

# Digital transformation in waste services

Sunderland's digital transformation of waste services has delivered a significant digital channel shift and change in user behaviour – from just 14 per cent of transactions online in financial year 2016/17 to 55 per cent in 2018. It has reduced missed bin reports by 7,000 and delivered £136,364 in savings, well on the way to meeting the project's 2020 target of £200,000 in savings and 60 per cent online transactions.

## The issue and context

Sunderland City Council's refuse crews empty 550,000 domestic household bins each month from the council's 277,249 residents, collecting an average 8,315 tonnes of waste. However, in early 2017 the council was receiving hundreds of telephone calls to report missed bins – on average around 600 a month.

In challenging financial times, the council saw the opportunity to both improve the service and deliver savings by reducing failure demand and encouraging a shift in reporting channel from the telephone to the web.

Sunderland therefore applied for LGA Channel Shift funding in order to transform the service by integrating existing Bartec in-cab technology with its Microsoft Dynamics Customer Relationship Management (CRM) system and redesigning the digital citizen experience for environmental services.

Contact volumes and channels for the service in early 2017 showed traditional telephony was the most popular channel and represented a large volume of contact for the authority, 32 per cent of which was classified as failure demand.

A service performance agreement with both the council's executive and political leadership teams aimed to eradicate face-to-face contact for this area, reduce telephony contact from 85 per cent to 60 per cent overall, increase self-service from 14 per cent to 40 per cent and reduce failure demand by 25 per cent by 2020.

The council planned to deliver a return on the £15,000 LGA grant investment of £200,000 in savings by 2020 whilst creating in-house skills and capabilities that could be used to improve further environmental services, such as bulk waste collection.

“On average every quarter we collect some 1.6 million waste containers. We knew from the insights through the customer services network, customer complaints and speaking to advocates and elected members that a lot of people are very sensitive about waste collection. This insight suggested we had about 40 per cent of reported failure due to missed bins so it was a huge opportunity for us to try to improve that.

“We applied for £15,000 funding which was used to integrate in-cab technology and improve our website to make the customer experience better. We used insight around the amount of demand that we were receiving around missed bin collections – which averaged around 40 per cent. We estimated that through this funding and the improvements we could make that we could deliver approximately £200,000 savings.”

**Helen Johnston, Customer Services Delivery Manager**

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### Digital Channel Shift Programme

The work at Sunderland City Council to support its innovative use of digital technology has been funded through the Digital Channel Shift Programme, which is managed and overseen by the Local Government Association (LGA).

The Digital Channel Shift Programme was set up to help councils and their partners to promote greater use of online tools and technologies for the benefit of both their customers and staff.

The aim is for the digital tools and solutions created through the programme to be reused by other councils and contribute to the wider work to transform local public services.

## The project objectives and targets

An ambitious timescale for these improvements targeted a go-live in November 2017, enabling residents and visitors across Sunderland who wish to contact the council to report environmental issues and request services such as missed bin collections.

This would involve enhancing the digital interface for waste services by:

- redesigning the web-pages
- improving the transactional customer journeys – by seamlessly integrating with FixMyStreet, a mobile solution with GPS pinpoint mapping technology for reporting environmental issues
- integrating in-cab technology to give real-time refuse collection information
- further developing the project team's analytical skills to ensure customer insight is integral to the improvement journey.

The LGA funding was to be used as follows:

- £5,000 to integrate FixMyStreet with the council's CRM system utilising an open source application programming interface (API – a set of routines, protocols, and tools for building software applications that specifies how software components should interact) to increase self-serve capability and improve mobile accessibility leading to increased customer satisfaction and ease of reporting environmental issues and requesting services.
- £3,000 to integrate the in-cab technology with the CRM to provide real-time information via the website and reduce volumes of traditional contact and failure demand.

“We have recently introduced in-cab technology for our waste services and it just seemed a perfect opportunity to use this funding to see how we could better integrate the in-cab technology into our web offer.”

**Helen Johnston, Customer Services Delivery Manager**

“Bins can be a concern for many households and particularly since we had to change to alternate weekly collections – one week recycling, the other household waste – people are very passionate about what they get for their council tax.”

