Council Chatbots Project Summary Report

Summary of key findings from research into chatbots for councils

Contents

1. Introduction

1.1. Quick Links

This document is a summary of all project activities and findings which are the result of a wider discovery research programme in collaboration with 13 English councils.

All key project deliverables outline our findings in detail - please refer to our individual reports for more focussed insights and information:

- ROI Analysis and Market Summary | April 2019 | Council Chatbots | Torchbox
- Technology Landscape Review | April 2019 | Council Chatbots | Torchbox
- Example Shared Architecture | April 2019 | Council Chatbots | Torchbox
- User Research Summary Report | April 2019 | Council Chatbots | Torchbox
- Case Studies | April 2019 | Council Chatbots | Torchbox

A blog has been published by the project lead, Neil Lawrence of Oxford City Council. To read articles covering each stage of the project please visit the blog:

- https://localdigitalchatbots.github.io

1.2.   The Team

Torchbox assigned an experienced multidisciplinary, agile team. Each member of the team played an important role in this project:

Tom Williams

Business Strategist

Led the project, conducting stakeholder interviews, analysing council data, and developing the ROI analysis and business case reports.

Luiza Frederico

UX Consultant

Led the user research training and user research activities, conducting user interviews, analysing and synthesising findings, and providing user experience recommendations.

Kyle Magee

UX Researcher

Conducted user interviews and analysed findings.

Stephen Broadhurst

Conversational AI Consultant

Provided expert guidance and input on chatbot technology platforms, and conducted the technology and platform analysis.

Sophie Ramm

Delivery manager

Managed ceremonies (standups, sprint planning, show and tells etc.), scheduled and reported on overall progress, time and budget.

1.3. Background

In early 2019, a group of councils led by Oxford City Council partnered with Torchbox to conduct research into chatbots and conversational AI. The expressed goal of the project was to explore opportunities of using such technologies to better serve customers and to reduce costs faced by councils in provisioning particular services.

Councils were allocated to a particular service area as follows:

Planning

> Oxford

> Hertsmere

> Cheltenham

Waste & Recycling

> Rotherham

> Doncaster

> Bolsover / North East Derbyshire

Revenues & Benefits

> Redditch & Bromsgrove

> Preston

> Adur & Worthing

Highways

> Surrey

The participating councils and research areas

From the project's inception, a strong emphasis was placed on enabling councils to better understand user needs, while fostering a culture of collaboration across councils. In order to meet this need, Torchbox provided a user research training framework and in-person training to support councils' own user research efforts, to be applied both within this project and for future user research as required.

We carried out user and stakeholder research across the four selected research themes and leading councils to gain an in-depth understanding of how users engage with each respective service. We uncovered insights, revealed opportunities and made tailored recommendations.

In addition to this, we carried out a technology and platform landscape analysis to gain a detailed understanding of the chatbot and AI market and providers. We

also established a methodology for assessing potential return on investment[1], which can be used by local councils to evaluate the value and relevance of chatbot applications for their services.

An overarching goal of this project has been to encourage collaboration and shared learning across the councils. Local Government has often approached adopting digital tools through individualism, with councils adopting their own solutions. This approach leads to fragmentation and duplication of efforts. This report seeks to demonstrate the benefits of both shared research across councils and shared investment in tech solutions.

1.4. Kick-off

On 18th February 2019, the project team met in Birmingham for a full day project kick-off session. The collaborative nature of this project highlighted the importance of aligning our goals and objectives so that all organisations were on the same page as to what this project was looking to deliver and why. Furthermore, we ultimately wanted to develop a shared understanding of how we could work together to get the most value out of the project.

The key questions councils were looking to be resolved were:

- Can we use chatbots and AI to solve service delivery problems?
- How do we focus on user needs?
- Is there a robust business case for using this technology?
- How do we get started?

Working Culture

The councils hoped that this project would allow them to deliver something worthwhile whilst working collaboratively, learning and making professional

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[1] See the separate document titled Return on Investment Analysis and Market Summary

partnerships.

The councils feared that current workloads, tight timescales, inexperience with user research and geographical challenges could hinder them from achieving the project's full potential.

