where demand and costs of delivery will only continue to increase with ageing populations and rise in co-morbidities. The rise in demand and scarce resources means local government services are reactive, however proactive, preventative measures would help tackle the root causes of growing demand.

Across the public sector, artificial intelligence (AI) has been suggested as a tool that might help improve service delivery. When applied effectively, AI could dramatically speed up or improve decision making, reduce time spent on administrative tasks, and create time for better quality service provision through easier contact with the borough maintenance team or improved resource allocation.

One of the biggest opportunities for us is seeing how we can try and remove those low level value but high volume tasks. That is one of the biggest opportunities for us in terms of AI - quote from user interview.

As a result of the needs of councils and the potential of a new technology like AI, LOTI commissioned Faculty - a UK based Applied AI firm - to identify and evaluate the possible good opportunities that AI might present to improve the delivery of adult social care services. It functions as a resource to help local authorities navigate this emerging technology for themselves and cut through the noise.

It was important to take a user driven approach in developing the opportunities, rather than be led by the technology alone. We carried out user interviews with staff across LOTI boroughs at the heart of adult social care service delivery. These user interviews were centred in identifying user pain-points and allowed Faculty to turn these into AI opportunities to address facets of these problems with a key focus on responsible AI. A prioritisation framework was developed to evaluate the ideas generated, and we would highly recommend local authorities to adopt this framework when evaluating their own AI use cases. The report ultimately details seven high value, feasible opportunities for applying AI in Adult Social Care, with the aim to kick-off the end-to-end thinking needed for effective implementation by London boroughs.

1. Automating the transcription of meeting notes
2. Converting existing documentation into learning disability formats [ID 2]
3. Matching adult social care data to gather insights for decision making
4. Triaging and prioritising requests to deal with demand across the front door
5. Improve and encourage self service for direct payments
6. Predictive forecasting to allow for early intervention in care
7. Interactive tool for ASC care providers for case management and personalised care

The report concludes with overarching recommendations from Faculty, drawing on their wide-ranging experience of applying AI to public services. These range from encouraging boroughs to start with small AI trials to learn and iterate which data foundations need improvement, to stressing the importance of focussing on solving real user problems and developing partnerships and agreements with technology providers that benefit all of local government and its residents.

02 Introduction

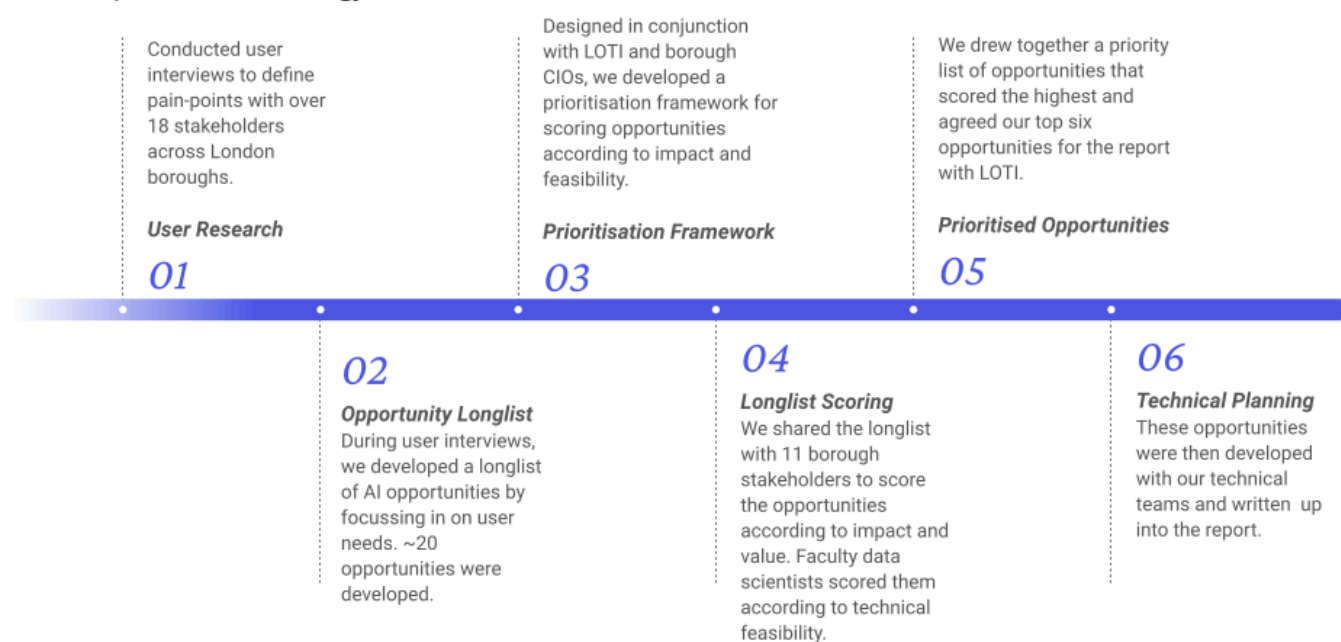
During the early summer of 2024 Faculty worked with LOTI to research what the right opportunities might be for using AI in local government, and what considerations authorities might need to make to take advantage of these opportunities. Given the hype surrounding AI, its apparent opportunities, and the omnipresence of 'AI' in every technology product that is now marketed to local government, LOTI wanted to produce trusted resources to help local authorities navigate this emerging technology for themselves. This report focuses on AI opportunities in the field of Adult Social Care Services (ASC), which was one of two service areas identified by LOTI members as worth prioritising, due to high demand and costs for the service, along with Housing.

Adult social care challenges

To ensure our suggestions were grounded in the real challenges facing boroughs, Faculty carried out ten user research interviews with digital teams, and adult social care leads within four London boroughs. Interviews focused on understanding in detail the day-to-day decisions, goals, activities and pain points of these users, what makes their work easier and more challenging, as well as the strategic objectives of their borough.

Faculty used the user interviews to build a longlist of AI opportunities grounded in user needs. They simultaneously developed a prioritisation framework (detailed further in section **03.2**) that allowed them to score these opportunities according to technical feasibility, and borough stakeholders to score according to impact and value on the service area. We then prioritised seven key opportunities to develop further in detail in this report.

Project Methodology



The interviewers drew out information about current AI implementation, ideas for where AI might make the most positive impact and users' attitudes towards the use of AI. The user interview phase surfaced the following themes among user challenges:

1. **A disproportionate amount of time is spent on collating, retrieving or submitting data and information.** Care workers spend a vast amount of time form filling, submitting statutory reports and searching for the right information across disparate databases.
2. **Managing an overwhelming volume of inquiries and requests.** Care workers want to be able to triage, prioritise and respond to requests faster, as well as support patients to self-serve.
3. **Difficulty in predicting demand and managing resources.** Leaders in ASC teams want to be able to better predict new demands on adult social care, such as, predicting when those receiving at-home care may be

hospitalised, thereby having the ability to be proactive in resource allocation instead of reactive, which would lead to better outcomes for residents.