**Councillor Amy Wilson, Cabinet Member for Environment & Transport**

- £5,500 to enhance the existing GOSS website and redesign the templates based on Government Digital Service (GDS) design principles to improve website accessibility and navigability.
- £1,500 in Google Analytics training and skills transfer to the in-house digital team to develop strong in-house skills to continually improve the customer journey.

### Targets

The project targets were to, by 2020:

- reduce face-to-face interactions to zero
- reduce telephony interactions to 40 per cent
- increase web interactions to 60 per cent
- resulting in over £200,000 cost-to-serve savings comprising:
  - face-to-face = £40,374
  - telephony = £163,966.

These channel shift targets were viewed as challenging in that Sunderland serves a mixed user demographic. Up to that point, the council had achieved some success in terms of channel shift and demand reduction, but it felt that significant additional opportunities remained.

An underpinning objective of the project was to build the in-house skills and capability to support further development and digitisation of both environmental services and other council services.

## The approach and progress to date

The project was expected to run from April 2017 through to March 2018 with milestones as identified in the table at the end of this section. The project faced some delays when the discovery phase identified the need to procure a new product / web infrastructure not just a redesign of content. Further minor delays were encountered as outlined below but the project was live and completed well ahead of its March 2018 deadline.

### Agile approach

Led by project sponsor and head of customer service, intelligence and ICT, Liz St Louis, and customer service delivery manager, Helen Johnston, the project team took an agile approach to development and project management.

Sunderland took advantage of 'Agile for Teams' training delivered by GDS on which the LGA had secured a number of places for councils.

### Google Analytics

Sunderland commissioned a local digital marketing agency, Dodio, to support the project by undertaking a review of its current analytics and tracking approach. The company also provided advanced Google Analytics, Google360 and Data Studio tools training and 'tag manager' – the ability to manage user-generated tags within collaborative software –

“It was quite a challenge for us to review the website in the timescales we were given because we were trying to allow the implementation of the in-cab technology and the integration at the same time. We decided to take good advantage of agile project management methodology training so a few people in customer services went along to that training. That gave us the skills and tools needed to pick up the pace and use things like setting targets to make it a minimal viable product. I would recommend using agile.”

**Helen Johnston, Customer Services Delivery Manager**

“The funding also provided for training in Google Analytics which has enabled us to look at how much time customers are spending on the website, which pages they are hitting. This is helping us see if the customer journey is as it should be – not only in waste services but in other areas such as universal credit.”

**Carol Thirlwell, Customer Service Development Officer**

skills transfer in order to integrate 'live chat' into the website.

The team found the training and new skills enormously beneficial within the agile and iterative project management approach. They were able to review current website usage, design and test new customer journeys and provide insight and evidence for improvement.

This work provided reliable evidence of user behaviour and activity as the project progressed. It also ensured that all online content – both for the project and in future – is created to meet the analytically-proven needs of users, rather than subjective opinion.

A key ability the team highlighted was that of being able to ensure that there are no barriers or blockages between the online user and the information or service that they wish to access.

In addition, this solid base of metrics and the ability to set 'goals' within Google Analytics provided a foundation for shaping specific key performance indicators for web content.

“Customer feedback had told us that they wanted a FixMyStreet experience when reporting fly-tipping for example – using that simple map-like technology. But when we started looking at our requirements we found that FixMyStreet couldn't integrate to suit our needs. Instead we did it in Dynamics as we already had that functionality and we will have a lot more benefits using the existing system.”

**Gary Williamson, Customer Services**

## FixMyStreet

The initial aim was to seamlessly integrate with FixMyStreet, a very user-friendly, free, website that is increasing in popularity but currently holds inaccurate information with all requests having to be re-keyed into the council's CRM system.

However, this proved impossible to achieve within budget and the team moved forward instead with a combination of integrating the council's existing ESRI geographic information system to provide the mapping capability for reporting online.

## Bartec

The in-cab Bartec units were successfully integrated with the CRM to provide real-time information on the website and to the customer service network operatives in the call centre.

A software application was added to each domestic refuse vehicle and integrated with the Dynamics CRM to improve the customer journey whilst also creating significant savings for the refuse service. It works by telling the CRM when the crew was in the street and if / why a container has not been emptied. This updated report is then relayed to the customer who reported that their bin/s have not been emptied. The same process also applies for anyone using the web self-serve option, ensuring there is a consistent approach throughout.