A set of commitments were made and agreed to, setting the standard expectation and modus-operandi for this project. This included:

- Sharing ideas and information
- Keeping in touch regularly (via Slack, Stand-ups etc)
- Working in an Agile way
- Challenging the norms
- Demonstrating the benefits of the project
- Publishing by default
- Blogging about the project

Common Objectives

We started by looking at council objectives which could be applied to this project. The most common shared objectives were:

- To develop more efficient processes and services
- To develop a good experience which is inclusive to all
- To embrace technology to deliver services

We then looked at the project objectives - what the councils hoped to specifically achieve through this project. The most common project objectives were:

- To understand how chatbots / AI may work for councils
- To provide a common research base on chatbots / AI
- To have shared objectives and resources

- To get residents closer to 24/7 access to council services

Finally, we looked at the councils' definitions of success for this project. The most commonly shared ones were:

- To have business / use cases where chatbots do and don't work well
- To have established an informed starting point based on citizen need
- To have delivered high-quality user research
- To know the research is representative of council customers and be confident in its results

Pre-mortem

We facilitated an exercise which aimed to identify risk and success factors from an end-of-project perspective. This helped to emphasise the points worth avoiding or investing in to get the best project results.

The key perceived risks were:

- Commitment/engagement/buy-in, both internal and external
- Time and tight deadlines
- Politics beyond our control
- How we work together as a project
- Consistency in our work

The key perceived success factors were:

- Communication and participation (internally consistent across councils)
- Commitment
- Agreed ways of working

Introducing the project schedule and methodology

This project had tight timescales which all councils had to work to and fit around their ongoing work. We shared the structure and methodology during the

kick-off to identify and agree on the best weeks to focus on each theme.

1.5.   Methodology

The project span covered kick off, training and template resource prepping, user research training, four research sprints and finally, reporting and final delivery.

Foundations			Research				Synthesis	
18/02/19	25/02/19	04/03/19	11/03/19	18/03/19	25/03/19	01/04/19	08/04/19	15/04/19
Kick off	Prep	Training	Research Area 1	Research Area 2	Research Area 3	Research Area 4	Reporting	Final Report

The research was carried out in four week-long sprints, one for each research area. With multiple councils covering four areas of research, it was not feasible for all user research to be carried out by Torchbox. We, therefore, adopted the following approach:

Torchbox conducted user research with the lead council within each research area, with other participating councils conducting their own user research. Torchbox also conducted stakeholder interviews and data analysis involving all participating councils.

- **w/c 11 March 2019 - Planning**
  - Lead council: Oxford
  - Other participating councils: Hertsmere and Cheltenham
- **w/c 18 March 2019 - Waste and Recycling**
  - Lead council: NE Derbyshire
  - Other participating councils: Bolsover, Rotherham and Doncaster
- **w/c 25 March 2019 - Revenues and Benefits**
  - Lead council: Redditch and Bromsgrove
  - Other participating councils: Preston, Adur and Worthing
- **w/c 1 April 2019 - Highways**

○ Lead council: Surrey

Each week involved;

- Stakeholder interviews, analysis and synthesis
- Council data collection, analysis and synthesis
- User interviews, analysis and synthesis
- Reporting back in a 'Show and Tell' sprint stand-up

1.6. Training

Torchbox worked with local councils to deliver user research, providing an appropriate framework to collect and document findings through User Research Training. The training was delivered in two locations for representatives of each 13 participating councils. The value of the training was fourfold:

- Upskilling participants on a new skillset
- Enabling councils to facilitate and conduct their own user research for this particular project
- Allowing councils to become more self-sufficient in user research
- Saving valuable time and effort by sharing useful guides, templates and tools that can be used or adapted for future projects

It was clear from the kick-off that all involved councils wanted to gain skills and see great user research be carried out.

An introduction

For many people, the topic of user research is relatively new. The training sought to provide an introduction to user research values, methods and useful resources for those interested in learning more.

"When designing a government service, always start by learning about the people who will use it. If you don't understand who they are or what they need from your service, you can't build the right thing."

A positive culture of user research will tend to focus on continuous research, collaborative learning and insight sharing. Ensuring teams, products, services and solutions are effective, relevant and meeting user needs.

