



Data Connects

Business Benefits of Customer Data Integration

05 June 2008



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1 Foreword

This is the second report commissioned by the Data Connects group. For those of you who don't know us we're a group of local authority officers who champion the more efficient use of the vast amount of customer information held on our council systems. Our first report pulled together all the best practice advice on how to match customer data, where to find the most accurate information in your council and how to face up to the multiple challenges of sorting out your customer data. This report aims to highlight the known and potential business benefits of implementing a customer data integration project.

You could rightly argue that the reports should have been commissioned the other way round i.e. business benefits before the best practice. After all, surely the former is a necessary prerequisite to getting approval to undertake the project in the first place. Theoretically this is true but in practice things are different. **In the local government arena many of the early adopters who built master customer databases were able to progress without a detailed financial business case.** The reason for this is simple, to a greater or lesser extent all of them were **able to justify their projects by tapping into the years of frustration that councils felt about not truly knowing who their customers were, not being able to provide a joined up cross council service and having inaccurate and out of date customer information** in many cases, as a result of having disparate systems and poor data management practices. Even if a detailed financial business case was required how could it be built when none of us had accurate metrics to measure the inefficiencies of the way we were then processing our information? It was catch 22 because until councils started deploying CDI solutions there was nothing in the public sector to benchmark against but if we all needed the detailed business then nobody would get started. **The early adopters then are those local authorities (LAs) that took the leap of faith and, as this report shows, they will be shown to have invested wisely.**

In taking this approach **the public sector was no different to the private sector, the big private sector CDI successes started their projects because it just made sense to bring all their information together**, it just made sense to have one source of information onto which they should build their company's services. To the senior decision makers of both sectors it just felt right and sensible to bring shape and clarity to what was a mess. Of course that initial faith was rightly based on the belief that efficiencies and service improvements would follow. The latter remains the challenge for the early adopters in both sectors.

There are two key target audiences groups for this report. First, and most importantly, our **aim is to help those local authorities who want to start a CDI type project but need that business case to justify the investment.** You will see that **82% of the councils surveyed expected to start such a project in the next 3 years.** They will benefit from the report because **we pulled together real metrics on where the savings (qualitative as well as financial) can be made**, unlike the early adopters they have something real and tangible onto which they can build their own local business case. The second audience group are the early adopters who are slowly starting to benefit from the hard work they put into their customer data projects. Having got everything up and running they are now concentrating on the benefits that

can be derived from their efforts. The report will help them focus on the right areas and approach the subject in a logical and standardised way.

We hope others will benefit too. To our IT **CDI supplier community we hope that this report will help you convey the benefits of undertaking such work and we hope that through your new customers you will help us further develop and refine the business benefits model.** To the decision makers in central government we hope the report shows the real benefits that can be made of making efficient use of our customer information. **At a time when recent data losses and security breaches make some think it easier and safer to keep information in silos (it isn't) we all need to highlight the benefits to be made of securely and wisely sharing our customer information.**

Bringing shape and clarity to all our customer data is a complex and time consuming business. There are quick wins to be made and these keep you going but the real benefits come in the medium and long term. We may be catching the private sector up but real customer data management is new to all of us, it will take time and patience to reap the substantial benefits that are out there. As our councils start to throw off the shackles of poor quality customer information, the way in which services are provided will substantially change. Only the limits of our organisation's drive and vision will reduce the benefits to be made. Our hope is that through this report and the work of the Data Connects group in general we can work together on learning the lessons and reaping the benefits.

As a group our next challenge will be looking at how to help organisations monitor and improve their data quality, council wide Information Governance structures and the wider demands of master data management (MDM). Whilst CDI concentrates on people data, MDM will take us into mastering all key data sources e.g. financial records, assets etc. Subject to funding we also hope to have another LA survey this year to monitor the take-up of CDI and update the figures in this report using information from those LAs that come online over the next 12 months.

On the behalf of the Data Connects group I would like to thank Chris Hall, Peter Dewsbury and Mohammed Naqvi at RSe Consulting for all their hard working in compiling the report. As ever they always went the extra mile and working with such professionals makes any task easier. I would also like to thank all my Data Connects colleagues for their help and support making particular note of the contributions made by Clare Troy, Graeme Hutchinson, Tom Kerrigan, Chris Waterman, Brian McAleer and Duncan Chapman. In addition I'd like to thank all those council service managers who shared their information and knowledge as part of the report compilation process. Lastly our thanks to London Connects who, as ever, provided the financial support to fund the work.

All feedback and comments on the report are welcome so feel free to contact me directly tony.ellis@brent.gov.uk. As you build your own business cases please share them with us as the more data we get the more detailed and reliable the model will be.

Thanks for taking time to read this report.

Tony Ellis, Chair of Data Connects, June 2008

2 Executive summary

Local authorities are under increasing pressure to manage their customer data more effectively as they look to align themselves with national initiatives such as ContactPoint and Tell Us Once and deliver transformed customer focused services.

Those authorities that implement a basic Customer Data Integration (CDI) solution can expect to see a significant **cashable return on investment of approximately £4.3million** over a five year project. The majority of this return (approximately £3.3million) is a result of more effective debt collection in Parking.

It seems likely that **the push towards more sophisticated CDI solutions will gain more traction in future** as the technical barriers and costs become less prohibitive owing to the trend towards more open interfaces for business applications.

About this report

This report and the accompanying CDI Return on Investment (ROI) case

calculator were commissioned by Data Connects to understand and capture the business case for local authorities implementing CDI solutions. The scope of this report is to:

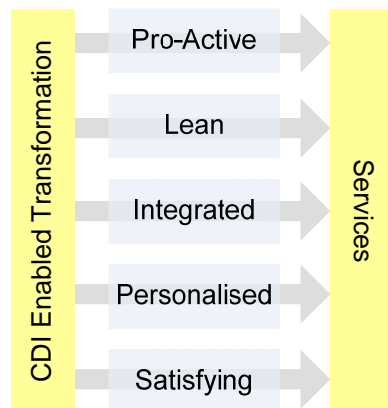
- Identify and describe the key areas of cost and benefit for a typical CDI project
- Outline a generic business case for CDI projects in local government
- Provide 'best practice' case studies of CDI projects in the public sector

This report is complementary to the Data Connects Technical Best Practice Report which takes a more detailed look at the practicalities of managing data in local authorities and shares the experiences of those that have completed projects looking to manage it.

CDI vs CRM

Customer Data Integration (CDI) is NOT the same as Customer Relationship Management (CRM) though many of the objectives are similar. Whilst a CRM system is usually intended as the definitive method of recording customer contact in the Front Office a CDI solution gathers information from across the enterprise (including the back office) to present a true single customer view (to which many CRM implementations aspire but do not achieve) and the best available dataset. This data can be used to de-duplicate and improve the completeness and accuracy of CRM information.

2.1 There are a number of drivers for better CDM and some barriers



The RSe-Data Connects national customer data management survey shows that over **82% of respondents expect that they will be doing more work on CDM/CDI over the next three years.**

Better management of customer information is important if local authorities are to transform to deliver services that meet customer's needs and expectations.

The case for better management is particularly compelling at the moment because it aligns closely with a number of wider developments including:

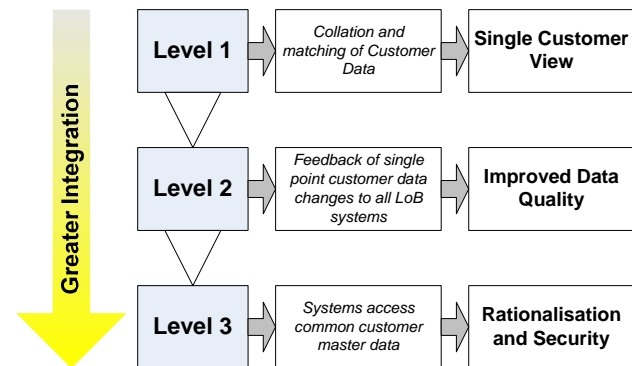
- **NI14** - better management of customer data can reduce avoidable contact
- **ContactPoint and Tell Us Once** - both specific examples of customer data management
- **The need for partnership working** - CDI solutions can be a key enabler for joint working.

Beyond the expected project risks for major IT projects there are also a number of barriers that are specific to CDI projects that must be overcome. They are:

- Restrictions on sharing data
- Concerns over access to and security of information
- Concerns over poor application reducing service levels

2.2 There are three levels of CDI solution

There are three Levels to CDI solutions as shown in the diagram to the right. Based on the results of the research undertaken in compiling this report **a Level 1 CDI solution with an intelligent set of reports and alerts running on the collated and matched Customer Data presents the best business case for local authorities in the current climate.**



2.3 Though the costs are high, the benefits are significant

Based upon the experiences of Data Connects members and the local authority case studies reviewed by this project, **a 'typical' London Borough could expect to incur the following costs** when implementing a Level 1 CDI solution:

- Project management support equivalent to approximately one FTE for the first year
- One-off software and associated services costs of £400,000, following by ongoing costs of £40,000 p.a.
- Ongoing data stewardship costs for 2FTEs or approximately £82,600 including on-costs

The scale of financial benefits that a 'typical' London Borough could anticipate are:

- **Increased collection of revenue** such as Council Tax and parking fine of approximately £825,000 pa
- **Reduction in benefit overpayment and incorrectly applied single person discount** of approximately £600,000 pa
- **Reduced time obtaining correct contact details** leading to non-cashable staff time savings of approximately 0.5 FTE across the council (or approximately £71,000 over the five years)

The **most significant qualitative benefits** expected and reported by local authorities were:

- Identifying Children that are potentially at risk and not known to Children & Families
- Identifying and informing customers about benefits that are eligible for but not claiming
- Improving the accuracy and coverage of the electoral roll

The **key risks to successful implementation** of CDI projects in local authorities have been identified as:

- Sufficient funding is not available – CDI projects are expensive to implement and no specific funding is available for them
- Staff not sufficiently bought in – CDI solutions become more powerful the more service areas are included therefore ensuring services are bought in is crucial to the success of the work
- Concerns over data security – local authorities hold a lot of sensitive customer information and collating this information in one place raises concerns over its security

3 Introduction to this Report

The public sector is always striving to deliver excellent services to customers from the first point of contact to the conclusion of service delivery. Despite the great leaps forward in e-working over the past decade, the vision of integrated, customer focused services is yet to be achieved.

One of the persistent barriers to achieving this vision is the poor management of customer information across the large number of varied services that make up local authorities in the UK. Data Connects, a group of local authorities that shares knowledge about customer data management in the public sector believe that Customer Data Integration (CDI) can deliver significant benefits to UK local authorities.