Customer services operatives access the same CRM and have the information available to them in real-time should a customer call about a missed bin.



## Web enhancements and redesign

The discovery phase established that the initial plan of enhancing the existing GOSS content management system and creating new templates would not deliver the required transformation. A new out-of-the-box capability was therefore procured from the same supplier with additional training for key people to create in-house capability.

All web content was reviewed under GDS design principles and simplified / reduced to meet user needs. New templates for content and transactional web forms were created with a focus on usability within a new corporate layout and style. The ICT team were engaged to make required changes to complex transactional forms.

## Promotional campaign

The council has been running a general 'do it online' campaign to encourage residents to make the website their first port of call for information and service requests, based on the 'mouse' icon. When a particular service has been improved, such as waste services, this has formed the focus for communications. Activities included bulletins, information and adverts in resident publications and on council communications, and social media. Messages directing people to online channels were included on social media, email, text, direct mail and automated voice messages.

There has also been an internal campaign running to raise awareness of the improved functionality, usability and layout of the website, backed up by evidence generated from Google Analytics. Internal activities targeting councillors, senior leadership teams and relevant staff included briefings, presentations and employee e-bulletins.

Project milestones	Planned	Actual	Notes
Design / discovery phase:	Mar-Apr 2017	Mar-Apr 2017	Identified need for new product / web infrastructure not just a redesign
Google Analytics training	April 2017	April 2017	
Web page enhancement and redesign	Apr-Jun 2017	June 2017	Work delayed by two months due to procurement of new capability.
Bartec integration	May-Jun 2017	May-Jun 2017	
Dynamics CRM and GIS integration	May-Jul 2017	May-Jul 2017	
Technical / internal testing	June to Oct	June to Oct	
Pre-launch communication and staff training	July to Oct	July to Oct	
Bartec soft launch and user testing in two bin wagons	Jul-Aug 2017	Jul-Aug 2017	
Bartec go-live	Sep 2017	Oct 2017	Delayed due to political sign-off (changes in refuse collection service standards and summer recess)
Website go-live	Nov 2017	Nov 2017	
Website user testing	Nov 2017	N/A	User research / continuous improvement commenced after go-live

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## Report a missed bin collection

[Home](#) > [Residents](#) > [Waste and recycling](#)

Missed collections should be reported no earlier than 4:00pm on the day of the collection to allow time for delayed collections to be made and not later than 24 hours after the scheduled collection day.

When you report a missed bin collection, you will be asked to confirm the following information:

- That the bin was left at its collection point by 7:30am on the day of collection
- That the correct bin was left out for collection
- That the bin did not contain any contaminated items (e.g. household waste left in the recycling bin)
- That the bin was visible and accessible

Subject to the above criteria being met, and checking against council records, the council will arrange to return within two working days (Tuesday to Friday) of the missed collection report being received.

Report a missed bin collection >

Further information is within our [Service standards](#).

## The outcome – successes and challenges

Channel	16/17	17/18	2018 to date	2020 target
Face to Face	2%	2%	1%	0%
Telephone	84%	64%	44%	40%
Web	14%	34%	55%	60%

“At the beginning of 2018 we were set a very challenging target of 38 per cent contact for the web. We were achieving something around 20 per cent at the time so we knew we had a lot of hard work to do. But we have smashed it – achieving 55 per cent with Environmental Services as a result of this project.”

**Helen Johnston, Customer Services Delivery Manager**

The project has delivered a significant digital channel shift and change in user behaviour – from just 14 per cent of transactions online in financial year 2016/17 to 55 per cent in 2018 year to date. This is impressive progress towards the council’s 2020 target of 60 per cent web transactions.