User research methods

Torchbox gave an overview of research methods but the focus of the training was on the framework we were all to adopt whilst conducting and analysing user interviews specific to this project. This included guides, templates and scripts:

- A user recruitment guide for research interviews
- A user interview script for conducting interviews
- A consent form to use with users being interviewed
- Data capture templates to assist in capturing what is important and displaying the user experience

Councils were able to conduct their own research using the tools and templates shared. Torchbox facilitated weekly show-and-tells for everyone involved to share their findings, insights and process learnings. Having a common set of templates gave us all a shared format and language in which to discuss our insights.

Approximately 20% of the total project budget directly contributed towards user research training and supporting materials that councils will be able to apply to future research projects.

1.7.   Introduction to chatbots

With chatbots and Conversational AI, the main aim should be to improve users' experiences within the context of their overall journey. A good chatbot conversation should make it quicker and easier for users to complete tasks or find information. Conversely, a poor conversation with a chatbot can lead users to abandon the chat and pick up the phone, negating any cost savings from providing the chatbot in the first place.

Any conversation with a Council is nearly always part of a longer journey. As a result, when considering chatbots, it is vital to model requirements in terms of user journeys, rather than simply in terms of technical specifications.

For each of the four service areas, we explored user needs, and specifically the reasons behind users getting in touch with the council. We based our approach around the following questions:

- What specific task is the user trying to complete?
- Why have they chosen to call rather than self-serve online?
- Could these tasks be better served by a chatbot?

We categorise reasons for making contact with councils into the following three categories:
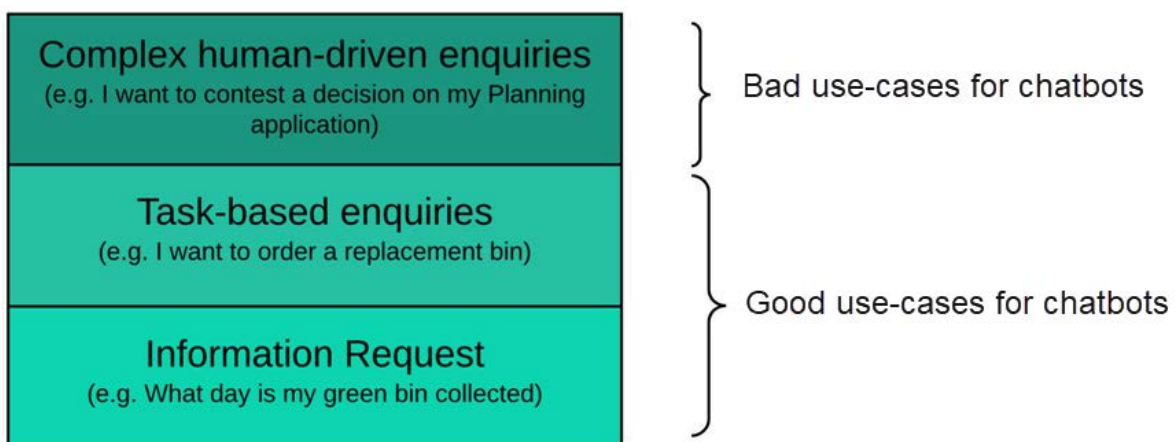
A suitable service area to consider for a chatbot would be one exhibiting a high proportion of contacts based around the bottom two tiers: simple tasks or information requests. That's because these are relatively simple information or task-based queries, which is firmly within the territory of a chatbot.

By contrast, a service area that exhibits a high number of complex enquiries (for example, by being emotional theme, complex subject area, a topic prone to subjectivity, or a matter of contention or debate) is not considered good territory for a chatbot. These complex, human-drive enquiries are preferably handled by a human.

By handling the basic information or task-based enquiries with a chatbot, human resources can be freed up to focus on those areas where human contact is necessary. This can lead to reduce wait times and a better quality of service.

It's not just call volumes within each service area that influence the suitability of implementing a chatbot; the reasons why people make contact and the level of complexity demonstrated therein are also key considerations any feasibility study[2] into offering chatbots to replace or supplement council call centres.

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[2] These considerations are best exemplified by the analysis of reasons people make contact with councils, which is contained within the Return on Investment report

2. Research Areas

For each research area we conducted user interviews, stakeholder interviews, data analysis and a return on investment (ROI) analysis. Those wishing to explore each area in detail should review the stand-alone reports listed at the start of this document. This project summary report contains a high-level review of each research area.

If you would like a printable version of these key findings please refer to:
Case Studies | April 2019 | Council Chatbots | Torchbox

2.1. Planning

When looking into planning services across three councils, there were a total of 18 user research interviews with members of the public and six stakeholder interviews across the three councils.