4. **Balancing personalisation with a consistent approach.** Users wanted to have a greater degree of personalisation with assessments and care plans, while at the same time benchmarking against past cases to ensure appropriate allocation decisions.
5. **The burden of direct payments.** This often falls on the case officer who has to personally manage the interaction and relationship with payment recipients to help them find the support they need and can afford. Users felt there was a need for greater self service in this area.

How can AI help?

AI can process large amounts of data, identify trends and patterns, automate routine tasks and use data analytics for predictive analysis and forecasting. Its increasing capabilities and opportunity to be scaled across service areas and operational tasks will allow local authorities to lower operational costs and deliver services in proactive and dynamic ways.

To some extent AI technologies can be classified as either narrow AI or generative AI. Both have distinct goals and techniques, leading to unique applications. Traditional, or narrow, AI is primarily involved in analysing and classifying the information it's trained on. It excels in tasks involving processing input data and sorting this data into pre-designated categories, for example, determining whether an email is spam or not based on its content. Generative AI aims to create new data that mimics the input it's been trained on, such as large language models (LLMs) generating original text in a particular style that was previously only possible with human creativity. Successful AI solutions may blend both generative and narrow AI.

	<i>Narrow AI</i>	<i>Generative AI</i>
Purpose	Classify, analyse, or make predictions	Create new, original data
Data handling	Structured data, and categorised data	Structured or unstructured data
Applications	Data analysis, detection, recognition, prediction, decision making	Creative activities, writing, image/video/audio generation

Table 1. A summary of the primary differences between traditional and generative AI.

Responsible AI

While AI presents us with opportunity, there are risks and safeguards to consider and we recommend using LOTI's data ethics toolkit as a starting place.¹ Councils have a responsibility to use AI in a safe, ethical and secure way, and should consider this from the start of any project that involves the use of AI. Key considerations include: ethical safeguards, especially when working with vulnerable users and in high impact use cases, human validation and decision-making, frequent user testing, information retrieval safeguards and the relevant data protection and cybersecurity.² This will be further addressed within each opportunity.

The majority, if not all, AI projects, will require a Data Protection Impact Assessment to be completed before the use of AI is decided, and regularly reviewed throughout use of the AI, to achieve compliance with the UK General Data Protection Regulation (UK GDPR) and the Data Protection Act 2018. There are specific requirements on the use of AI, to set safeguards in place, ensure that the council understands how the AI works, establish effective ways to

¹ <https://loti.london/toolkit/recommendations-data-ethics-capabilities/>

² <https://www.oxford-aiethics.ox.ac.uk/oxford-statement-responsible-use-generative-ai-adult-social-care>

challenge the AI's decision making, and protect the rights of individuals. It is noted that further law on the use of AI is expected from the government, and this, once in place, will need to be reviewed against existing and new use of AI. It is also important for councils to consider the equalities impact on use of AI and achieve compliance with the Equality Act 2010. Councils must follow their own organisational governance processes, including for completion of Data Protection Impact Assessments (DPIAs) and Equalities Impact Assessments (EIAs). They may also wish to complete ethics assessments.

The government has suggested that completion of the Algorithmic Transparency Recording Standard will become compulsory for all public sector organisations, so councils should consider completing and publishing a transparency record.³ This type of publication will also help the council to meet its duties for transparency to data subjects.

With the appropriate safeguards in the design of AI systems, the technology can then deliver positive social value to a range of people and user groups within adult social care:

- *Residents and end users*, where service-led AI can help residents receive more regular and up to date information and interact with adult social care services in user-friendly and intuitive ways.
- *Case workers and operational teams* responsible for making effective, swift decisions, where AI can help them spend more time delivering the services they are expert in, and less time on burdensome form filling.
- *Strategic managers* overseeing performance, where AI can provide information to guide decisions on resourcing, rostering and trade offs between different options for improvement.

AI as part of existing digital products and services

Legacy digital systems in adult social care bind care workers and managers into a way of working dictated by burdensome forms and ineffective processes, as pulled out in one user interview: **"we've got a Frankenstein's monster of terrible infrastructure that we just keep adding things onto."** There is a longer-term need within adult social care services for a holistic re-evaluation of these failures of technology and design. AI isn't the solution alone, but given the excitement of many senior leaders and politicians for this technology, AI can be a useful entry point to initiate conversations about how we redesign modern services with modern technology like AI at their core. Even without going that far, AI tools can still provide a route to improving service provision and reducing costs in the sector without the need to rewire the whole digital infrastructure from scratch. Many AI solutions can be designed to be standalone and modularised and can be integrated into existing infrastructure, rather than requiring large-scale transformations with the associated costs, risks and timescales. However, care must be taken to ensure AI and lower-level automation tools do not unduly lengthen the reign of out- of-date legacy software.

While most legacy systems were not designed with AI integrations in mind, so long as data is accessible, valuable insights and opportunities can begin to be developed. Most importantly, starting small with AI and iterating incrementally in a measurable way will allow boroughs to extract value at the earliest opportunity and avoid the high-profile failures, spiralling budgets and long timeframes of large-scale IT builds of the past.

Off the shelf vs bespoke AI

Given the proliferation of AI across every sector and how accessible products have become, it would be unwise for local governments to ignore the benefits of trialling and rolling out off-the-shelf AI products over bespoke solutions. Indeed, [almost two-thirds of councils in a recent LGA survey](#) said that they were accessing AI via external providers. However the same principles apply as with any technology, customisation (or fine tuning) to meet unique needs can be difficult with off the shelf products. Individual one-off productivity opportunities may fare well with standalone off the shelf products, such as transcription of meetings, while opportunities that improve high volume repeated processes at a systemic level, such as triaging case work, may require more bespoke interventions.

Beyond this, we also recommend distinguishing between opportunities that can be considered quick wins, versus those that require a longer term strategic investment. This sequencing is important to deliver value, gain buy-in and

³ <https://www.gov.uk/government/publications/algorithmic-transparency-template>

demonstrate the art of the possible, while also laying the groundwork for longer term strategic change that might require a greater level of funding and organisational change.

Through Faculty's work with London boroughs, we have identified a longlist of prospective AI opportunities that represent impactful applications of the technology in adult social care services. This has been shared in the report and can be used for internal planning and alignment with borough-level technology roadmaps. This report details six opportunities that were scored the highest according to impact and feasibility and their risks and mitigations, which will allow local authorities to help achieve their tactical and strategic objectives.