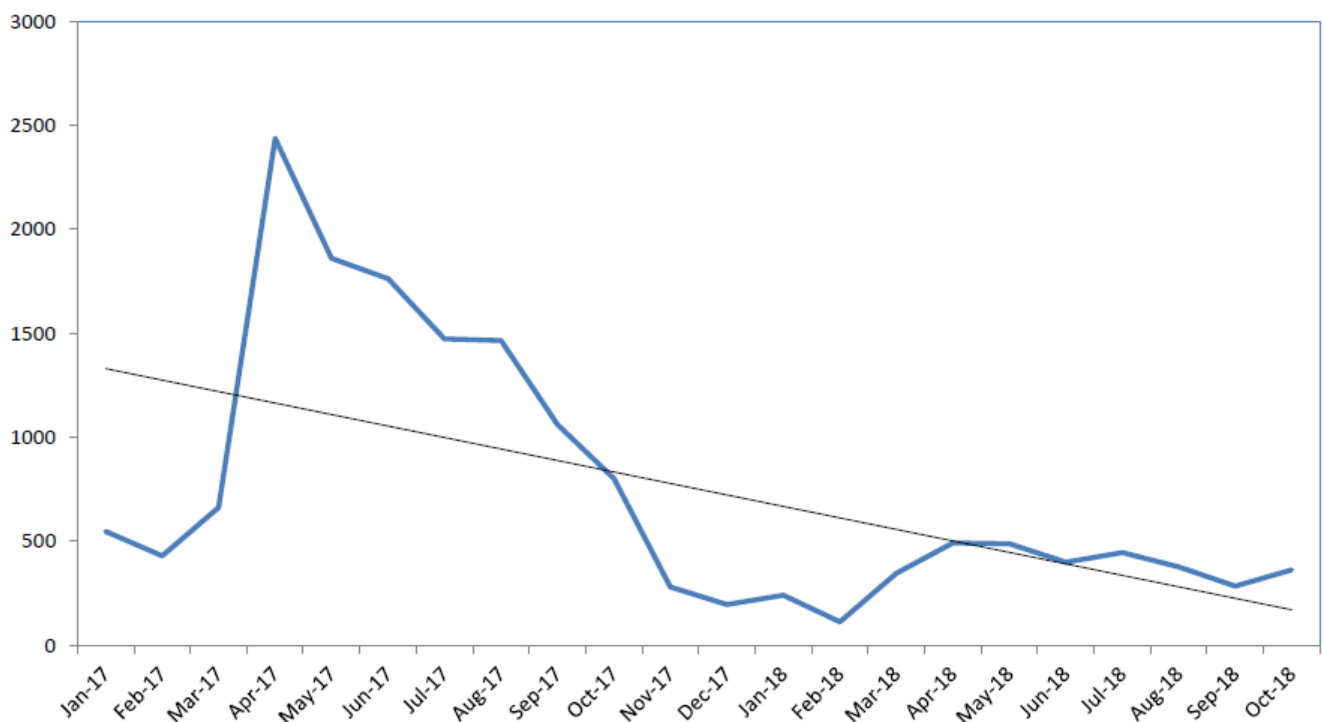
Telephone contact has reduced from 84 per cent to 44 per cent, with face-to-face

transactions dropping from two per cent at the project start to one per cent to date. This was against a back-drop of increased demand due to bin round changes, rising to 51,835 reports in the period April 2016 to March 2018.

Meanwhile there was an 80 per cent reduction in missed containers from the same period the previous year.

In addition, April 2018’s seasonal increase in demand due to the start of garden waste services was minimal compared to April 2017.

### Reduction in missed bins:



## Financial benefits

“Like every council we have to balance our budgets and we were looking at ways to achieve this. These savings have made a massive impact on balancing the budget.”

**Councillor Amy Wilson, Cabinet Member for Environment & Transport**

Based on contact volumes, costs and channels in 2016 the project has delivered significant savings to date and is on track to meet – if not exceed – its 2020 target of £200,000.

**£136,364 in savings has been delivered to date:**

Cost to serve (round changes)	£38,316
Reduction in missed bins	£24,920
Reduction in staff cost	£61,107
Reduction in agency staff	£12,021

Despite an increase in contacts of 51,835 due to the bin round changes there was an overall saving of £38,316 in cost to serve due to a 21 per cent increase in customers choosing self-service options.