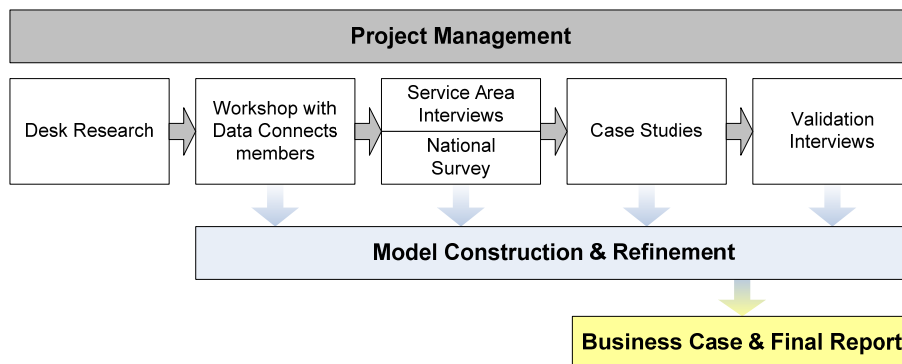
This report developed in partnership by RSe Consulting (RSe) and Data Connects brings together the existing knowledge of RSe and a number of leading local authorities in this area. Its primary focus is to present the best available analysis of the business case for local authority CDI solutions. CDI solutions are currently not widely used so there are gaps in the data to be filled over the coming years and we expect this document to evolve as more examples become available.

Establishing the business case at this time is important because:

- CDI could be a key tool in helping local authorities to deliver better services at lower cost
- Whilst there are numerous private sector case studies on the efficiencies achieved through CDI the data for UK local government is sparse and locally isolated
- CDI in the public sector is evolving rapidly and gaining momentum
- CDI projects are complex, expensive and require technical expertise meaning that the decision to proceed requires a transactional CDI enabled savings model and business case explaining the benefits to be realised
- Though the need for good Data Quality often appears obvious, the tangible and specific benefits of improving it are often difficult to articulate

3.1 Methodology

There were five key stages to the gathering and collation of the information that makes up this report and the accompanying business case calculator. These stages are outlined in the diagram below:



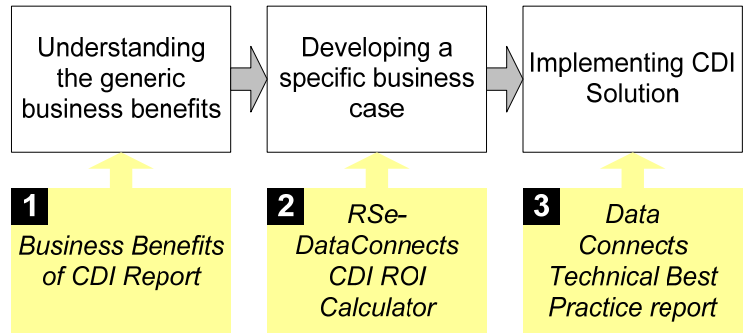
1. **Desk Research**; reviewing existing Data Connects documentation, accessing published CDI case studies, identification of major suppliers and reviewing their benefits literature
2. **Workshop with Data Connects members**; development of generic the local authority CDI project, development of costs and service specific benefits grids
3. **Service Area Interviews & National Survey**; validation of benefits grids with service area experts, quantification of benefits, national survey for context and case study contacts
4. **Case Studies**; detailed discussions and documentation of solutions with a selection of organisations already using CDI
5. **Validation Interviews**; discussion of business case calculations with local authority CDI experts to ensure assumptions robust and results applicable in wider context

The increasingly detailed information was input into and then refined within the CDI ROI calculator which was then used in the preparation of this report.

3.2 Using this report

This report is one of three core outputs commissioned and produced by Data Connects to assist local authorities at each stage of their CDI initiatives. Together the three outputs cover the full lifecycle:

1. This report which outlines what is meant by CDI, how it fits into the local and national context, and the business case for a generic scenario
2. A business case calculator for CDI projects which lets users tune the business case to reflect the specific scope and circumstance of their project
3. A best practice document which brings together the knowledge and experience of all members of the group and focuses on the practicalities and technical requirements of implementation from developing matching rules to configuring adaptors



Each of the three outputs is available from Tony Ellis, the chair of Data Connects at tony.ellis@brent.gov.uk or RSe Consulting info@rseconsulting.co.uk

Though we recommend reading this complete report to develop a full understanding of the business case for CDI it has been written to allow sections to be used on an individual basis. You may be particularly interested in using:

- **Section 1 – Executive Summary**; as an overview of the contents of this report and the key messages
- **Section 4 - Introduction to CDI**; to familiarise yourself and others with the principles of CDI, the context in which it is applied and the barriers to its application

- **Section 6 - Generic Local Authority CDI**; to understand the basis of the business case presented in this report
- **Section 7 - Costs and Benefits of CDI**; to understand the breakdown of the costs and benefits in more detail
- **Appendix A – Customer Data Integration case studies**; to learn how other local authorities have been applying CDI
- **Appendix C – Results of Data Connects & RSe Consulting Customer Data Management Survey 2008**; to see the findings of this national survey of local authorities
- The accompanying **RSe-Data Connects CDI ROI** (Return on Investment) **calculator** whose Summary sheet is a single page overview suitable for introducing a senior level colleague to CDI and the overall business case

3.3 Finding out more

If you would like to learn more about CDI, benefit from the best practice experience of those that have made CDI happen, or attend the Data Connects quarterly meetings please contact Tony Ellis, the chair of Data Connects at tony.ellis@brent.gov.uk or RSe Consulting info@rseconsulting.co.uk

We'd love to hear from you

If you make use of this report, the accompanying return on investment calculator or the technical best practice report we'd be delighted to hear from you. Please e-mail your thoughts, completed ROI models, specifications, project summaries, case studies or any other CDI related materials to info@rseconsulting.co.uk and we'll make sure we use them to improve things for everyone in the subsequent versions of all the resources.

4 Introduction to Customer Data Integration

In the past decade local authorities have become increasingly dependent upon new IT systems to deliver Value for Money services. However, these systems are limited as customer data is usually fragmented, often riddled with data quality problems and plagued by the absence of a 'single version of the truth'.

Poor management of customer data is a significant barrier to local authorities as they seek to transform and do more with less resource. There is a growing belief that applying the customer data management techniques that are well established in the private sector presents a big opportunity in the public sector. ContactPoint, which is part of the Every Child Matters programme and seeks to develop a single index of contact details for those that work with each child in the UK, and DWP's 'Tell Us Once' programme are examples of central government efforts to improve customer data management. Local authorities clearly have a crucial role to play in both of these initiatives but there are also opportunities to improve practices at a local level.

CDI vs CRM

Customer Data Integration (CDI) is NOT the same as Customer Relationship Management (CRM) though many of the objectives are similar. Whilst a CRM system is usually intended as the definitive method of recording customer contact in the Front Office a CDI solution gathers information from across the enterprise (including the back office) to present a true single customer view (to which many CRM implementations aspire but do not achieve) and the best available dataset. This data can be used to de-duplicate and improve the completeness and accuracy of CRM information.

There are a number of drivers for better management of customer data which are important to understand. In this section we explore the vision for local authorities that manage their customer data effectively and how CDM relates to a number of wider developments that mean now is a good time to get started.

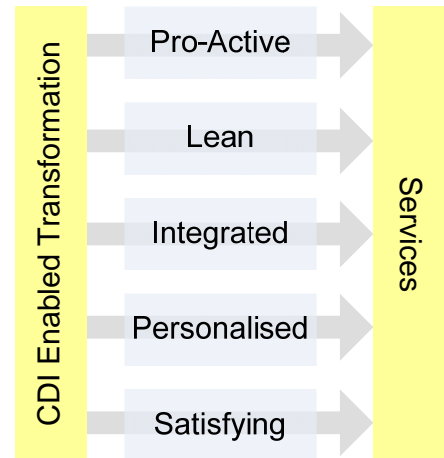
We then look at the role of Customer Data Integration (CDI) solutions in meeting the challenge of customer

data management, before finally acknowledging some of the barriers that need to be overcome to successfully implement a solution. The barriers section looks beyond the technical and organisational risks posed by this type of project though these risks are covered in more detail in Section 5 of this report.

4.1 Vision for local authorities with effective Customer Data Management

Better Customer Data Management (CDM) has the potential to enable local public services to transform from a reactive, disparate service into a **proactive** and **integrated** set of services.

Local authorities and their partners (both local and central) with powerful, well implemented, CDM practices will be able to **offer their customers a personalised service** based on a complete understanding of their needs and preferences. Changes in circumstance from getting a new mobile phone number through to major life events such as having a baby will be fed through to all services that could use the information **eliminating waste** caused by repeated provision of the same information.



New customers to the area will only need to make one contact with a local public service provider before they are **pro-actively offered a prioritised portfolio of services** to meet their needs and help them live fulfilling lives in the area.

Contact with the Council will be **appropriate and measured** engendering a positive relationship based on **trust**. Those with needs will be identified and **receive the services they are entitled to**. Those that try to abuse the public sector's services will be targeted and resources recovered through removal of benefits and increased collection of revenues from a better managed pool of debt.

Staff will be happier and more productive in their roles. They will feel **empowered** to offer a better service with the customer information they need readily available and comprehensive enough to build a proper understanding of the customer or to contact them quickly with up to date details. Gone will be the predominantly reactive pattern of service delivery and the waste of passing customers around like a parcel at a party.

Council Members will be **confident in their mandate** encouraged by improved levels of electoral registration and accompanying increases in turn-out. The officers they work with will be able to better **plan services**, applying their CDI solutions to give them increasingly **powerful customer insight** and a full and reliable understanding of who their customers are.

Local public sector **partnerships** will be able to work together to achieve efficiencies and offer better integrated services. In the event of emergencies the improved understanding of customers will mean that better plans can be made and responses targeted to those customers in most need of assistance.

CDM can be a powerful tool as local authorities look to implement the **Transformational Government** agenda and achieve the vision for public sector service delivery set out by **Varney**.

Implementing a CDI solution requires a significant investment but offers an even more significant return. Opting for a CDI solution is entirely consistent with the need for authorities to adopt an 'invest to save' model if services are to be sustained.

4.2 Alignment to wider developments

Though good Customer Data Management makes sense for local authorities, there is an ongoing need to prioritise investments and ensure they are made at an appropriate time. There are a number of wider developments driving the more immediate adoption of CDM:

1. NI 14 – Reducing avoidable contact

Better CDM will help local authorities improve their performance directly and indirectly. Directly by addressing item C in the definition of avoidable contact "repeat contact with the customer having to pass on the same notification of information to carry out transactions with the council and its partners – for example, customers being asked to provide information about a change of address to multiple parts of the council" as CDI solutions can automatically pass on changes in circumstance. Indirectly, by giving individual service areas the information they need to address item D in the definition "customers are progress chasing, asking for reassurance or making other unnecessary service delivery follow-up" e.g. providing mobile phone numbers for low cost SMS progress notifications.

2. ContactPoint

The implementation of a register of every child in the UK as part of the Every Child Matters programme is a good example of how Customer Data Integration can be applied. As for other CDI solutions (which are discussed in section 5), once the child data from across the country has been collated it is matched to produce a single record for every child with the contact details for any professionals working with them from across all the relevant agencies.