03 Identifying AI opportunities in Adult Social Care

03.1 Longlist of AI opportunities identified during user research

Over the course of user and desk research, Faculty developed a longlist of AI opportunities. The purpose was to establish and develop potential opportunities using the following principles (defined with stakeholders):

- a. **Root causes over symptoms:** Focus on root cause problems rather than symptoms
- b. **Policy agnostic:** Avoid any requirement for policy change to access the value
- c. **Short term and long term:** In short-term to use AI to accelerate current programmes and in long-term looking at ways to redesign them if applicable.
- d. **Decision augmentation:** Provide AI tools for staff to make more informed decisions more quickly rather than taking decisions away from them.

The opportunities can be grouped according to theme and are outlined below:

Theme	User Need	Opportunity Summary	ID
Time spent collating, retrieving or submitting data and information.	Automate the transcription of meetings to save time.	A generative AI solution using audio-text to transcribe recorded meetings between carer and patient, live during the meeting.	1
	Save time on converting documents into learning disability formats.	A generative AI solution to convert existing documentation or produce novel documentation in easy read formats.	2
	Save time on gathering information to respond to statutory reporting.	A LLM to expedite the statutory reporting process by completing the reports automatically.	3
	Save time and standardise notes taken during meetings with residents.	A LLM to extract information or interact with care workers to ensure compliance and standardisation of note making.	4
Managing an overwhelming volume of inquiries and requests.	Save time on responding, triaging and prioritising requests at the front door.	A classification model to triage and prioritise, based on the type of care being provided and the severity of the cases.	5
	Extract information from enquiries with greater ease and speed.	A NLP model to conduct sentiment analysis of requests and subsequent retrieval of information using a LLM.	6
	Make self service for direct payments easier and more intuitive.	Allowing care patients to effectively self-serve, retrieve the correct information they may need and use accessible user interfaces..	7
Difficulty in predicting demand and managing resources.	Identify people at risk of ending up in hospital in the next 6 months.	A predictive model to forecast when someone is at risk of ending up in hospital and producing risk scores.	8
	Predict those not receiving care services and who may require it.	A classification model to predict people most at risk to need ASC services based on historical ASC data and data the borough has.	9
	Gather greater insights on when residents require and enter/ leave care.	Record level data matching into a centralised database to build understanding of the touchpoints and processes across a care.	10
	Test the impact of prospective policy interventions.	A predictive model designed to enable a user to model the impact of a policy intervention on a group of individuals.	11
	Unite care and financial assessments and actively monitor any changes.	Data analysis of financial data at speed, assessing the risk of entering care and determining the financial support needed.	12
Balancing personalisation with a consistent approach.	Personalise skills training for carers and adult social care workers.	Use existing learning and development materials, combined with a generative AI system, to design novel personalised learning tools.	13
	Recommend and personalise care plans for residents.	A database with past reports and their results linked with a LLM-powered tool that caseworkers can interact with.	14

Develop and engage the care workforce more successfully.	App or user interface based solution that is personalised and communicative with the workforce, including on L&D.	15
Provide more feedback and regular updates to residents on their service.	Automated customer service solution ensuring an automated follow-up process with end-to-end customer service.	16
Streamline and simplify the process for the resource allocation system	Statistical matching of documents to collate patients' case histories to understand similar previous allocations.	17

03.2 Prioritisation methodology

Once the above opportunities were collated, they were assessed by both Faculty and borough stakeholders within the service areas according to a defined prioritisation framework. They were scored across impact and value by borough participants, and on technical feasibility by Faculty's technical team. The scores used a scale, with 1 = low impact; 2 = medium impact; 3 = high impact. The prioritisation scored according to the following criteria:

Impact and Value Scoring

01

- Measurable improvement to customer/ user experience
- Increases speed of process or reduces human effort required
- Potential to be scalable to other processes or service areas
- Level of effort required to implement and how quickly benefits could be realised

Feasibility Scoring

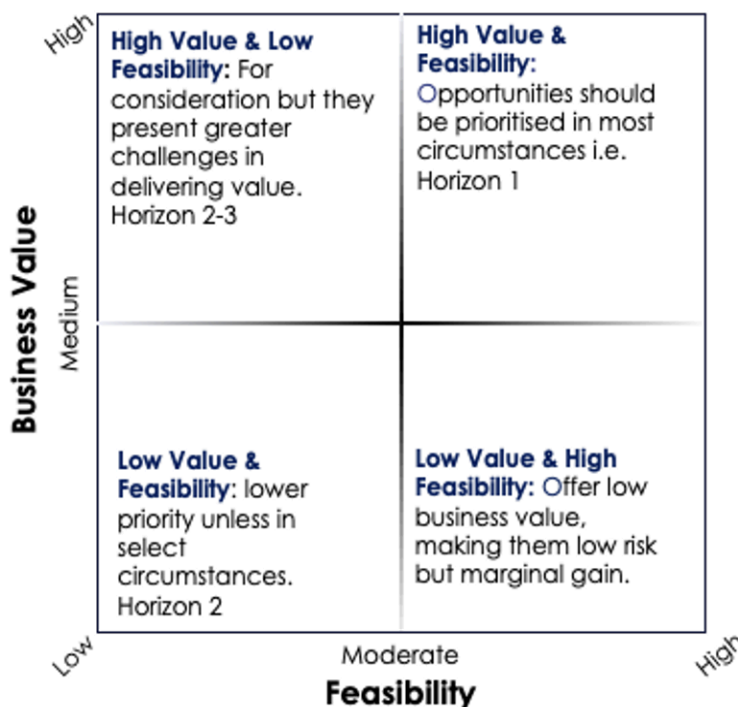
02

- Resource requirement (technical skills and capacity required)
- Complexity of solution (the amount of development required to access the functionality)

The feasibility scoring criteria did not include full consideration of data and integration complexity or complete risk assessments as these were too contextually specific to different councils given different operational models and technology systems. Local authorities however should conduct this analysis to ensure opportunities are sufficiently assessed prior to deployment. Please include this as part of feasibility analysis:

- Integration complexity (process feasibility and data required to deliver the opportunity)
- Risk (how ready the organisation or services sector is to have AI augment processes)

Faculty then mapped the most viable AI opportunities according to their scores. We then took the top 6 opportunities from this mapping into technical planning.



We recommend using a similar prioritisation framework when developing any AI opportunities within your local authority. It is crucial to ground opportunities in specific user needs in order to ensure your AI opportunities deliver tangible results. Regular review of impact assessments, like a DPIA or EIA, will be part of this ongoing assessment, as you seek to identify whether the expected outcomes and benefits are being achieved.