This reduced cost-to-serve saving of £38,316 comprised a reduction of 331 face-to-face visits (unit cost per minute is £1.31, average transaction time is 10 minutes = £4,336.10 saving) and a reduction of 9,545 telephone contacts (unit cost per minute is £0.89, average transaction time is 4 minutes = £33,980.20 saving).<sup>1</sup> The increase of 61,711 web contacts at no additional cost to the council provides strong evidence of the impact of successful channel shift in local public services.

In addition, a 7,000 reduction in reports of missed bins – an 80 per cent reduction in reports of missed containers from the same period the previous year – generated savings of £24,920 based on a unit cost per minute of £0.89 and with an average transaction time of four minutes.

The council was able to release 2.5 FTEs directly relating to these improvements,

<sup>1</sup> Figures based on Sunderland analyses

resulting in an efficiency of £61,107 (2.5 x £24,442.80). A further two agency workers were also released, generating a saving of £12,021.

## Non-financial benefits

The release of capacity in customer and environmental services teams has enabled the service area to absorb other demand pressure, for example changes to bin rounds, without the need for additional staff.

Customer service staff are much more confident in dealing with customers complaining about missed bins as they have the information at their fingertips in real-time.

Please choose\*

Missed container at property

Our records show that your bin was not presented for collection or that it was not accessible when the crews came to empty it. Unfortunately, we can't return to empty your bin until the next scheduled collection date. Waste can be taken to the Council's waste and recycling centres at Deptford, Sunderland or Campground Washington free of charge.

With the new out-of-the-box website product, ownership of the website has transferred to customer service staff with greater responsiveness to user need and timely updates.

Increased self-serve capability has provided greater choice and convenience for customers and improved mobile accessibility leading to increased customer satisfaction and ease of reporting and requesting environmental issues and services.

Informal feedback suggests that customers are also more confident in using the skills they have

“Initially customers were not happy that we were informing them that their bin had not been missed when they were trying to report that it had been, and we got a number of complaints. This has changed significantly though as people have got used to the idea that we have technology that enables us to go back and check exactly what happened to their collection. Having this live information gives our customer service team the confidence to deal with difficult conversations.”

**Ian Richardson, Acting Assistant Director of Environmental Services**



“The web design is all about getting the service area to take responsibility for their own web pages – and gives them better customer insight. This means we can react more quickly, provide customer updates if for example the weather is bad.”

**Carol Thirlwell, Customer Service Development Officer**

developed using the digital waste service to access information and use other digital council services 24/7.

Development of a customer insight capability for the council using Google Analytics complements the existing performance management framework, GDS user research capability and the use of customer personas and customer segmentation. Following this environmental pilot, these skills will be used across all other service areas.

In general, staff have greater confidence in the council's digital offer for citizens and in their own skills development and career paths.

Meanwhile the real-time high-quality data has enabled teams to significantly improve operations and led to the creation of a new 'information culture change' within the authority.

## Challenges

**Policy change and political sensitivity:** bins are a sensitive local political issue across the country. Change to alternate weekly collection – and the political will to sustain these changes – required regular engagement with councillors and customer feedback / performance reporting.

**Skills:** engaging and upskilling bin crews with the skills and capability to effectively deploy the in-cab technology and accurately record information required significant focus and

“Customers are starting to understand that we're not going to just collect their bin because they forgot to put it out or we have evidence they did have contaminated items in their recycling.”

**Carol Thirlwell, Customer Service Development Officer**

“Our drivers have had to learn new skills, including new IT skills. It wasn't easy. You can't simply introduce new technology and new requirements to someone's role without taking the time for the extra training. We focused on the benefits – the time saved from not returning to collect bins that we hadn't missed and providing people with a better service, as the customer service network could give real-time information on why a bin had not been collected.”

**Ian Richardson, Acting Assistant Director of Environmental Services**

emphasis to ensure that staff were on board with the project and to ensure collection of data. This shift in operational arrangements was challenging. The accurate recording of information was essential as this would underpin the work to drive down missed bin failure demand and service requests. To support this the council put in place joint working and regular meetings between the contact centre and service managers to address concerns and agree improvement actions. This was very successful and motivated staff to engage with the project and learn new skills.

**FixMyStreet:** it quickly became apparent that this approach was not practical. However, the resulting in-house development has provided a broader capability for improving the website and for future projects to redesign service.