3. Tell Us Once

Better CDM is vital to the principals underpinning the 'Tell Us Once' programme. Implementing data management practices and specifically a hub and spoke model similar to the generic solution described in this report with a CDI solution at the core could deliver the notification of a change of circumstance at one instance of customer information and pass it to all others that need to use it. The key being that the CDI solution can match the customer in the original system to the same customer in other systems without a 100% field to field match.

4. Ministry of Justice review – Data sharing review

The Ministry of Justice is currently conducting a review on the use and sharing of personal information in the public and private sectors (the consultation period ended 15th February 2008) <http://www.justice.gov.uk/publications/data-sharing-review-consultation.htm>
The outcomes from this review could have a big impact on the future of CDM in local authorities – either as a big enabler and promoter or as a barrier to progress.

5. Audit Commission consultation – Code of Data Matching Practice

The Audit Commission first published a Code of Data Matching Practice in 1997 and updated it in 2006. Following the granting of new powers in the 'Serious Crime Act 2007' the commission has proposed an updated version of the code of practice which is currently in consultation <http://www.audit-commission.gov.uk/nfi/codeofdmp/>

The code of practice covers local authority obligations to provide data to the Audit Commission for its data matching exercises to help reduce fraud. It includes a number of important implications including:

- a. Staff involved in data matching need to take security awareness courses
- b. When data is collected it should be accompanied by a 'fair processing' notice
- c. Supplying data for the Audit Commission to match is a legal obligation
- d. Wrongful disclosure of data intended for matching is now a criminal offence with a sentence of up to 2 years in prison

6. Working in Partnership

Local authorities are increasingly being encouraged to work with partners to achieve cross-cutting outcomes for their local areas and/or efficiencies. If local authorities and their partners are going to truly work together then the joint understanding of who their customers are and the ability to identify where customers are common that CDM can provide will be crucial. Local Strategic Partnerships (LSPs) should look carefully at the way in which they manage customer data and how making improvements might help them achieve their Local Area Agreement (LAA) targets and perform well in the Comprehensive Area Assessment (CAA).

7. Delivering shared services

The majority of partnership working projects to date have focused on the combination or collaboration of two previously separate services as one service e.g. shared waste collection, finance or ICT functions. Though this approach can deliver significant savings, the change and investment required to setup an effective new service can be very challenging. For front line services, the objective of working in partnership is often to provide a consistent service across public sector organisations but it has proved difficult to do so without intervention as the two organisations must be sure they are referring to the same customer. CDI technology can be applied to advance this type of partnership working by matching customer records between the systems held by the organisations working in partnership. This has been successfully applied at London Borough of Croydon who has matched data its data with that held by the PCT.

8. Data Protection Act

One of the key steps in building a CDI solution is baselining what customer information is held in which systems and know the who, what, when, where and why of its use. This knowledge will give officers responsible for information security a great starting point for testing the overall security of customer information in the enterprise. CDI solutions will also help local authorities meet their obligation to make sure that the customer information that they hold is accurate.

9. Other Initiatives

There are a number of other initiatives in the public sector looking at the management of customer data and identity including the Government Gateway, Connecting for Health and ID Cards. All of these could have an impact on the way CDI is implemented and used.

4.3 The nature and role of CDI solutions

Many private sector companies, and now some local authorities, are addressing the need for better Customer Data Management, often using Customer Data Integration (CDI) solutions. We define CDI as:

"the combination of processes and technology used to manage customer information from all sources available to the enterprise and ensure that the most current and comprehensive view of customer data is available enterprise-wide."

There are three principle steps for CDI solutions:

1. **Collect data** from available sources
2. Integrate collected data to **identify common customers**
3. **Apply integrated data** – it is at this stage that CDI solutions meet the need for better CDM

Within the gather, integrate, apply framework, the CDI technology itself is responsible for the matching or integration of customer data once it has been collated into one repository. This matching identifies when the data from one system refers to the same customer as the data from another system. There are two main methods of matching:

- **Deterministic / Rules Based**

Though individual attributes may not be unique it is possible to combine a number of attributes e.g. First Name, Last Name, Home Phone Number, Date of Birth to create a unique attribute (a compound key). Records from different systems can then be matched using the compound key. This approach requires the creation of a set of rules which inform the matching.

- **Probabilistic**

An alternative method of matching is to look at the probability that a customer is common. This method uses a set of algorithms that examine all the customer data available to determine how likely it is that two records refer to the same individual. This is particularly useful where customer data has been collected in different ways and at different times making it highly unlikely that there will be an exact match.

The two methods each have their pros and cons with a probabilistic approach usually being more effective, but also more expensive. The most appropriate approach depends largely on the existing data quality and the available budget. There is more detailed information on the

What do we mean by customers?

In the context of this report "customer" refers to individuals who are in contact with a local authority. This reflects the priority placed on these customers. Businesses are excluded as the anticipated value of similar initiatives for businesses such as the 'single business account' is less clear.

different matching approaches in the Data Connects Technical Best Practice report though it may be most helpful to talk this through with a Data Connects representative.

Data Connects is supplier neutral, but if you would prefer to talk through the options with a supplier a full list of CDI vendors is available on the e-Government Register¹.

Having an effective Customer Data Integration solution in place gives organisations the tools they need to improve CDM including a single view of the customer, a best available dataset for each customer and the opportunity to rationalise the information that is held. The business applications of these tools and the benefits achieved are discussed in more detail in Section 7. The different types of CDI solution and their characteristics are explained in Sections 5 and 6.

4.4 Barriers

Implementing Customer Data Integration (CDI) solutions in local authorities poses all the usual challenges associated with implementing new IT applications such as achieving buy-in from the business, overcoming technical limitations of source systems and ensuring there is sufficient and appropriate training to allow the business benefits to be realised. The risks associated with CDI projects are addressed in the return on investment analysis in Section 7.

Beyond the project achievement risks there are also a number of barriers that are specific to CDI projects that must be overcome. These barriers and the measures that can be taken to overcome them are outlined in the table below.

	Potential Barrier	Mitigating Action
<p>Data Sharing Restrictions</p> <p>The effectiveness of a CDI solution depends upon the service coverage it achieves</p>	<p>Benefits</p> <p>There is a legal statement required by statute on each Benefits application form that states that the information provided on the form will be used to assess eligibility for benefits only.</p>	<p>Barriers to sharing information (particularly around births, deaths, marriages and changes of address) are in competition with the aims of the national 'Tell Us Once' project underway at the Department for Work and Pensions. The conclusions of the pilot work done by this project could have a big impact on these barriers and other aspects of data sharing.</p>

¹

<http://www.brent.gov.uk/egr.nsf/SCV?ReadForm&View=ProdByTypeSupp&Category=Customer+Data+Integration>

	<p>Registrars The Registrar service is allowed to report births to the local health authority and to education if asked for. Deaths can be notified to Council Tax. Other than this, no other data sharing is allowed.</p>	<p>Allow Registrars to share information with the allowed services and then pass the improved information from these services on to other services.</p>
	<p>Council Tax The Council Tax collection service is not allowed to collect "excessive information"</p>	<p>Allow Council Tax to continue to collect information in the current way and feed it into the hub as an additional data source acknowledging that it may not be comprehensive.</p>
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Concern over access to information</p>	<p>CDI solutions work by pooling data from across a number of systems which raises concerns about who will be able to access this data. Access must be appropriate e.g. a customer service officer taking an order for a recycling box does not need to know whether or not the recipient is in receipt of services from Children and Families.</p>	<p>This barrier is not significantly different to when authorities use multi-service CRM systems. Take the opportunity to baseline the access control arrangements for each service and ensure that the 'hub' restrictions are carefully implemented. This exercise can be useful in its own right as LoB access controls are often found to have weaknesses.</p>
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Concern over poor application Inappropriate use of any technology can cause problems and CDI is no exception</p>	<p>Over-reliance on CDI for customer knowledge Customers of service industries are often frustrated by the requirements to prove their identity and entitlement to a service e.g. requiring copies of utility bills to open a bank account. Though many of these controls are appropriate, it is important that the improved data from the hub does not generate an over-reliance e.g. refusal of service if not on hub or incorrectly merged with other records.</p>	<p>Local authorities are often high turnover businesses (30% population turnover is not unusual for London Boroughs) and the way in which new customers are validated and added to the list of customers should reflect this.</p>
	<p>Over-collection of customer information Customer information is best collected opportunistically, not systematically. A systematic approach can both lengthen (and therefore increase the cost of) contact and reduce satisfaction if seemingly inappropriate information is asked for e.g. Date of Birth when ordering a recycling container.</p>	<p>Both of these concerns are already present e.g. 'Computer Says No syndrome' but the increased focus on customer data that better management and CDI solutions will bring needs to be balanced with training and awareness that the hub should not mean a move towards aggressive collection of data. If correctly implemented, CDI solutions should reduce the information</p>

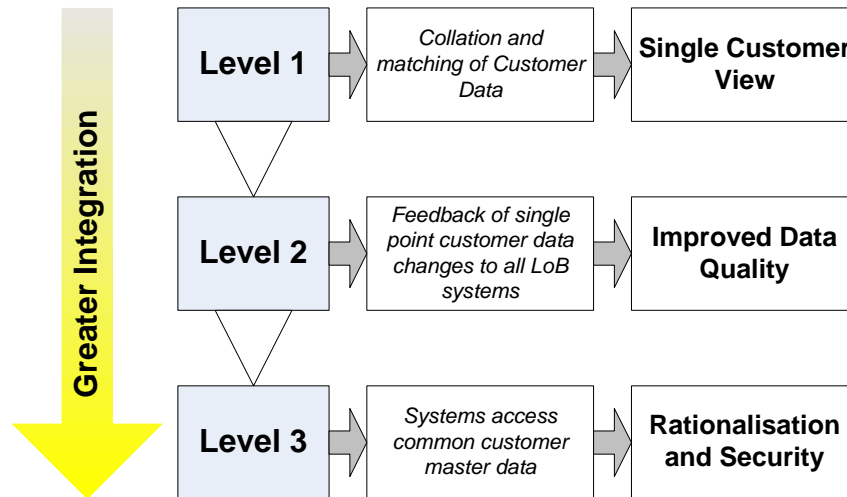
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Though there are actions that can be taken to overcome these barriers they can cause difficulty. Whether or not a CDI solution is right for a particular authority and the degree of success it enjoys is often dependent upon an authority's attitude to risk. Risk averse authorities may decide that a wait and see approach is most appropriate but these will be balanced by those that encourage innovation and are early adopters of this type of technology.

If local authorities are truly going to move towards the Citizen Centric services requested by the t-gov agenda then it is imperative that the guidance and legislation in areas that impact on customer information catch up with developments and take the risk away from those driving innovation. The barriers and mitigating actions are covered in more detail in the Technical Best Practice report.