03.3 Prioritisation results and shortlisted opportunities

This section describes six specific future opportunities where London local authorities could use AI to help achieve their objectives in adult social care. Select London boroughs were asked to quantitatively assess the longlist according to the above prioritisation framework, scoring each opportunity for their service user and operational impact, wider business impact, and technical feasibility.

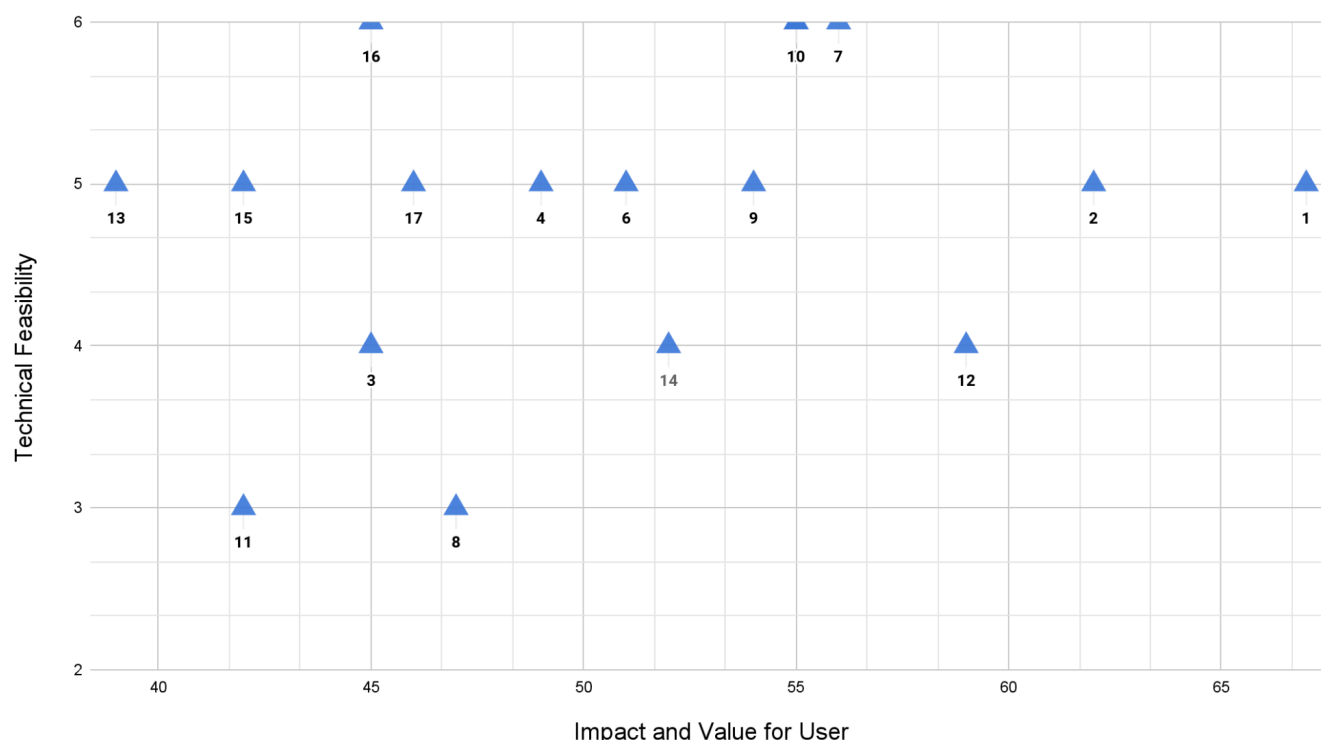


Table 2. Graph depicting the overall scores for the longlist of opportunities. The numbers by each triangle correspond to the opportunity ID as detailed in the longlist opportunity table.

Results showed that the most short-term / ‘quick-win’ opportunities received the highest scores. It is likely that these opportunities were most favourable due to the needs for cost-saving in the short-term and the wider socio-economic factors that have placed a strain on the delivery of adult social care. We note that this research study was non-exhaustive or fully representative of the sector, so opportunities may have been missed over the course of user interviews and other councils may prioritise these differently. We would like to caution that there are limitations in only pulling out six opportunities, while many of the others in the longlist could be more applicable to some boroughs. Faculty, and LOTI also conducted a level of post-user scoring analysis when finalising the below list.

These opportunities have not been assessed against data protection or equalities legislation and they may need to change as you consider the risks and benefits, and review against your local context, ambitions, and processes.

It is important to approach these opportunities within a time frame and understand those that can be classed as ‘quick wins’ or long term strategic opportunities. Although the rollout of any technology opportunity would be incremental, with numerous phases of development, iteration and deployment, the scale of this would vary depending on the nature of the opportunity. To maintain the integrity of the scoring methodology we have outlined the opportunities as 6 distinct ideas. However, overlaps do exist and if taken forward into product builds, some of these opportunities could be combined as foundational platforms. The immediate next steps and type of opportunities are outlined below.

Opportunity	Quick win or long term opportunity?	Immediate next steps
Automating the transcription of meeting notes [ID 1]	Quick win	1. Data discovery: Identify good examples of documents to train transcription on and practice on synthetic data. 2. User research and design: Work alongside care workers to develop solution with optimum user interface.
Converting existing documentation into learning disability formats [ID 2]	Quick win	1. Data discovery: Identify good examples of documents in easy read formats. 2. Identify a team: Identify a team within adult social care services that has the capacity to partake in a pilot.
Matching adult social care data to gather insights for decision making [ID 10]	Longer term	1. Database: Building out a database of the relevant processes and workflows to be implemented. Information governance agreement to be put in place in order to receive levels of data sharing. 2. User research: Work with the care teams to build out processes and codify them to begin model training.
Triaging and prioritising requests to deal with demand across the front door [ID 6]	Quick win	1. User research: Work with case workers to identify exactly what would be impactful for this opportunity. 2. Database: Building out a database of the relevant processes and workflows to be implemented.
Improve and encourage self service for direct payments [ID 7]	Longer term	1. Database: Unite and gather a database of all the resources for direct payments available. 2. User research: Work with the teams to ensure service delivery is user-centric and accessible.
Predictive forecasting to allow for early intervention in care [ID 9]	Longer term	1. Database: Unite and gather historic data and disparate data sources helpful for insights. 2. User research: Work with expert care workers to define a risk threshold and codify patterns that could lead to risk.
Interactive tool for ASC care providers for case management and personalised care	Longer term	1. Identify a team: Identify a team within adult social care services that has the capacity to partake in a pilot. 2. User research: Work with the allocation team to build out processes and codify them to begin model training.