Torchbox conducted six user interviews. The key findings were echoed across the three councils. Based on these, we identified two key user journeys:
- users managing their own application, and
- users who are checking or challenging someone else's application.

Both journeys involve complex and subjective interactions and exchanges. The complexity and diversity of Planning queries lends itself to users calling councils to speak to someone, rather than using online services. The complex nature of this service would make it costly to both train and maintain a chatbot, and difficult to remove humans from subjective conversations. Because users need additional reassurance, personal interactions are a better way for users to feel heard.

Calls about Planning make up a relatively small proportion of total inbound calls

(3.5%). Of these, less than half can be resolved by the first-line call centre agent. Nearly a quarter of all telephone enquiries within Planning are to enquire about an application that has already been submitted, which in many cases is information unavailable to the first-line agent. In some cases, key processes are not fully digital, limiting the ability for users to self-serve, or for a chatbot to handle certain types of enquiry. Having a paperless service is a prerequisite for building a meaningful chatbot or Conversational AI solution.

There is potential for chatbots to improve triaging of calls, or Conversational AI to proactively provide updates and notifications via SMS. But overall, planning is not an obvious candidate for a chatbot solution.

2.2.   Waste and Recycling

When looking into Waste and Recycling services across four councils, there were a total of 24 user research interviews with members of the public and nine stakeholder interviews across the four councils.

Torchbox conducted six user interviews. The key findings were echoed across the four councils. Most users are looking for information or making a service request; all are simple interactions, and on the whole, users had a positive experience. Users struggle with completing these tasks via the council website, despite being motivated to self-serve. Many have to revert to Google to search for what they wanted, or just give up and make a call to the council.

Waste and Recycling make up a significant proportion (14.4%) of all calls to the councils. The vast majority (98%) of telephone calls are simple information or service requests which can be handled by first-line agents, making Waste and Recycling a strong candidate for chatbots.

It was agreed that pre-empting customer needs through proactive communications (e.g. informing users of a change in collection times, or if a bin

falls into the back of the lorry) would be a good way for chatbots to relieve user anxieties, reduce inbound calls and provide a delightful user experience.

Waste and Recycling is a strong candidate for a chatbot and AI solutions. This theme has been carried further for more detailed data modelling in the ROI report.

2.3. Revenues and Benefits

When looking into Revenues and Benefits services across three councils, there were a total of 19 user research interviews with members of the public and eight stakeholder interviews across the three councils.

Torchbox conducted seven user interviews. The key findings were echoed across the three councils. Based on these, we identified two key user journeys:

- billing and general enquiries, and
- applying for or switching housing benefits.

All users interviewed were starting their journey from a point of anxiety. The enquiries within revenues and benefits are commonly characterised by frustration, complexity, and sensitive topics of conversation. Due to this, users are more likely to call the council than to self-serve online - particularly in regards to benefits. Even if users wanted to self-serve online, their ability to self-serve is limited, as plenty of tasks can't be completed online (e.g. notifying the council of a change in circumstances, or viewing the balance on a council tax account).

There is a high incidence of repeat contact, with people asking for support or being asked to provide more information/evidence over time. Ultimately, these are emotional, complex issues and nearly every conversation is unique. The risk of chatbot confusion is high.

Revenues and Benefits calls make up a large share (29%) of all calls to councils but only a comparatively amount (33%) of these calls can be resolved by first-line call centre agents. The majority of Revenues and Benefits calls require follow-up from a back-office team. Additionally, some user journeys involve referral to 3rd-party services.

There is potential for chatbots or AI solutions to improve the user experience by providing useful reminders and notifications, helping to clarify process and provide links to guidance. But overall, revenues and benefits is not a good fit for chatbot or AI solutions. On top of all the above findings, users exhibit distrust and scepticism due to this service area being predominantly financial in nature.

It is unlikely than in a service area where user trust is already low for human interactions that this would be improved by adding an AI interaction, without first addressing the reasons for the underlying distrust. This leads us to question whether speaking to a chatbot would be appropriate.

2.4. Highways

When looking into highways services across in Surrey (the only highway authority involved), Torchbox conducted a total of eight user research interviews with members of the public and three stakeholder interviews within this council.