5 The three levels of CDI

As with many technologies CDI solutions can be implemented to different depths depending upon the specific business requirements and resources available. CDI solutions are built up in three levels as outlined in the diagram below. At each level the application of the integrated data gets deeper.



To illustrate the difference within a local authority environment consider the following scenario: A new customer has moved houses within the area and contacts the Council to register to pay Council Tax at their new address by direct debit – how is Electoral Roll made aware of the change of address?

The answer depends upon the level of CDI solution implemented:

No CDI	Electoral roll wait until the customer contacts them separately or it is time for the annual canvass
Level 1	Electoral roll receive (or can query for) a notification of the change of address for the customer as identified in their system and decide what action, if any, to take
Level 2	Electoral roll receive a notification of the change of address and a choice as to whether or not they wish to automatically update their records to match (the solution could be configured to always accept such updates once sufficient trust is established)
Level 3	Electoral roll's system works off the same dataset as the Council Tax system and therefore the change of address made by the Council Tax revenue team will be automatically reflected in electoral roll

Based on the interviews, national survey and analysis done to prepare this report most local authority CDI solutions are Level 1 solutions with Level 2 functionality for some specific areas, typically where there has been a strong local driver or the system lends itself to the necessary integration. We did not find any evidence of Level 3 solutions.

5.1 Level 1

The majority of early adopters have a Level 1 CDI solution

Level 1 CDI solutions are characterised by the availability of a cross-service 'Single Customer View' (SCV) whereby data held in a number of source systems is collated and matched. Querying the collected data or 'hub' for a single customer can retrieve information received from each of the source systems on that same customer.

Implementing a Level 1 solution requires the initiation of a full project to develop the scope, engage with the business, and understand the information stores. On the technical side the procurement, installation and initial matching / configuration of the CDI software and commitment to an ongoing support arrangement all need to be completed as well as training staff to use the new solution.²

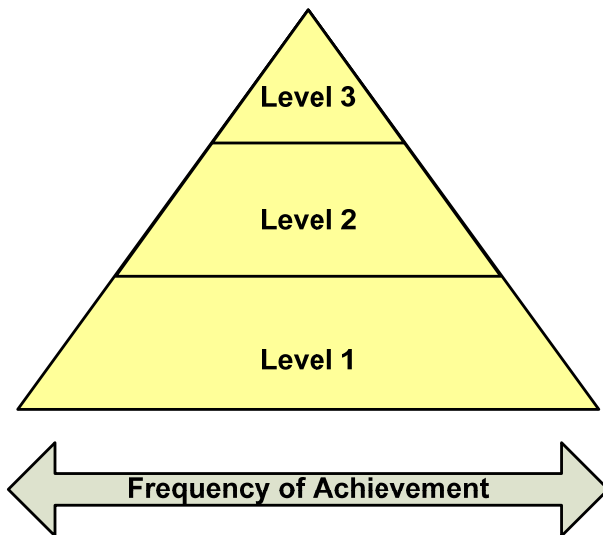
In return for this investment the Level 1 SCV solution helps local authorities reduce the effort associated with contacting or recording contact with customers, collect more fine revenue by tracing people through contact with any service area, and reduce fraud by examining known members of household.

5.2 Level 2

A few early adopters have Level 2 solutions for a limited number of systems

Level 2 CDI solutions are characterised by the use of the cross-service 'Single Customer View' (SCV) established in a Level 1 solution to improve data quality in the source systems. A Level 1 CDI solution is a requirement for a Level 2 solution.

CDI solutions are built up through the levels 1 to 3



Implementing a Level 2 solution incurs a number of additional costs associated with more detailed integration compared to a Level 1 solution.

In return for this additional investment a Level 2 CDI solution will improve data quality throughout the enterprise, particularly in picking up changes of circumstance and non-address contact details e.g. phone numbers and e-mail addresses. This improvement in data quality is coupled with a reduction in double entry of details already collected by another service and the option for services to populate their systems with all known customers so they can be looked up when they contact the service rather than having to

² Note: Some authorities have built their own CDI solutions using their own business rules. However, purchasing in specialist software is the most common approach and therefore that used to develop the business case in this report.

be keyed in.

Level 2 solutions also make it easier for a greater number of services to benefit from less commonly collected contact details such as mobile phone numbers. These can be used to communicate with the customers through new, often preferred and often cheaper channels e.g. delivering SMS updates on progress with benefits applications.

5.3 Level 3

Level 3 CDI solutions are an aspiration at this time

A Level 3 CDI solution involves the modification of business applications to access and update a single set of customer master data. A Level 1 CDI solution is a requirement for a Level 3 solution. A Level 2 CDI solution is recommended before moving to a Level 3 solution as a way of aligning customer data, needed before records can be rationalised.

Moving to a Level 3 solution offers two key benefits over and above those achieved at Level 2.

1. Rationalisation of data

Rather than holding information about customers in a number of disparate databases where key information will be duplicated a number of times, e.g. contact information such as addresses, a Level 3 CDI solution will have just one version used by all. This is often referred to as having a 'single version of the truth'. It reduces the effort associated with maintaining contact information (only one update is required) and ultimately reduces the information storage requirements across the authority (e.g. using a single database server rather than several).

2. Improved security

In the absence of a single database of customer information access through each of the Line of Business systems (applications used within services to carry out their business) must be controlled through an application specific set of controls resulting in large variations in user restrictions and strength to resist attempted breaches. Following the implementation of Level 3 CDI adopting a best of breed approach to customer data security will be based around access to a single database. Therefore it will be much easier to achieve an appropriately secure environment helping to avoid loss of customer data as extensively publicised in the past year.

5.4 Impact on business processes

Business Process Improvement (BPI) and changes to technology often go together – usually because a BPI initiative identifies the requirement for changes to the functionality and behaviour of technology but also when a strategic IT deployment, e.g. CRM, offers a business opportunity.

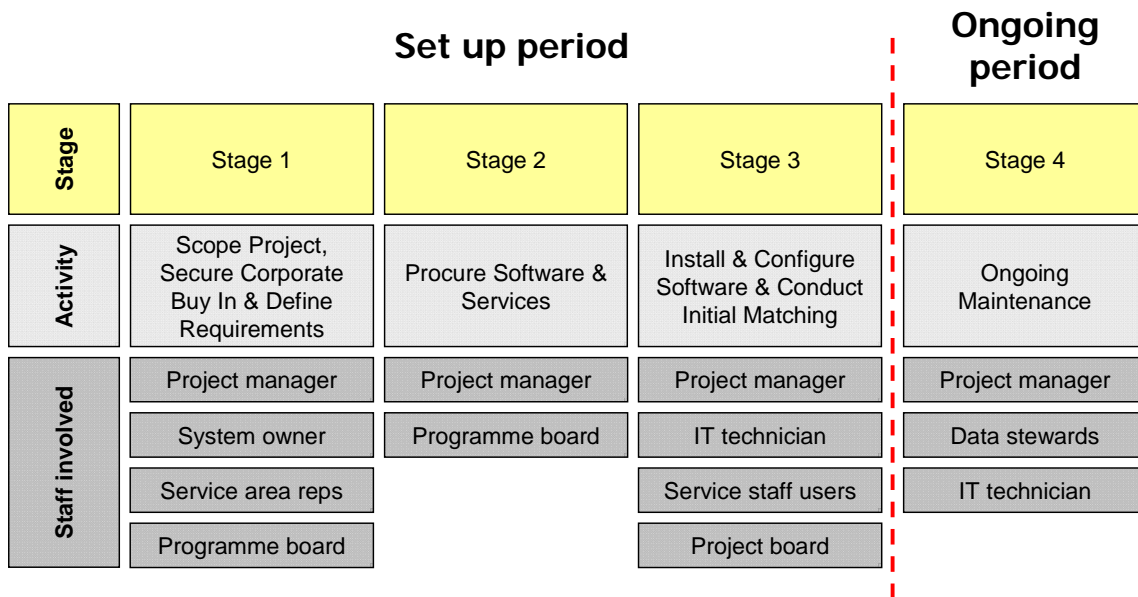
It is important to understand the level of change required to business processes when determining the risk to a project – in general more change exposes a greater risk. Each level of CDI will have a different impact on business processes as summarised in the table below:

Type	Impact	
Level 1	Low /Medium	To achieve the benefits of the Single Customer View small changes will be needed. These will primarily be from looking for details / profiles of customers on line of business systems to using the CDI solution's interface.
Level 2	Low	Does not require any direct changes to business processes as users should continue as they are, just with higher quality data. There is however an additional requirement where services have elected to be given the option as to whether to accept an update to customer records.
Level 3	High	Where service users will be working off the same set of customer data large scale changes to working practices can be expected to make the most of and preserve the quality of the customer master data.

When examining the costs and benefits of the different Levels of CDI solution in Section 7 we have assumed that large changes to working practices are outside the scope of this work and therefore should not be counted as direct costs or benefits to the project.

5.5 Implementing and moving through the levels of CDI

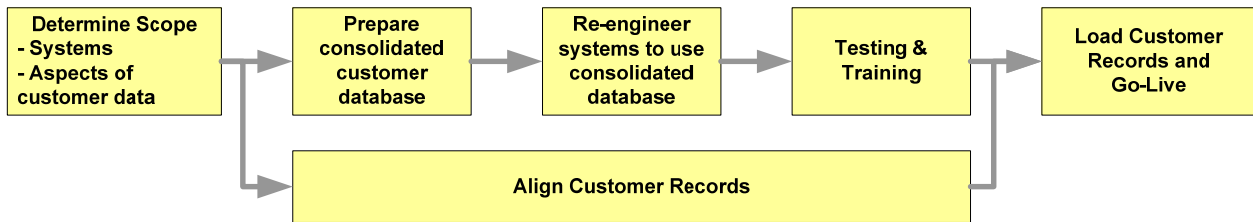
Though this report is not primarily concerned with the method of implementation of CDI solutions, it is important to outline a typical approach if the costs are to be understood. The diagram below shows the four stages of a typical CDI project – three setup stages and ongoing maintenance.



The implementation of a Level 1 or Level 2 solution will follow broadly the same project structure though the more complex Level 2 solution will incur additional costs and realise additional benefits as described in section 7.

Though it is possible to move straight to a Level 2 solution in practice local authorities will implement a Level 1 solution and then look to implement Level 2 functionality, perhaps as part of ongoing business as usual (BAU) improvements.