03.4 Opportunities in detail

Opportunity 1. Automating the transcription of meeting notes between care workers and patients

<p>User problem</p>	<p>Care workers spend significant amounts of time writing up their notes and form-filling, when much of this time could be better spent on the ground delivering care and seeing patients. One user interviewed said: “so the here and now is about increasing productivity because then people aren't feeling overworked.”</p>
<p>Opportunity summary</p>	<p>A generative AI solution, using a Large Language Model (LLM), using audio-text to transcribe recorded meetings between care worker and resident, live during the meeting. The care worker would then only need to spend a few minutes validating the content of the transcription after the meeting. The LLM can be trained to draw out suggestions, key actions, summaries, trend analysis and discussion points to inform further meetings.</p>
<p>Practical scenario</p>	<p>A social care worker is required to report and write up every meeting or discussion had with a care patient. Statutory reporting requirements and daily form-filling off the back of regular meetings take up a significant amount of time and this time would be better used by providing care on the ground. With a generative AI solution, a care worker would only need to record the conversation on their digital device and then the tailored LLM would transcribe the meeting. It can be tuned to produce summaries, recommendations and prompts for any statutory information that may have not been captured by the recording. This would result in significant time saved on form-filling.</p>
<p>Technical planning</p>	<p>A custom application that integrates a commercially available audio-text transcription tool. This allows text to be processed and transcribed in real-time, with the opportunity for the user to validate words and make corrections. The user interface would display LLM-derived insights. The LLM can produce these insights after being fine-tuned with examples of how to best summarise the text, pull out actions, suggestions, trend analysis and discussion points to inform future meetings, such as key health indicators to monitor. The LLM could be extended to be integrated with the relevant adult social care system, via an API.</p>
<p>Data requirements</p>	<ol style="list-style-type: none"> 1. Audio of the meetings to be captured. 2. Templates of information required for statutory reporting to train the model to pull out relevant and correct information or prompt for information that may have been missed. 3. Examples of high-quality insights would be required for model training.
<p>Deployment Considerations</p>	<ul style="list-style-type: none"> → Extensive user testing prior to commencing build is crucial in order to overcome creating any form of barrier between care worker and patient and to ensure the solution works fully for both parties. → To further ensure successful deployment, a user friendly interface will need to be created and sufficient training in the technology for the care worker developed. → The solution would be processing a high volume of the personal data of vulnerable individuals and their families. You will need to undertake a DPIA and clearly explain the use of the recordings and transcriptions to data subjects. → A care worker must remain ‘in the loop’ and ensure the summaries or transcriptions are correct, making edits as appropriate. → Strict access controls must limit who can view and manage the transcriptions as part of the client’s social care file.

Opportunity 2. Using generative AI to convert existing, and generating novel, adult social care documents in learning disability formats

User problem	Social care workers spend significant amounts of time and resources converting important documents into easy read, learning disability formats.
Opportunity summary	A generative AI solution, using a Large Language Model (LLM) to understand the format of the documents and what we are converting them into. The LLM can be tuned with previous examples of learning disability format documents and then convert existing documentation or produce novel documentation following the user entering a prompt into an interface.
Practical scenario	A social care worker is required to produce a document for sharing with a prospective service user that outlines the outcomes of a recent statutory care assessment. Normally, they would have to piece together the relevant material, which includes significant legal information and terminology, before then spending time to reproduce it in an easy read format according to guidelines. ⁴ With a generative AI solution, a social care worker would only need to input the relevant material that has been gathered (for example, the care assessment outcomes and next steps) via a prompt and then the tailored LLM produces the documentation in the required format, including both large text and visuals. The care worker could assess the output and continue prompting if necessary until the document was in a suitable format. This would result in significant time savings on a case level.
Technical planning	A custom web-based tool that leverages an LLM. This involves two steps: 1 - Language simplification: Producing the easy-to-read text with simplified information and terminology. 2 - Accessible formatting: producing the easy-to-read document formatting. To produce the easy-to-read simplified text, the LLM will be trained on previous examples of converting language into plain and concise language. It can also be provided with the necessary specific guidelines on how to do so. To produce the accessible formatting, a closed list of accessible-formatted documents will allow building custom software. This software is then integrated and “wraps around” the LLM, which populates the templates with the novel text and images. From the user’s perspective, they would simply need to select which document format they want to produce, alongside the text and other information.
Data requirements	<ol style="list-style-type: none"> 1. Previous examples and templates of documents in easy read formats 2. The original text/documents and their conversion into text in easy-to-read format
Deployment considerations	<ul style="list-style-type: none"> → The solution will have less risk if the process and outputs omit personal data. If using personal data, service users must be informed about how AI and their personal data is being used, so that they are empowered to challenge and engage with the recommendations → Need to ensure that AI-generated documents and materials meet accessibility standards. This can be done by regularly testing AI outputs against the standards and providing relevant training to ensure issues are identified and resolved. → As part of the development process, it is necessary to ensure that the system consistently outputs material that is correct to an end user or it will be untrustworthy and ensure there is a human-centric approach to the deployment.

⁴ <https://www.gov.uk/government/publications/inclusive-communication/accessible-communication-formats>

Opportunity 3. Matching adult social care data to gather insights and streamline processes and decision making

<p>User problem</p>	<p>Social care workers and boroughs often require service users to submit information multiple times. This can result in errors and gaps in information, making it more difficult to gather insights and make decisions. One user interviewed said: “there is very little on demand data. You ask for it, and a month later you'll get it. It's a snapshot of a point in time rather than something that continues to update.”</p>
<p>Opportunity summary</p>	<p>A probabilistic record level data matching solution, feeding into a centralised database that would report on ways in which service users have interacted with different touch points across the service. Understanding this information could enable faster provision of reablement services, reduce waiting times and allow for faster journeys through relevant pathways across care provision. It would provide insights for decision makers on the touch points across a care journey for aggregate groups.</p>
<p>Practical scenario</p>	<p>A case worker is assessing an application of a new ASC patient. They enter basic details about the patient into a case management system. The system is able to find relevant data about that patient even if they've never received ASC, such as health records, housing adaptations or benefits records. This allows the care worker to gather a full picture of the many transitions between healthcare and care taken by an individual without the burden being on the care worker and the patient to provide this information. The care worker can save time and make assessments more efficiently, and the patient can receive care faster.</p>
<p>Technical planning</p>	<p>A custom solution that leverages Machine Learning (ML) data matching models. Multiple siloed data sources should first be collected and handled appropriately. A pre-processing pipeline is then applied to each data source to produce standardised field names and field entry formats. A group of important features common to all datasets will then be used to determine the likelihood of a matching record across the datasets. Using the selected features (such as First Name, Last Name, DoB, Phone Number, Email), statistical matching methods will be applied to compare and find the match probabilities for each pair of entries across the datasets. Each pair is then determined to be a match or not based on a selected threshold. This creates a centralised database where each individual has a unified record, allowing patient journeys to be appropriately traced. An application would also need to be developed to host this tool and support queries to the database.</p>
<p>Data requirements</p>	<p>From a variety of sources (councils, care providers), access to both private and open source social care patient data, such as: 1 - Healthcare data; 2 - Care data. Challenges surrounding healthcare data access should be carefully considered as part of this opportunity and the timelines needed to deliver it. Additionally, labelled training data of examples that have already been correctly matched should be provided .</p>
<p>Deployment considerations</p>	<ul style="list-style-type: none"> → This is complex and higher risk data sharing and, following a DPIA, agreements and processes must be established to ensure compliance with data protection legislation. Each party must agree how the data matching system works, including how matches are determined, and be confident explaining and challenging outputs. → Robust data security is required, with access controls to limit who can view and manage the data to ensure security → Ensure transparency for service users with full 'explainability' of the AI → Human oversight is crucial to review and validate critical matches, particularly in cases where errors could have significant risks or consequences in care provision.