Based on the user interviews, we identified two key user journeys:
- complex urban planning enquiries, and
- reporting an issue or requesting an improvement.

The key motivation for people engaging with the council was either around something affecting their immediate safety or their community, or to reduce both existing and potential negative impacts on their daily life. Surrey County Council has made a concerted effort to deflect a large amount (73%) of inbound

telephone calls regarding Highways defects to online self-service. Website information for reporting issues was seen as more straightforward than other services areas, but this was often let down by a lack of response to keep people informed - leading to heightened anxiety and frustration or calls to the council.

Highways services are different from the other areas, in that not all councils are responsible for these services. This structure also leads to user confusion, with people making contact with their city council when the issues are the responsibility of their borough or district.

Highways services make up a very small proportion of total inbound calls (1.6%) but a significant proportion of these (64%) can be resolved by the first-line agent. This service can be characterised by a very large number of different reasons for people making contact with the council. The most common reason for getting in touch (enquiry about road works) only constituted 12% of inbound calls. This fragmentation of reasons for calling would make it costly to train and maintain a chatbot and harder to show significant ROI.

Within Highways, there is typically a large number of subcontractors involved in carrying out work, with their systems not always integrating with council systems to give a current picture of progress for contact centre staff to be fully informed. This also presents a challenge for a reliable chatbot or AI solution.

Chatbots and AI could aid two-way communication when reporting issues and getting feedback and updates. But Highways is not an obvious candidate for chatbot and AI solutions for all the reasons stated above. Additionally, the complex structure of Highways services across councils reduces the possibility of multiple councils being able to collaborate in a chatbot solution.

3. Recommendations

3.1. Alpha candidate

Having conducted user and stakeholder research, one service area in particular - Waste and Recycling - stood out as having a particularly strong case for considering for chatbots.

For those seeking a detailed justification of this decision, please review the ROI Analysis Report. Summary of reasons why Waste and Recycling is a strong candidate for chatbot:

- Waste and Recycling makes up a high proportion of calls into councils.
- Nearly all of these calls are requesting basic information or are task-based enquiries suitable for handling by a chatbot with comparatively few complex calls requiring second line intervention.
- There are relatively few distinct reasons for calling which means a chatbot can address a large proportion of all Waste and Recycling calls.
- Users have an expressed desire to self-serve without needing to make a phone call, but only turn to the phones as a last resort.
- Waste and Recycling exhibits spikes in call volumes that coincide with call centre resources being under strain (e.g. at Christmas or during adverse weather).
- Provision of Waste and Recycling services is largely consistent across a high number of different councils, meaning the investment in a chatbot could be shared across a number of collaborating councils.
- Large potential for a significant return on investment - if 20 councils were to collaborate on development of a Waste and Recycling chatbot, it would be reasonable to estimate total savings across the participating at £2.2m annually[3].

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[3] See Chapter 5 in the Return on Investment report

- The area would benefit from a two-way conversation with the council that can be enabled by Conversational AI to occur in-the-moment. Currently the human service costs are prohibitive, for instance alerting all affected residents of a change of bin day due to bad weather personally, and then answering any follow-up questions.
- Selecting this as an initial area would be an accessible first step for users in trying out new forms of AI enabled communication with the councils, which could encourage users to select this channel for other areas of service.

3.2.   Best practice

Alongside the consideration of chatbots, we have also identified a number of best practice recommendations which should be considered in conjunction with exploring chatbot solutions.

It is important to highlight that these recommendations should be addressed even if councils are not considering the development of a chatbot. The best practice recommendations below should help you to improve your digital services, process efficiency and user experiences.

- **Effective search engine optimisation:**
  Your users' journeys don't start when they land on your website. They need to find it first. When so many people start with a Google search - it is vital to improve your search engine optimisation so that your council's services and relevant information are easily found by your users.
- **Easy internal search experiences:**
  When users are on your website, the search experience is vital to help users find content easily and quickly. Improving relevant search terms, content tagging, search filtering functionality and labelling of page or

document types will all work towards improving the search experience.

- **Clear website information architecture:**
  Structuring, prioritising and grouping information and tasks in a way that makes sense for users makes it easier for them to find content and get their jobs done on your website.

- **No user experience dead ends:**
  Pages on your website should be linked with relevant content, call to actions and contact information to avoid users feeling stuck.