Implementation of Level 3 CDI poses a different challenge and would require a different project plan to achieve. The main steps are outlined below:



For more advice and information on the implementation and management of CDI projects please refer to the 'Data Connects Technical Best Practice' document available on request from tony.ellis@brent.gov.uk or info@rseconsulting.co.uk

6 Generic Local Authority CDI

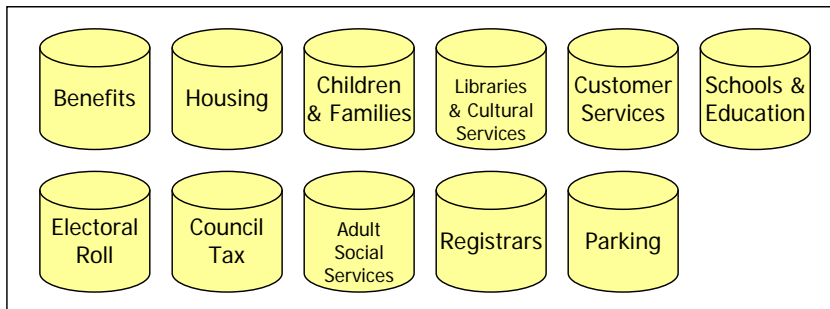
CDI does not follow a one size fits all approach, each implementation and application is unique to match the specific circumstances of the organisation. Within a local authority environment in particular there are a large number of options in the design and implementation of CDI.

In order to develop the business case for CDI it is necessary to define a generic solution which will form the basis of the research and calculations.

The two main variables that need to be set are the **services that are included** and the **scale of these services**. In designing the generic solution we considered:

- The experience of Data Connects members in how easy services are to include in implementing CDI projects
- The contribution each service area makes to collective customer knowledge
- The benefits the service area could achieve from the collective customer
- The findings of the 'Data Connects & RSe Consulting Customer Data Management Survey 2008'

The **selected services are shown in the diagram below:**



(A generic CDI solution is also likely to include a link to the Local Land and Property Gazetteer for address details)

Each service was **scaled to match that of an average London borough** for which Data Connects had the best information available.

Using the RSe-Data Connects CDI ROI calculator

This report focuses on the business case for the generic local authority solution described in this section. However, the accompanying calculator has been built to allow users to determine the ROI for their specific circumstance.

Default data is available for the 11 service shown in the diagram above for District, County, non-London Unitary and London Borough authority types. There is also the option to select the Level of CDI solution to be modelled (see below). The values used for the calculations can be altered and additional services and benefits can also be added.

6.1 The levels

The level of solution clearly makes a big difference to the costs incurred and the benefits achieved from CDI. To determine which is the most appropriate level of solution we have elected to determine the business case for a Level 2 solution but split out the contribution to costs, benefits and risks between Level 1 and Level 2.

Level 3 has been excluded from the generic solution as within the current local authority environment overcoming the technical and procedural barriers of rationalising to a single master source of customer data requires prohibitively high levels of investment.

Technical barriers

Local authorities offer a **diverse set of services** and use an equally **diverse set of business systems** in the delivery of these services. These systems are typically from a large number of suppliers and are likely to operate on a number of different data schemas. In order to establish a master data set for customer information a large number of views would need to be written manually at high cost. In addition, local authorities often have a number of legacy applications running which may include a number of **restrictions that prevent re-engineering** to use a separate combined database.

Procedural barriers

Even if business systems can be re-engineered to work off a single set of customer master data it **may not be appropriate for all aspects of a local authority business** to do so. Benefits, for example, would wish to form their own judgement before suspending a benefit at an address if the master data is changed to show that the recipient no longer lives there. There are a number of reasons why a person may contact the Council and give a different address than their true residence e.g. if arranging a service for a relative.

Council's must also **re-think the way in which customer data is treated** – a master data set would be a key asset but corruption would have severe consequences. Furthermore, the **benefits to the individual service areas will be harder to sell** – they could argue that Level 2 already provides the best available data and further change is an unnecessary risk. Finally, the level of trust between the different teams within local authorities would need to increase significantly. It is our experience that individual services can be quite protective of their own data and suspicious of the quality of that held by others.

Though in the current environment moving to Level 3 may not be practical the trend towards open application connectivity (Web Services, APIs etc) and a more mature and flexible application architecture (particularly the separation of the data layer) points towards a future where the barriers to Level 3 solutions will be much reduced. It is equally important to recognise that automated updates across the enterprise or consolidation to a single database will not be achieved until the CDI solution (or "hub") is trusted to deliver and maintain the best available data.

6.2 Exclusions

When designing the generic solution a number of additional options and variables were excluded. The table below outlines these options and the reason why they have been excluded:

Option / Variable	Reason for Exclusion
Property based services / systems e.g. Licensing, Waste Collection & Recycling, Development Control etc	Excluded because their data is based around properties/infrastructure rather than around people. However, these services may still benefit from the hub e.g. for licensing consultations.
Data from partners e.g. PCT	Excluded because of the complexity in the relationships with these services. CDI solutions involving partners have to date been focused on specific challenges.
Specific technology choices	The functionality that should be delivered by a CDI solution is broadly generic. Depending upon the portfolio of technologies used, the individual capabilities will be different but the complete solution should be similar.

6.2.1 Other types of ‘customer’ data

Though individuals and households living within the boundaries of a local authority are the primary concern of CDI solutions, there are also a number of other ‘customer’ datasets which are open to integration. Though assessment of the business case for integrating these datasets is outside the scope of this report they are outlined below to provide avenues of exploration in case your organisation has particular difficulties or challenges in this area.

1. Individuals and/or households living outside the authority e.g. commuters

The individuals that contact a local authority or use its services will not always live within the borough (though the majority will). For example, it is possible to register with the libraries service through an address outside the authority boundary – at one London borough we found that approximately 5% of active borrowers visited the library from out of borough. Customers of this nature will be included within the CDI solution and some matches between systems can be expected though they will of course be missing from some key sources e.g. Council Tax. Local authorities can still expect to improve the quality of key data for these customers such as the address if they access to a trusted source such as the NLPG or external data quality tools.

2. Staff

Managing staff records across an organisation is becoming increasingly complex as a separate identity and accompanying data such as telephone number is created in a number of systems. A typical portfolio of identities will include instances on the Staff Directory, HR system and Active Directory. On top of this the staff details will be held on the business applications they use and various other locations.

In the same way as dealing with a change of circumstance (such as address) for a customer can cause difficulties across multiple service areas, leavers and joiners processes can be particularly difficult to manage across multiple stores. Some members of Data Connects are

planning to apply their CDI technologies to their staff records as a way of feeding through single point leaver notifications to all other systems. This will suspend their user accounts and reduce the risk of security breaches created by old accounts that are not required but are still active. With a Level 2 CDI solution, lower level changes could also be fed through e.g. change of telephone extension number or home address.

3. Businesses

The recent focus on customer insight and the need to design services around the customer has been primarily focused on individuals and households. Applying similar techniques to businesses should be possible as should integrating business records using CDI technology but it is usually of lower priority than dealing with individuals or households. We would expect the majority of business information to be held by the Non-Domestic Rates, Environment, Licensing and Customer Services Teams.

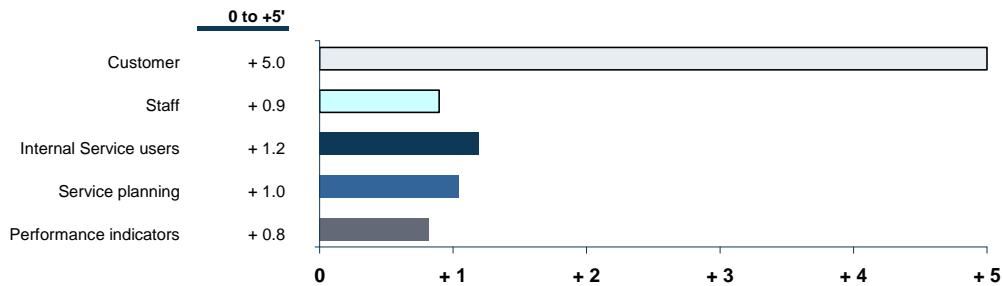
7 Costs and Benefits of CDI

This section examines the costs and benefits associated with Level 1 and Level 2 CDI solutions within local authorities. The costs and benefits are the same for different tiers of authority though some will not apply in all cases. For example, County Councils will not see the benefits for the Housing service.

All the graphs and figures in this section are taken from the RSe-Data Connects CDI ROI Calculator that accompanies this report. The calculations reflect the generic solution described in Section 6. If you would like to determine the business case for your authority please complete the ROI Calculator and refer to the Summary and Results tabs.

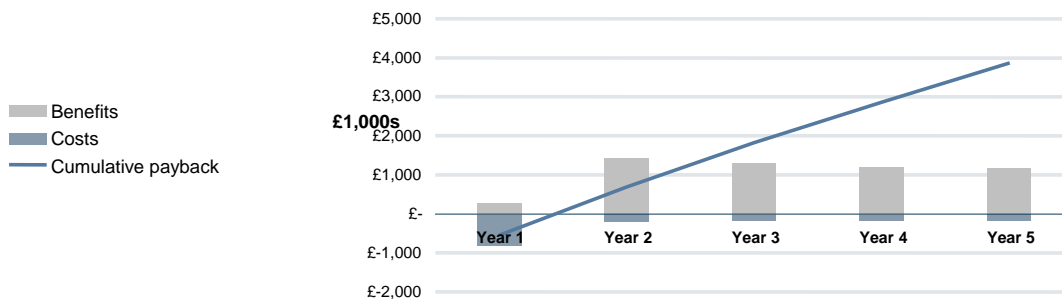
A combined Level 1 and Level 2 solution will have:

- a **cashable payback of over £3.8million over a five year project**
- a **non-cashable payback of over £375k** over the same period
- **substantial qualitative benefits** as outlined in the graph to the below:



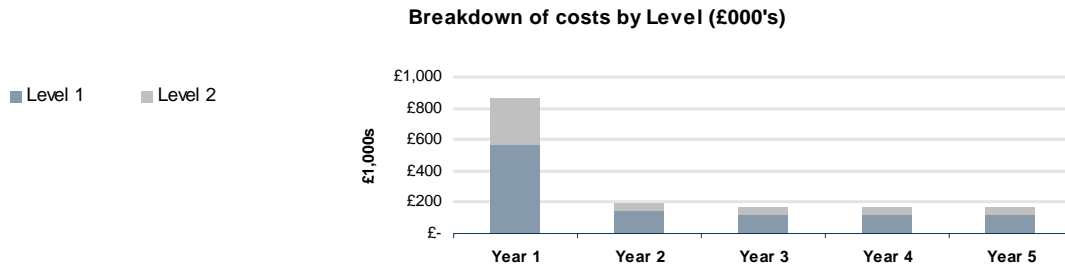
The more detailed breakdown below shows that **the project will have a net payback 18months after it commences** and will continue to payback beyond the five year period.