**Web procurement:** the realisation during discovery phase that the team's preferred plan for website content redesign did not meet user needs set the project back some months due to the subsequent procurement of an enhanced, out-of-the-box product. However, the training and capability developed in-house during this project will be valuable to the council in the future.

“For a councillor there was a time when all the complaints were about bins, bins, bins but I very rarely get them now.”

**Councillor Paul Stewart, Cabinet Secretary with responsibility for Customer Services & IT**

## Key learning points

**Stakeholder engagement is key:** keep engaging stakeholders, you can never do enough. The team met with key people in the service so that they owned the content and felt valued in the process. “So we weren’t doing something to them, but we were actually asking them what services were important to their customers.”

**Agile methodology and project management is very successful:** it gave the team the skills and tools needed to pick up the pace. Using techniques such as setting targets to create a minimum viable product was very useful. Sunderland would recommend using agile – “it’s not technical, not complicated and helps you to deliver and it builds up trust with the stakeholders that you work with because you can deliver and share the success on a sprint cycle basis”.

**Bartec integration:** the Bartec integration with Microsoft Dynamics can be shared across the Dynamics user community as Bartec is used in a significant number of authorities. The council will do this via the North East Customer Service Regional Benchmarking Group, North East ICT Managers, SOCITM North East and the Digital Inclusion Network in conjunction with Good Things Foundation.

**Upskilling the team is essential:** training of the in-house digital team in Google Analytics was key to the project’s success and the council also developed an in-house training guide for the web analytics. Ongoing this will supplement existing customer persona / segmentation skills and the council aims to transfer the knowledge to a range of partners including public and voluntary and community sector organisations.

“One of the other big benefits has been around the upskilling and development opportunities for the team, that can be used time and time again.”

**Helen Johnston, Customer Services Delivery Manager**

It’s been a learning curve for both residents and staff. Staff have had to learn how to use Bartec and we’ve had to let residents know that we have the technology in place – and remind that it is their job and responsibility to put their bin out on time.”

**Councillor Amy Wilson, Cabinet Member for Environment & Transport**

## Next steps

Sunderland plans to build on the existing collaboration between partners in its Regional Waste Partnership with Gateshead and South Tyneside councils to further strengthen its digital offer and provide regional benchmarking capability.

The council is also keen to combine and reuse the skills gained in this project to transform other environmental services – and subsequently wider council digital services. It has already put these skills to good use transforming bulky waste collections, fly-tipping and garden waste services.

It also has plans to build an enhanced user research and continuous improvement programme on top of the analytics and user research skills gained in this project. It will also use the learning from its involvement in a GDS Parking Verify pilot. Following the launch of the new website it will harness this user research programme to inform content redesign improvements and further develop self-serve forms.

“This is just the start of our shared journey to discover just how much we can best use this type of technology. While reporting a missed bin for example, people can become more aware of the other services that we provide online – such as paying their council tax – so we’re seeing significant increases in online transactions. It’s been a win-win situation for the council.”

**Councillor Paul Stewart, Cabinet Secretary with responsibility for Customer Services & IT**

“Through this project we have been able to ensure citizens still have a choice in how they can deal with us, but also through the new in-cab technology we have been able to identify where we have been at fault and go back to the residents and make sure their bin is cleared quickly. We have also been able to respond confidently to the conversation where it has been the householder at fault.”

**Councillor Paul Stewart, Cabinet Secretary with responsibility for Customer Services & IT**

“One of the main benefits of this project was how we could build on what we have learnt and how we could leverage the technology. For example, we deliver garden waste services, bulky waste services and we’re looking to integrate in-cab technology for those. The website itself has been an enormous success so every single service the council delivers has benefited.”

**Helen Johnston, Customer Services Delivery Manager**

“Technology is developing all the time and we as a council need to be able to move with it. We still have telephone numbers and face-to-face contact at our contact centres if people want to walk in and speak to us, but the amount of online transactions being done by people via the web has doubled in the last year. Once people start using our website and find out how easy it is to do, they will go back and use it again. I can just see the figures rising and rising.”

**Councillor Amy Wilson, Cabinet Member for Environment & Transport**

## Contact for further information

For further information on this project, please contact:

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