Opportunity 4. Triageing and prioritising requests to deal with demand across the front door

User problem	Often, the work to triage and process claims is mostly manual and uniform, regardless of the nature of the case and the level of harm or complexity. This has led to significant backlogs due to the volume of requests received.
Opportunity summary	A classification model based on text data would help place queries and interactions in different groups, based on the type of care being provided and the severity of the cases. This can be given to the case officer in a user-friendly dashboard where they can see the grouped queries, and have an LLM provide summaries to triage and allocate resources.
Practical scenario	Traditional and generative AI can work together to help improve the throughput of cases in a system, helping caseworkers spend more time on where their input is most useful, reducing or even eliminating routine data retrieval across different systems. The triaging tool would also optimise the flow of cases through a system, helping identify whether cases have been sent to the wrong service department, where they are routine, or where they are high impact and should be prioritised and given more time to aid their conclusion. Generative AI can additionally help create quick summaries of the case. Other AI tools can help reduce accidental variation in recommended outcomes - bringing together material from similar cases as a baseline suggestion for the type of interventions that could be offered.
Technical planning	<p>This solution would require building a tool that integrates with a casework management system. Firstly, the system completes entity recognition tasks within the incoming material - including the verified name of resident, wider background to the individual, such as a safeguarding risk, and then stripping out all the non-essential personal identifying information. This could use Optical Character Recognition to extract information from unstructured text in PDFs and email data or where records are held in paper files.</p> <p>Then a classification tool which categorises individuals according to a "type of case" or "priority rating" (framework to be validated) to help caseworkers effectively respond to the most pressing cases. This would use language-based summarisation and analysis tools, including LLMs. The classification leads to a scenario where the most complex cases can be sent to more experienced staff. Then a triaging of cases would occur, algorithmically prioritised in accordance with a prioritisation framework. This means that the case officer now no longer has to manually get through high volumes of work at the front door.</p>
Data requirements	Past and historic cases and how they were handled. A case classification and case prioritisation or risk framework. Access to borough databases to see historic cases
Deployment considerations	<ul style="list-style-type: none"> → Mitigations surrounding potential for the models to make mistakes, such as deprioritising someone who needed urgent support, should include explainability and the case worker to always be in the loop with final decision making. The solution should only ever provide recommendations and a risk rating. → Integration with the case working system would need to be implemented via APIs or new systems in place overall to ensure the solution does not add further burdens. → The final system should be designed iteratively with the user to ensure sufficient integration. It should be customisable to different workflows and users. → A human review process must be implemented, for example, to review any automatically flagged safeguarding concerns, as mistakes caused by automation could lead to serious risks in care provision. → Regular review of outputs and identified issues must take place, to mitigate issues, protect service users, and achieve compliance with data protection and equalities responsibilities.

Opportunity 5. Improve and encourage self service for direct payments via a search query tool

<p>User problem</p>	<p>Borough officers and care workers in ASC carry a lot of the administrative burden for direct payments and liaising between providers and those receiving care in time-consuming and resource-intensive ways. A user interviewed said: “demand increases but what we're seeing is not the number of people but the level of need increasing.”</p>
<p>Opportunity summary</p>	<p>A query tool that allows users to input a search term and be returned with the most relevant choice for care provision for their case. The opportunity would consist of a systems architecture supported by a semantic database and relational database to store all the resources available for direct payments, as well as a front end user interface.</p>
<p>Practical scenario</p>	<p>A user would connect to the web application on the borough’s website or digital interface for adult social care provisions. They then submit a query for their care needs into a search tool, which is then matched against guidance notes or resources across the service provisions. This information is then returned and displayed to the user with all the relevant links easily accessible and tailored to the query. This would help both staff and residents access data using natural language, improving access through reducing technical understanding required to search. LLMs can generate helpful content (text, images, videos) to provide better descriptions. A further stage of this opportunity could build out a chatbot to connect the user with the services they need and direct them to the right place. It could offer information on various services offered by the council, direct to the right webpage, give contact details, etc as a first port of call, before then turning to the query interface.</p>
<p>Technical planning</p>	<p>This would require building an application that hosts a custom-built search query tool or chatbot powered by a combination of Natural Language Processing methods. A user connects to the web application and submits a query. This utilises semantic search and hierarchical retrieval that searches the database and matches up queries with the resources within the database. This aims to improve the workflow of the user by saving them time in their search. Using LLMs in a search interface could be used to create a chatbot to support queries and interactions with users as well as manage the significant administrative burden faced by the borough currently. This solution would enable people to self-serve and find the right information and could be integrated within the council’s website.</p>
<p>Data requirements</p>	<p>Access to a database of self service resources for direct payments and a categorisation for them according to cost, and what service needs they may cater to.</p>
<p>Deployment considerations</p>	<ul style="list-style-type: none"> → Due to the potential vulnerability of some users, this solution would require extensive user testing and internal piloting before being finally rolled out to ensure the tool doesn’t retrieve false information. Include disclaimers where needed, especially for medical or legal information. → Implement accessibility standards so it can be used by all, such as by conducting user testing with a diverse group of users. Ensure options for text, voice, and screen reader interactions. However, recognise that this solution will not fit all service users. → Implement strict access controls, user authentication and sufficient protection of user data. → Regularly update the knowledge database with accurate, up-to-date information. Ensure there are mechanisms in place for users to report incorrect information, so as to ensure the tool is performant. → Implement protocols for handling sensitive information and safeguarding or critical situations. For example, train the query tool to recognise and escalate queries to human case workers or emergency services when there is a safeguarding concern.