(£000's)	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Costs	£ -824	£ -190	£ -165	£ -165	£ -165	£ -1,508
Benefits	£ 280	£ 1,428	£ 1,300	£ 1,202	£ 1,171	£ 5,381
Cashflow	£ -544	£ 1,238	£ 1,135	£ 1,037	£ 1,007	£ 6,889
Cumulative payback	£ -544	£ 694	£ 1,829	£ 2,866	£ 3,873	



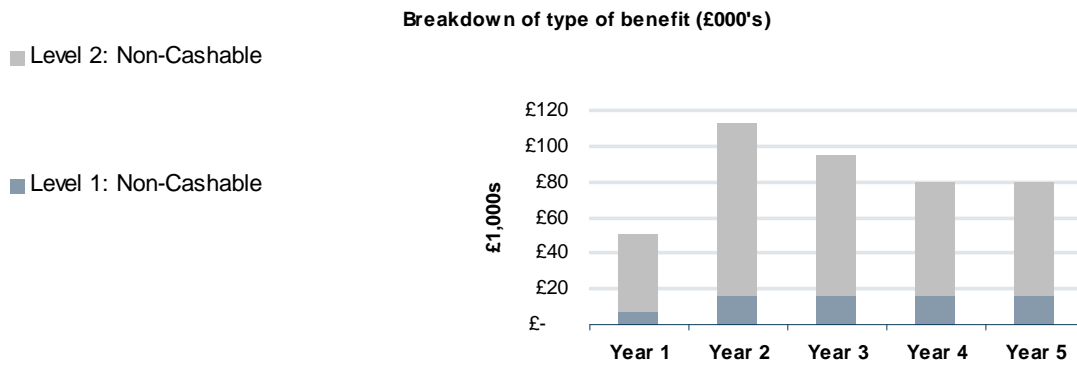
It is important to note that though £3.3million of the benefits over 5 years are attributable to the Parking service the project will offer a more modest positive payback without it.

The graph below shows the breakdown in costs between achieving Level 1 and moving to a Level 2 solution.

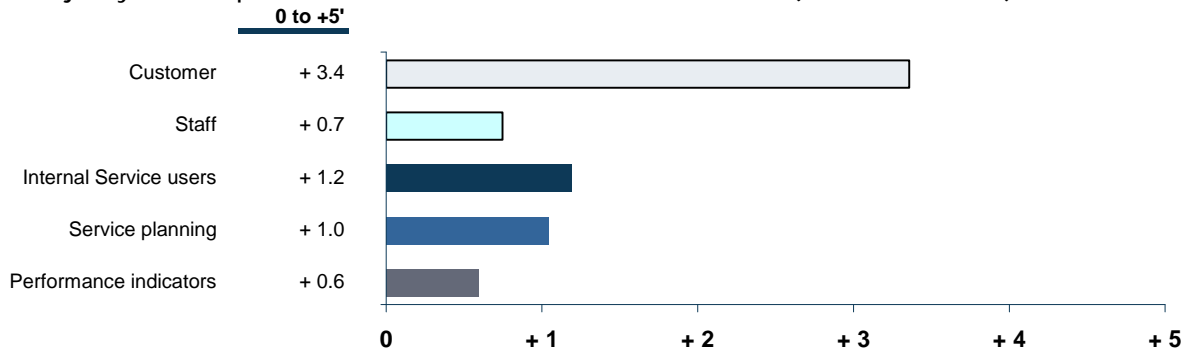


Moving to a Level 2 solution incurs approximately 50% again of the cost incurred when implementing a Level 1 solution. Closer examination of the benefits at each level reveals that **all the cashable benefits are realised at Level 1** (over £5.5m over the five year project).

Though the chart below shows that the non-cashable payback is achieved from Level 2, **Level 1 solutions present the strongest business case at this time.**



The majority of the qualitative benefits are achieved at Level 1 (see chart below).



The decision as to whether or not to move to Level 2 would need to be based on an assessment of the importance of the qualitative benefits to the authority and the other projects that could leverage the technology platform. It seems likely that the **push toward more sophisticated CDI solutions will get more traction in future** as the technical barriers and costs become less prohibitive owing to the trend towards more open adaptors, APIs and web services for line of business applications. The contributing costs, benefits, ROI and risks for Level 1 and Level 2 are shown below.

7.1 Level 1

7.1.1 Costs

In order to achieve Level 1 Customer Data Integration (CDI) and provide the Single Customer View a number of costs must be incurred both in terms of establishing the technology and also ensuring staff are trained to use the technology and therefore to realise the benefits it brings. Beyond the setup period there are also a number of costs that will be incurred on an ongoing basis.

The following table outlines the costs incurred in putting in a level one CDI solution. The costs are based on the implementation of the project plan outlined in Section 5.5. The detail behind the cost calculation is provided in the CDI ROI Calculator that accompanies this report.

People			
	<i>Description</i>	<i>Basis</i>	<i>Value</i>
One-Off	Project Manager - Developing Scope - Specification & Procurement - Project Management - Training - Benefits Realisation	191 days effort	£112,690 CASH PAYABLE
	System Owner - Providing technical details for systems	2 days effort	£429 NON-CASH
	Service Area Representatives - Input to scoping interviews	5.5 days effort over 22 reps	£1,180 NON-CASH
	Project Board - Agree scope - Procurement of solution - Monitor project	5.5 days effort over 11 reps 55 days effort over 11 reps 3 days effort over 11 reps	£27,583 NON-CASH
	Service Area Staff - Receiving training on use of the CDI solution	50 days over 50 staff	£6,705 NON-CASH
	IT Technician - Installation of CDI client	22 days	£2,414 NON-CASH
Ongoing	Data Stewards - Manually matching data	2FTE	£82,600 p.a. CASH PAYABLE
TOTAL		One-Off	£112,690 CASH £38,310 N-CASH
		Ongoing	£82,600 CASH

Technology / Services				
		<i>Description</i>	<i>Basis</i>	<i>Value</i>
One-Off	CDI Solution		Software, installation and initial matching	£400,000 CASH PAYABLE
Ongoing	Maintenance/Support for CDI software		10% of initial cost	£40,000 p.a. CASH PAYABLE

Note on Integrating Systems to CDI

For the purposes of this ROI calculator it is assumed that the cost of integrating the business system datasets with the CDI solution is all incurred during the setup period. In practice, project teams should expect the cost to be spread out over a longer period as services usually elect to join the 'hub' over time rather than all in one go.

Project teams should also expect services outside the initial scope to be interested in joining the project which though it will mean incurring additional cost should also achieve additional benefits.

7.1.2 Benefits

Level 1 CDI solutions give local authorities the power to take a single customer view that combines information on customers from all the source systems.

The following table outlines the time and money benefits of a Level 1 CDI solution and the average values for a London Borough. The detail and sources behind the benefit calculations is provided in the CDI ROI Calculator that accompanies this report.

Level 1 Cashable Benefits				
		<i>Description</i>	<i>Basis</i>	<i>First Full Year Value</i>
Overpayment & Fraud	Benefits	Recovering more money through detecting more cases of overpayment	Additional 1% increase recovered	£145,000
		Preventing distribution of benefit to deceased customers	50% detection of deceased clients who continue to receive benefit	£15,000
		Reducing fraud where person claiming 'right to buy' discount sells property within discount period and does not lose discount	20% detection of estimated 10% fraud	£32,000
		Reducing fraud where person on housing benefit is claiming 'right to buy' council property	20% detection of estimated 10% fraud	£32,000
	Housing	Reducing fraud due to duplicates and inaccuracies in the system	20% detection of estimated 1% fraud	£91,200

Increased Revenue	Council Tax	Reducing fraud where a deceased person's council house is not returned to council housing stock	50% detection rate	£18,720
		Reducing lost revenue through not claiming money from properties declared empty, but with residents	30% detection	£4,263
		Reducing Single Person Discount abuse	25% detection	£267,500
		Increasing collection of council tax from people who have moved into borough	10% detection rate on 10% fraud	£55,000
		Increased likelihood of payment because people who have not paid CT are picked up earlier	15% increase in success rate as picking up within 3 rather than 9 months	£24,750
Parking		Amount of extra income received through successful chasing of PCNs	20% success with previously un-recovered debt	£748,000
TOTAL			Total	£1,433,433
			Excluding Parking	£685,433

Full Parking benefits calculations

Additional PCN Income

Average # of PCNs issued by a London Borough	= 220,000	
Percentage not recovered	= 17%	(= 37,400 PCNs)
Percentage of these recovered due to CDI solution	= 20%	(= 7,480 PCNs)
Average maximum value of PCN	= £100	(= £748,000)

Level 1 Non-Cashable Benefits			
	<i>Description</i>	<i>Basis</i>	<i>First Full Year Value</i>
Housing	Reduced number of aborted repairs visits	30% reduction in aborted visits through better contact details	£12,000
	Reducing staff time spent on fraudulent housing applications from customers from inaccurate addresses	25% reduction of time spent on fraudulent applications	£707

<i>Benefits (Housing and CT)</i>	Verifying client details at the start of the application process	Reduction in number of applications involving inaccuracies or errors	£1,215
	Reducing time spent validating addresses (specifically) for housing applications	50% reduction of time spent verifying customer addresses specifically	£2,261
TOTAL			£16,183

Note: There is a wide range in the value of benefits (for instance £707 of potential non-cashable benefit has been detected due to duplicates in Housing, while £748,000 potential cashable benefits are estimated in Parking through more effective debt management). Both have been included for the purposes of consistency.

Qualitative Benefits

Other than the cashable and non-cashable changes in expenditure of resources and revenue collection CDI solutions offer a number of important qualitative benefits (scored on a scale from 1 to 5 with 5 high) as summarised in the table below:

Level 1 Qualitative Benefits			
	<i>Description</i>	<i>Scale of Impact (1-5)</i>	<i>Who Benefits</i>
<i>All</i>	Improved customer profiling to offer more personalised service	4	Service Planning
	Speedier service delivery from access to complete customer record	4	Customer
	More proactive service from identifying changes in circumstance	4	Customer
	Helps keep customers well informed about available services	3	Customer
	More accurate population data	1	Service Planning
	Directing services towards neglected groups	4	Customer
<i>Customer Services</i>	Speedier service delivery from access to complete customer record	3	Customer
	Better tailoring of contact to customer circumstance from better customer data	2	Customer
<i>Benefits</i>	Inform clients about benefits they are eligible for but not claiming	5	Customer
	Reducing disruption caused by cross service	4	Internal

	queries and validation		service user
	Flagging more potentially fraudulent cases to the Audit and Investigation Team	3	Staff
<i>Housing</i>	Improved ability to track cases of customers sub-letting council properties	2	Customer
	Placing customers in more suitable housing	2	Customer
<i>Council Tax</i>	Proactive contact with new residents to inform of requirement to pay Council Tax	1	Customer
	More intelligent chasing of outstanding debtors based on their profile	2	Service planning
<i>Children and Families</i>	Identifying children potentially at risk who are not known to Childrens & Families	5	Internal service user
	Personalised service reflecting change of circumstances	3	Customer
	More joined up working between teams in department	3	Internal service user
<i>Adult Social Services</i>	Increasing awareness and take up of freedom passes	3	Customer
	Verifying information obtained in home care assessments	3	Internal service user
	Reducing fraudulent disability grant claims	1	Service planning
	Reducing time spent verifying if a customer is receiving benefits	3	Internal service user
<i>Schools & Education</i>	Identifying children who are playing truant	1	Performance indicator
	Increasing take up of free school meals	2	Customer
	Verifying school applications	3	Staff
<i>Libraries & Cultural Services</i>	Personalising library services to specific groups based on increased knowledge	3	Customer
	Improving library take up	4	Performance indicator
<i>Electoral Roll</i>	Improving accuracy and coverage of Electoral Roll	5	Performance indicator
	Personalising service reflecting change of circumstances	3	Customer
	Increased trust between customer and Council	2	Customer
<i>Registrars</i>	Improving sharing between Registrars and other service areas	3	Internal service user
	Reducing amount of information request calls between service areas	4	Staff
<i>Parking</i>	Improved ability to detect blue badge misuse	1	Customer
	Faster processing of permits applications and renewals	3	Customer