- **Quick links to human assistance:**
  Whilst you are trying to avoid users calling the council, it is still important to retain the ability for users to transfer directly to human assistance for sessions where a chatbot cannot adequately meet a user's need. By directly connecting customers with specialist service teams, there is an opportunity to improve the user experience and reduce call centre wait times.

- **Relevant labels and taxonomy:**
  Avoiding jargon, communicating in layman's terms and reflecting user vocabulary is a better way to reflect user's mental models of your service. Doing this will help users find and understand content quickly and easily.

- **Effective data tracking and analytics:**
  Tracking user behaviour online can provide invaluable insight into what your users are up to online. Tracking key metrics and conversion rates can tell you if users are performing the tasks you want them to perform online. You could then supplement this quantitative data with user testing or user interviews to understand _why_ things are or aren't working as planned.

- **Internal structures reflected on customer-facing services:**
  Services should be organised based on user needs, rather than internal structures. Good services will not unnecessarily expose users to internal structures because users shouldn't have to understand the structure of local government to access their services.

- **Internal structures reflected on projects:**

Revenues & Benefits are very different services, with little basis for combining from a user perspective. Was it right to bundle them together within this project?

- **CRM Integration:**
  Integrating disparate systems with a central CRM helps to unify an experience making it possible to add value to the end-to-end user experience.

- **Paperlessness:**
  Having a paperless process has been identified as a prerequisite to an effective chatbot or AI solution. In particular, Planning still characterised by paper files which cannot be consulted digitally.

- **Web Services Enablement:**
  Legacy backend systems can be adapted to provide secured web services which enables users to serve themselves via cheaper and more convenient channels such as Conversational AI.

- **Content Management Systems:**
  Ensuring good control of changes to information and answers in a way that can then be reflected across all the council systems ensures that a user receives the same answer whether they choose a human, AI, web, mobile, or phone channel.

- **Clear contact strategy if self-service isn't sufficient:**
  If web based self-service isn't sufficient for handling all enquiries, then it is important to have a clear strategy for the next most appropriate channel of service, taking into consideration both the cost to serve by that channel and the likelihood of resolution via that channel.

3.3. Collaboration

As stated at the outset of this document, fostering a culture and approach that encouraged collaboration has been one of the key objectives of this project. Having completed our research and analysis, it is clear that this method of shared understanding and pooling of resources has had key benefits:

- Helped us to identify geographic or demographic nuances for particular councils
- Consistency of research outputs if different councils are using a shared approach and consistent set of document templates
- There are significant economic benefits with respect to collaborating upon the development of a chatbot to serve multiple councils[4].
- If every council builds their own chatbot in isolation, then we would end up with a fragmented council ecosystem and enormous duplication of effort.

[4] As quantified in the Return on Investment report

4. Conclusion

Deciding whether or not to consider a chatbot or AI solution is not a simple, formulaic, yes or no question. It is a complex subject where you have to consider and align user needs, organisational strategy, multidisciplinary data, and expertise, in order to make a well-informed decision and deliver a valuable solution for councils and users alike. Our hope is that throughout this project we have provided the training, framework, and methodology whereby councils would be able to conduct their own feasibility research, both in terms of chatbots and also other areas of tech innovation.

We would highly discourage councils jumping straight into a chatbot or AI solution without carefully exploring user needs, commercial viability and technical considerations. We hope our report has given a useful introduction and guidance on what you need to conduct a discovery phase project of this nature. We would also strongly encourage that the culture of collaboration established throughout this project is carried forward into future phases of work. Not only does this provide efficiencies and economies of scale, it also reduces duplication of effort which can lead to further cost savings.

The recommended next step to undertake an Alpha[5] project to build a prototype of the service and test the prototype with real users . Our specific recommendation, based upon considerations of user needs, costs, complexity, and return on investment, is for councils to develop a chatbot within Waste and Recycling. We have demonstrated throughout this research summary and supporting documents, that there is a compelling justification based upon user needs, potential return on investment, and the characteristics of the service areas under review. Furthermore, our hope is that we have adequately shown that cross-council collaboration will be far more cost-effective for developing a

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[5] For detailed definition of Alpha, please refer to
https://www.gov.uk/service-manual/agile-delivery/how-the-alpha-phase-works

chatbot than for individual councils to pursue their own chatbot projects in isolation.