Opportunity 6. Predictive forecasting to allow for early intervention in care

User problem	The costs of healthcare, rising demand and a more complex multi-morbid population is straining the capacity of healthcare systems. One user interviewed said: “there is a big gap in being able to predict further into the future and having that information might make us more strategic and long-term thinking.”
Opportunity summary	Predictive technology to indicate the likelihood that a service user will be hospitalised within a specific time frame, allowing the provision of care to prevent avoidable hospitalisations. This would utilise a machine learning model to identify users and then generate a prioritised list of patients in need of a clinical review, with risk scores to inform triaging decisions.
Practical scenario	When logging into a case management system, care workers can immediately see a list of patients that are likely to be hospitalised within the next 6 months and can validate and address these patients as a priority. In the first iteration of this opportunity, the model would be trialled against historic data in order to be trained, and final iterations would be deployed live on the ground, allowing for monitoring and quick decision making. Direct reporting would come from the residents, their family, care providers and would be matched up with analysis of carer reports. This would allow for quantitative analysis of metrics of health matched with qualitative work from healthcare providers in order to produce a risk metric. This risk rating would be used by the care officer to triage cases to follow-up with preventative care. The care worker would always validate and make the final decision, but the model would serve to highlight risk and explain reasoning.
Technical planning	A risk identification tool using machine learning to allow for early intervention in care and demand forecasting for hospitalisation and workloads. This would require assessing and gathering the factors that may put a patient more at risk of hospitalisation and categorising these according to risk level. This would be incorporated with data regarding residents, such as mobility, sleep, physical health. A machine learning model would be trained with historic data to develop and validate a hospitalisation risk prediction algorithm. Model performance would also compare against human predictions of past records by providing care workers with the same data sources provided to the models and comparing the accuracy of both.
Data requirements	Access to both private and open source data, healthcare data, care data, as well as a wealth of past cases. Data could include carer reports, service user demographics, and other home care data, eg: mobility, sleep pattern, mood, physical health, prior hospitalisations and number of care visits in a time period. Direct reporting from the end user as well as care worker would also be used, e.g. heart rate or other carettech solutions.
Deployment considerations	<ul style="list-style-type: none"> → This is complex and higher risk data sharing and, following a DPIA, agreements and processes must be established to ensure compliance with data protection legislation. Each party must agree how the data matching system works, including how matches are determined, and be confident explaining and challenging outputs. → Ensure that any decision making is always done by a human and any risk ratings are validated by the care worker so risks are not missed by automation. This can be supported by developing robust explainability for predictions. Ensure to maintain transparency about the tool's capabilities and limitations. → Implement data validation and cleaning processes to ensure data quality and auditing. Develop APIs and integration with existing health information systems. → Use diverse and representative datasets for training the model to minimise bias. → Pilot the solution on historic data before any live piloting to not rollout a faulty tool. → Provide comprehensive training programs and offer ongoing technical support to assist decision makers and carers, to ensure take-up and use.

03.4 Long-term strategic AI opportunity

This section describes a future opportunity where London local authorities could use AI to help achieve their objectives in adult social care. This opportunity has been shortlisted from faculty desk research, internal planning and discussions with senior stakeholders within LOTI and London Councils.

Opportunity 7: Interactive dashboard with individual patient-level information and key insights to help ASC care providers with case management and providing personalised care

User problem	ASC case workers are often overwhelmed with cases, and as such do not have the time to get a full grasp of a patient's history, with this information being scattered across a range of sources. This is a bottleneck and can hinder the quality of care given to patients.
Opportunity summary	Easier access to information and key insights via an interactive dashboard can improve case management and caregiving. A tool can be built to collect data from disparate sources, clean the data, statistically match entries to form individual-level records detailing case information and patient journey history, all presented on an interactive dashboard that allows the care worker to better understand their patients. By collecting the data into a unified data lake, the dashboard can also provide similarity scores between cases to help better understand the type of care plans given to people with similar issues.
Practical scenario	A case worker is scheduled for a quick visit with Angela, an ASC patient with a physical disability and multiple health issues. The case worker has several other visits scheduled for the day, and has found it difficult to keep track of all the patients and their case histories and how they can best provide high quality personalised care. The case worker quickly puts in Angela's name on their device, and receives relevant information and key insights on Angela's case aside from her main disability: her other health issues, her main complaints, previous case workers' most important notes, the frequency of visits Angela is receiving, etc. If prompted, the dashboard also provides the case worker with cases similar to Angela's and the care plan given to them, helping the care worker provide effective personalised care.
Technical planning	This is a multi-faceted and holistic technical solution which requires the collection of data from multiple sources, developing filtering processes for each dataset, developing a statistical matching algorithm to create records for all individuals, building and designing a dashboard using open source tools, integrating an LLM to provide text-based summaries where needed, and an algorithm for the similarity matching of different cases.
Data requirements	This would require data from multiple sources relating to social care, healthcare, and household information, with a main focus on social care data (case notes, plans, and histories).
Deployment considerations	<ul style="list-style-type: none"> → This is complex and higher risk data sharing and, following a DPIA, agreements and processes must be established to ensure compliance with data protection legislation. Each party must agree how the data matching system works, including how matches are determined, and be confident explaining and challenging outputs. → Provide comprehensive training programmes and offer ongoing technical support to assist decision makers and carers. Create an intuitive and user-friendly interface. → Ensure that any decision making is always done by a human and any risk ratings are validated by the care worker. This can be supported by developing the solution with robust explainability features for predictions. Ensure to maintain transparency about the tool's capabilities and limitations.

04 Recommendations and Considerations

This section summarises and draws out the key themes across the deployment considerations of all the opportunities. It provides advice on steps that could be taken to maximise the chances of successful adoption. This includes a summary of the immediate and downstream legal and ethical considerations, for example the potential for bias, interpretability of the AI's outputs, accessibility concerns, and public trust in use of AI.