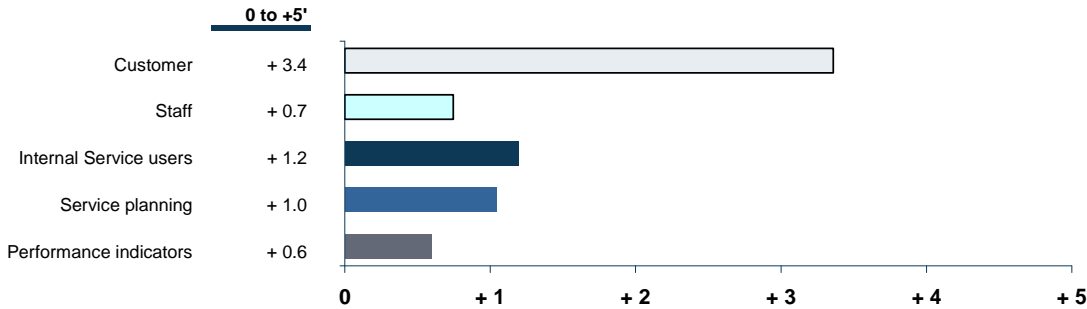
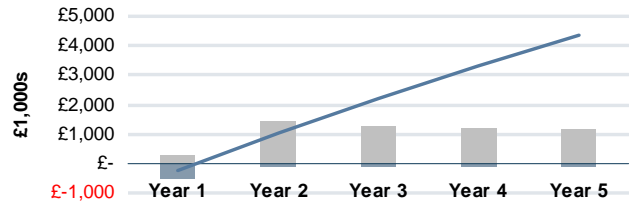
7.1.3 Return on Investment

The business case for a Level 1 CDI solution is outlined below. All figures are in thousands of pounds.

With Parking

Set up costs	£	513
Ongoing costs	£	527
Cashable benefits	£	5,381
5 Year Payback	£	4,341
NPV	£	3,845
Non cashable impact	£	33

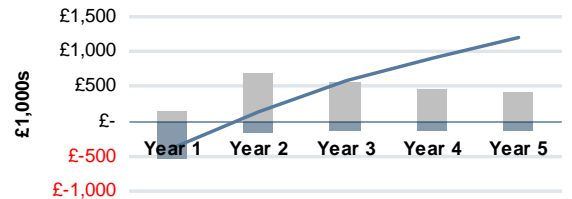
Benefits
 Costs
 Cumulative payback



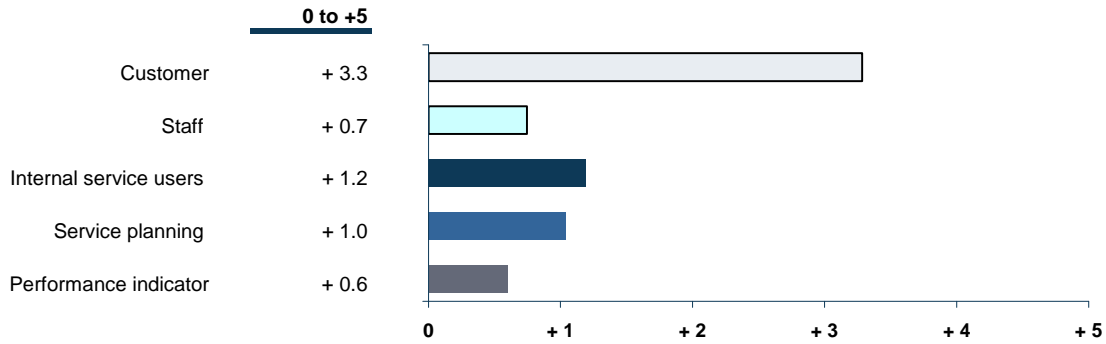
Excluding Parking

Set up costs	£	512
Ongoing costs	£	527
Cashable benefits	£	2,243
5 Year Payback	£	1,204
NPV	£	1,050
Non cashable impact	£	36

Benefits
 Costs
 Cumulative payback



Data Connects - Business Benefits of Customer Data Integration



7.1.4 Risks

The following set of risks has been identified for the generic project:

	Short description	Likelihood	Impact	Notes
E1. A	Data security	3	5	More staff will have access to more information about a customer; this raises data protection and data privacy issues
E2. B	Staff buy-in	3	5	Staff need to be comfortable with using new applications otherwise they will not use it. Service areas need to trust the data from the CDI solution.
E3. C	Technology specification fit	2	5	Council needs to procure software that fits their needs, avoiding a systems led approach
E4. D	Customers do not want to provide data	2	4	Data can be collected only opportunistically, not systematically, because many customers do not want to provide information that will be used for services they have not asked for
E5. E	Funding not available	3	5	High likelihood that funding will not be available
E6. F	Change management not carried out properly	2	3	BPI will probably be necessary to implement CDI solution correctly
E7. G	Ownership of data can be unclear	2	1	Ensuring that there is collective responsibility about data, not just IT thing
E8. H	Lack of clear senior management buy-in to cross council data sharing	3	4	Service areas may not want to provide data. Management and elected members need to be behind the project over a long period (i.e. even when new people and/or parties are elected).
E9. I	Uncertainties in existing data quality	3	4	Lack of clarity about existing data quality and the investment needed to improve it may affect the return on investment. Also, some service areas will contain a large mass of low quality data. Matching this against high quality data may result in a large mass of unmatched data.

7.2 Level 2 – Improving Data Quality

7.2.1 Costs

In order to achieve Level 2 Customer Data Integration (CDI) and improve Data Quality throughout the enterprise authorities must invest everything they did to reach a Level 1 solution plus some additional costs associated with the deeper integration that is needed.

The following table outlines the additional costs incurred in moving from a Level 1 to a Level 2 CDI solution. The detail and sources behind the cost calculation is provided in the CDI ROI Calculator that accompanies this report.

People			
	<i>Description</i>	<i>Basis</i>	<i>Value</i>
Ongoing	IT Technician - maintenance of integration solution	1FTE	£29,500
TOTAL		Ongoing	£29,500

Technology / Services			
	<i>Description</i>	<i>Basis</i>	<i>Value</i>
One-Off	Adaptors	2 x £60,000	£120,000
	Middleware	£100,000	£100,000
	Screenscraper	£50,000	£50,000
Ongoing	Maintenance/Support for Adaptors	Included in system support	
	Maintenance/Support for Middleware	Performed by IT Technician	
	Maintenance/Support for Screenscrapers	25% of solution cost	£12,500 p.a.
TOTAL		One-Off	£270,000
		Ongoing	£12,500

7.2.2 Benefits

Level 2 CDI solutions give local authorities the power to improve the data quality across the enterprise taking the best information available from across the source systems.

The following table outlines the time and money benefits a Level 2 CDI solution offers above and beyond a Level 1 solution and the average values for a London Borough. The detail behind the benefit calculations is provided in the CDI ROI Calculator that accompanies this report.

Level 2 Non-Cashable Benefits			
<i>Description</i>		<i>Basis</i>	<i>First Full Year Value</i>
<i>All</i>	Reduced staff time searching for correct customer telephone number	30% reduction in instances where staff struggled to find correct phone number	£29,165
	Reduced time re-keying information into more than one system	Reducing number of systems where same information is keyed in by average of 3	£43,332
<i>Customer Services</i>	Finding customers more quickly because of fewer duplicates in system	20% faster location of customer details	£1,658
	Reduced time entering duplicates onto system	50% reduction in duplicates	£377
<i>Adults</i>	Reducing time spent cleaning up duplicate data	Reducing time spent identifying, cleaning and merging duplicates	£22,278
TOTAL			£96,810

Qualitative Benefits

Other than the cashable and non-cashable changes in expenditure of resources and revenue collection Level 2 CDI solutions offer a number of important qualitative benefits (additional to Level 1 and scored on a scale from 1 to 5 with 5 high) as summarised in the table below:

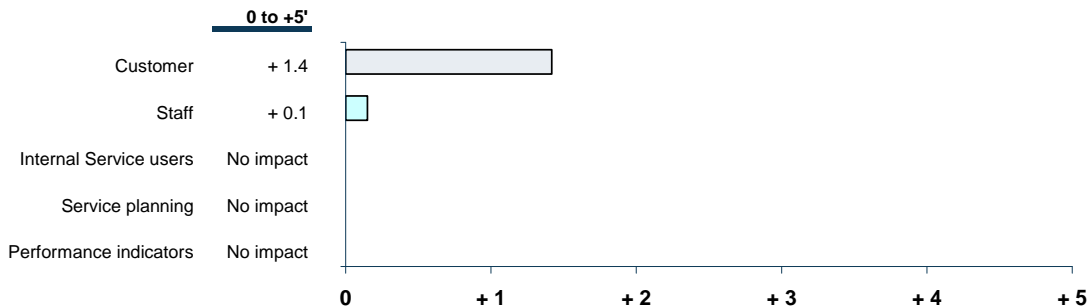
Level 2 Qualitative Benefits			
<i>Description</i>		<i>Scale of Impact (1-5)</i>	<i>Who Benefits</i>
<i>All</i>	More consistent service	4	Customer
	Improves NI 14 figure (reducing avoidable contact)	3	Performance Indicator
	Provides platform for future transformation	2	Customer
<i>Benefits</i>	Identifying change of circumstances known to Council but not Benefits	3	Customer
<i>Housing</i>	Avoiding aborted visits to tenants by confirming appointments by telephone	2	Staff
	Reminding customers about overdue rent arrears through preferred access channel	3	Customer
<i>Council Tax</i>	Provide Direct Debit statements through preferred customer access channels	2	Customer

<i>Adult Social Services</i>	Maintaining accurate list of people who do not want to be contacted by council	2	Customer
<i>Libraries & Cultural Services</i>	Improving quality of service by contacting customers via preferred channel	1	Customer

7.2.3 Return on Investment

The business case for moving from a Level 1 to a Level 2 CDI solution is outlined below. All figures are in thousands of pounds.

Set up costs	£	270
Ongoing costs	£	199
Cashable benefits	£	-
5 Year Payback	£	-469
NPV	£	-440
Non cashable impact	£	345



Note that in the CDI Calculator Model if you pick Level 2 it is Level 1 plus 2 – this is to reflect the fact that most people are starting from zero and therefore need to assess what Level to aim for.