04.1 Summary of deployment considerations

Consideration	Detail	Mitigation
Suitability of the tool	AI may be seen as the only solution when others may be more suitable.	Preferred outcomes and protection of individuals should drive the decisions to use AI. DPIAs and EIAs should be completed to identify benefits and risks.
Accuracy and reliability	With AI solutions, especially a LLM-based solution for example, there is a risk that the LLM hallucinates and reproduces content that doesn't exist or delivers inaccurate information.	Implement validation mechanisms to cross-check outputs with existing data. For example, we recommend always referencing sources, adding explainability and ensuring a human is always able to validate the final results. Use diverse and representative datasets for training the model to minimise bias. Regularly test the model for accuracy and iterate as appropriate.
Unauthorised data access and data protection controls	The system might expose personal data to unauthorised individuals due to improper access controls.	Any solution must comply with data protection legislation. Enforce role-based access controls (RBAC), aligned to the existing security policies. Sensors and monitors would need to be assured from a cyber security perspective to protect service user data. Robust data encryption should be ensured to protect personal data.
Scalability challenges	Solutions could struggle to handle increased loads during peak times, leading to slow response times or failures.	Optimise the solution for scalability (one of the benefits of a custom approach vs. procuring an off-the-shelf solution). We also recommend using cloud-based infrastructure.
Resident distrust	Residents may distrust AI involvement in handling their services, fearing a lack of personal attention or potential errors.	Communicate transparently with residents about how AI is used and its benefits. Consider options for residents to opt in for human handling if they would prefer. Co-design / user centred design to ensure solutions are built with residents.
Skills and training required	Solutions may not be successfully adopted if they are not made with extensive user testing and development by the end user.	Provide comprehensive training programs and offer ongoing technical support. Create an intuitive and user-friendly interface. Extensive user testing prior to deployment is crucial. Staff must feel confident to challenge the AI.
Human in the loop	No decision making should be made by the technology as there and humans should always be the final decision makers with technology aiding their final decisions.	Ensure that any decision making is always done by a human and any risk ratings are validated by the service teams. This can be supported by developing the solution with robust explainability features for predictions. Ensure to maintain transparency about the tool's capabilities and limitations.

Accessibility	Any solutions should be made as accessible as possible to the vast majority of those receiving housing services.	Regularly test AI outputs against accessibility standards and provide relevant training to ensure standards are identified and resolved. Conduct user testing with a diverse group of users. Ensure options for text, voice, and screen reader interactions.
----------------------	--	--

04.2 End-to-end approach to AI based service delivery

AI opportunities must be pursued in a holistic end-to-end manner, considering factors beyond the technology, such as organisational readiness, integration into existing infrastructure or workflows and providing the right support to users. We have included an indicative end-to-end delivery framework below to aid in the development of and next steps of any AI opportunities.

Roadmap		Solutions	AI Readiness		People
Plan	Discover	Build	Assess & Plan	Integrate	Upskill
<p>Develop target operating model</p> <p>Assess existing operating models, including team structures and roles, to document user journeys and pain points.</p> <p>Identify target operating model to rapidly adopt and build AI capability</p>	<p>Identify value potential and develop AI roadmap</p> <p>Identify and prioritise high-impact use cases to augment decision-making capability, and operationalise new use case discovery processes.</p> <p>Set out clear execution roadmaps for delivering your AI vision.</p>	<p>Bespoke tools for better decisions</p> <p>Co-develop bespoke solutions founded on robust user research and service needs.</p> <p>End-to-end delivery for improved business decision-making.</p> <p>Build and develop proof of concept and minimum viable product with extensive user research.</p>	<p>Gauge AI readiness and plan for execution</p> <p>Review, validation and iteration of your existing tools, systems, & capability. Identify where value can be delivered fast and with value.</p> <p>Identification of additional functionality, tools and features to improve existing methodologies.</p>	<p>Integrate solutions into infrastructure decision-support</p> <p>End-to-end integration, tailored to your decision-making processes and systems.</p> <p>Consider whether bespoke solutions or off-the-shelf products are most appropriate.</p>	<p>Maximise engagement with your AI vision</p> <p>Upskill technical, non-technical, and service users via classroom or hands-on training on live projects.</p> <p>Training tailored to the audience and geared to maximise engagement and value creation</p>

AI Opportunity Delivery Framework

Table 3. Table outlining a potential AI Opportunity framework for delivery

04.3 Overarching Recommendations

This section pulls together our final recommendations for Local Authorities when identifying, developing and deploying AI Opportunities across their service areas.

<p>Solve user problems, don't start with the tech that's currently in the hype cycle.</p>	<p>It is important to consider AI opportunities in the context of real problems that need new in kind solutions. Start by looking at problems that exist despite your latest software upgrades, problems that are costly to resident outcomes and operational efficiency. No matter how shiny the AI, if a problem isn't solved it's money wasted.</p>
<p>Start small, do something, learn and iterate.</p>	<p>The opportunities and risks of AI are best learned by doing. While there is a place for setting guidelines, strategies and putting governance in place, leaders must empower delivery teams to experiment where the value and limitations lie. Put a squad together, pick a problem, talk to users, ideate on AI solutions and then test.</p>
<p>Use AI as a foot in the door with business teams.</p>	<p>Business leaders want to be at the forefront of innovation, and service leaders can steer this into practical applications of AI. Local authorities should start developing business cases by quantifying time and money spent by workers on tasks that can easily be improved by AI, demonstrating success to show the art of the possible.</p>
<p>Identify where data is accessible and usable, and start experimenting and learning.</p>	<p>Good quality data is the backbone of any successful AI opportunity. The first step should be identifying areas that are currently data rich in the immediate term to conduct data exploration and learn. Local authorities should also prioritise increasing data quality. Poor quality data will lead to inaccurate models, and biased data will have serious risks.</p>
<p>Become better informed, more demanding buyers of technology.</p>	<p>For real change to happen, we must demand more from our technology suppliers. For example, Source code should be open for the wider local government community to access and build on, data should be interoperable, roadmaps should be transparent, other local authorities should be able to buy existing solutions at minimal cost, and Local authorities should get involved in beta testing new tech.</p>
<p>Don't make AI a bolt on. Embed AI into service delivery now.</p>	<p>When an AI opportunity is bolted onto an already existing process without the relevant service design, or user research and product development, it can easily fall by the wayside and be a further added burden. By integrating AI into service delivery, local authorities will be able to successfully deploy and scale this technology.</p>
<p>Expand your workforce's technical skills across service delivery.</p>	<p>There are numerous opportunities for technical development, such as data science apprenticeships, fellowships and bootcamps and both service delivery leads, front line delivery and digital teams should upskill themselves. This will integrate digital capabilities across local authorities and service delivery.</p>
<p>Invest in improving the quality of your data - it's a no regret move.</p>	<p>While AI capability is advancing at a faster speed than ever before, usable solutions still require good quality data - i.e. reliable and trustworthy, consistent, up-to-date, classified, clean and comprehensive. Investing in improving in gathering data and improving the quality of your existing data will give you a head start and unlock adoption of new technologies.</p>
<p>Don't skip discovery and formal user research phases.</p>	<p>The best technology is informed by robust user research that surfaces real problems users are facing. Whether the solution is resident facing, or back office, having face-to-face, inquisitive conversations with those who will ultimately use the technology and those who will be funding it, is critical. Teams that skip this step or do it superficially almost always end up building the wrong thing.</p>