7.2.4 Risks

Moving to Level 2 from Level 1 exposes the same risks identified for Level 1 but also some additional ones. The two key additional risks are:

- **Difficulties with technology** – many of the systems in use in local government are based on proprietary manufacturer specific standards. Good quality adaptors for these systems are often hard to come by and could mean that the project is not technically feasible within a reasonable budget
- **Poor decision making on automatic updates** – Level 2 solutions are most powerful when there is an automated process in place for updating customer data to the best available version. However, there is a risk that those included in the Level 2 solution will always want to manually approve changes but not grant sufficient time in the day to do the necessary checking work.

7.3 Additional but excluded benefits

Beyond the benefits identified for Level 1 and Level 2 above, a good CDI solution can act as enabler in three important areas:

1. Enabling transactional integration between systems

One of the great unrealised dreams in local authority business processes is the true deep integration of transaction data to and from business systems. It is becomingly increasingly common to find one way transference of transactional information between systems e.g. initiating the investigation of a reported pothole from a CRM system to a street management system. However, the lack of integrated and matched customer information means that matching this customer as the same person who also reported some fly-tipping online and being able to offer information on both reports through a single channel is impossible.

2. Maximising benefits from new/improved datasets

There are a number of companies that specialise in improving data quality (address data being a particularly common choice) and they will work with individual services to improve individual databases. However, these services can be expensive and the business case within one service may not be attractive. Authorities that have a CDI solution in place will be able to think more strategically about their customer data and track benefits not only within a single service, but across the enterprise.

3. Moving towards Master Data Management

We define Master Data Management (MDM) as the use of appropriate tools and processes to centrally define and control changes to non-transactional data that is common to more than one area of the business to maintain a 'single version of the truth'. MDM is a well developed discipline in the private sector and is gaining increasing traction in the public sector. Customer data is one of the most important data sets held by a local authority and applying CDI is a big step towards MDM in this area.

MDM, CDM and CDI

These three acronyms, although different, all refer to related disciplines. When we use the terms we mean the following:

- MDM – the management of a single master record of any type.
- CDM – the management of customer data which can include but is not limited to the customer master data
- CDI – a specific type of solution that has three levels of maturity (see Section 5). It is an important tool in customer data management

Appendix A – Customer Data Integration case studies

1. **Westminster City Council:** Personalising council services by matching property and service area data
2. **London Borough of Croydon and Croydon PCT:** Improving Care Provision in Croydon through CDI
3. **London Borough of Hammersmith & Fulham:** Applying CDI to drive democracy
4. **Outcomes from RSe interviews with Service Areas.** RSe interviewed XX local authority service areas to find out the potential impact of CDI on them

Note: We have not included case studies on CDI projects undertaken in the London Boroughs of Brent, Lambeth, Newham or Southwark – their work is already widely known to Data Connects members and the purpose of this report was to highlight new experiences. However, if you would like to find out more about these projects, please contact Data Connects or RSe Consulting (our contact details are at the end of this report).

1. Westminster City Council

Personalising council services by matching property and service area data



The Challenge

The personalisation of services is a growing trend in the public sector. Westminster City Council (WCC) is an excellent council and was keen to be at the forefront of this trend, particularly in customer services (which is the first point of contact residents often have with the council).

WCC's vision was for a service that was quicker and more interactive:

1. **A faster means of accessing customer information:** if staff could establish customer details just from asking their name and post code, the customer would be asked less repeat questions. This would save staff time and improve customer satisfaction (and encourage a positive view of the council).
2. **A personalised website for residents:** this would highlight local services in a customer's vicinity and explain how the customer could get more out of their council (e.g. register with electoral roll, or see if they are eligible for benefits). This would empower residents and save the council money through shifting communication to a cheaper access channel.

Any solution delivering the above would rest on good quality, accurate data. With the advent of the NLPG and the LLPG, WCC had access to this for properties. The challenge was matching this to other customer records.

The Solution

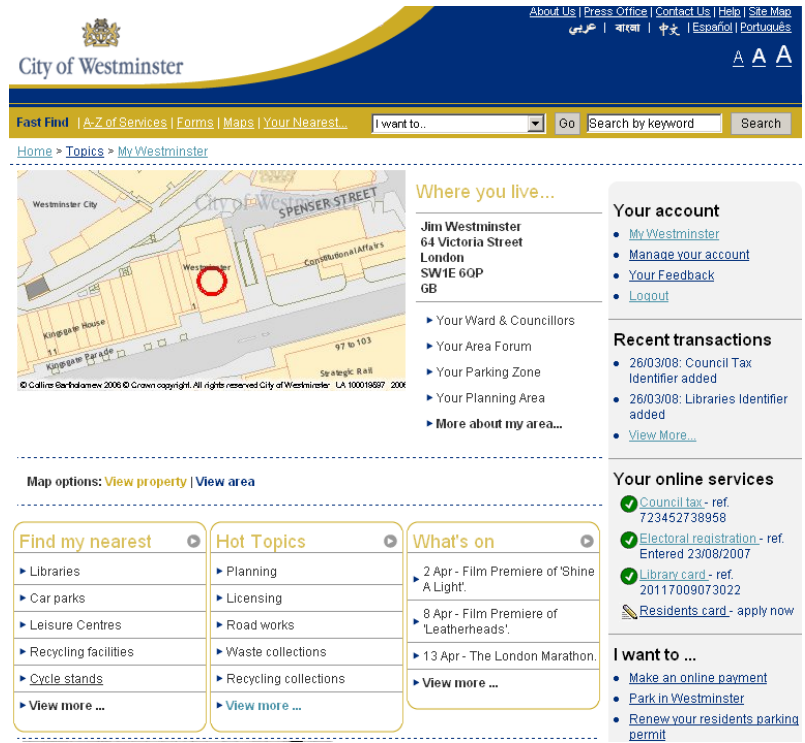
WCC was already carrying out a major data cleansing exercise prior to the call for improved customer services. Four service areas were involved in this: Electoral Registration, Libraries, Resident Cards (discount cards for local events for council residents) and Council Tax. Names and addresses in their databases were cleansed and matched to create a master record, which was uploaded into the CRM system. The CRM was then linked via a web interface to NLPG and LLPG databases to ensure details are based on accurate property records.

Following the data cleansing exercise, WCC were able to do the following:

1. **Implement 'Citizen 100'** – When a customer calls the council, the customer services staff ask for the

customer's name and post code. This information is entered into the CRM system – see the screenshot to the right. This is linked to the NLPG and the LLPG and staff are presented with a 'pop up' of the customer's details.

2. **'MyWestminster'**. Data from the four service areas (mentioned above) is joined in the CRM with data from the LLPG and the NLPG; this is the backbone behind personalised websites for residents. This allows residents to discover their nearest libraries, galleries, citizen advice bureau and other council services and to register for council tax, electoral roll, and library and resident cards. The screenshot on the right is an example of what 'MyWestminster' looks like.



The Impact

The impact of the caller history and personalised websites features has been positive:

- **Take up of 'MyWestminster'**: Around 10,000 residents have signed up to the personalised website since its launch in October 2007. This has taken out paper forms and streamlined the Resident Card process
- **Capture of equality information**: Self-service has boosted the likelihood of customers providing information about their ethnicity (73% success rate)
- **New residents seem to benefit the most**: new residents can pick off all the things they need to register for and familiarise themselves with local council services quickly and easily
- **Automation of services**: For example, Resident Cards has been able to move the service entirely to CRM, eliminating paper forms completely

Lessons learnt

- **Know your data quality**: before the data cleansing exercise, WCC estimated how good data quality was in the chosen service areas. Some service areas turned out to be lower than expected, and needed further work down the line – if you are unsure, leave out the data for now
- **Online services rely on clean data**: without it, the benefit of reducing re-keying is missed out on
- **'Pre tidying' data will improve address data matching**: WCC were able to improve data matching by 50% through assessing and repairing data

2. London Borough of Croydon



Improving Care Provision in Croydon through CDI

The Challenge

Croydon Social Care (CSC) and Croydon Primary Care Trust (PCT) were keen to provide better coordinated services to Adults and Children in the borough. They realised that working separately as they did, duplicated work and failed to fit the customer's needs. Customers were often asked to repeat the same information to staff from the CSC and the PCT, and staff were frustrated because they knew the information they needed was available, but they could not access it.

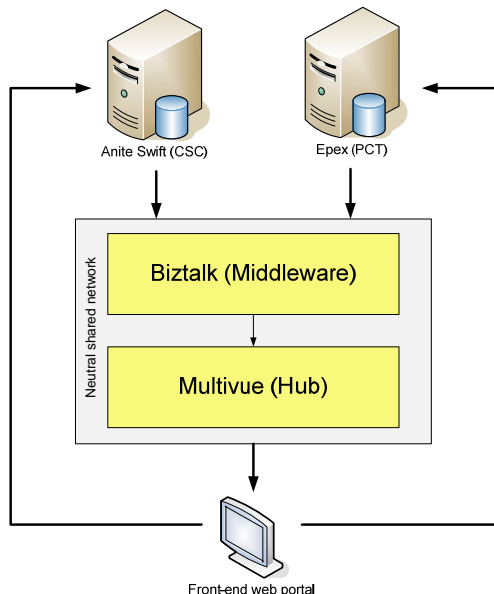
The two organisations were under particular pressure to resolve this issue as the imminent 'Single Assessment Process' or 'SAP' (2004) called for health and care agencies to offer a more cohesive service and to share information appropriately. Croydon also anticipated the impact of further information sharing requirements such as ContactPoint (2008), and hoped to pre-empt them through a single solution.

Note: This case study focuses on the implementation of the Adults solution. A similar solution has been implemented for Childrens based on the infrastructure for Adults.

The Solution

CSC and the PCT agreed that the most appropriate way to share information appropriately and reduce the amount of duplication in information gathering was by implementing a Customer Data Integration (CDI) solution.

The diagram below is a high level summary of how the project was planned:

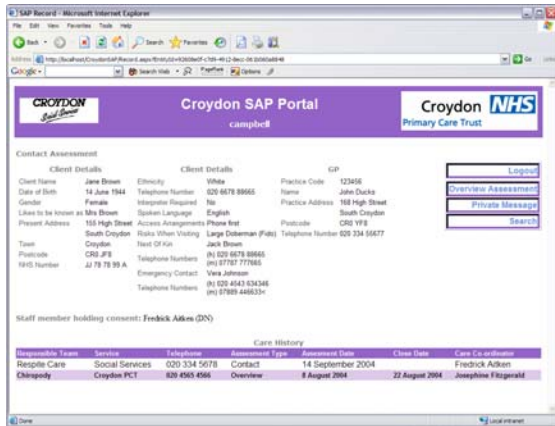


CSC and PCT both had strong line of business systems in place (Anite 'Swift' and ePEX respectively). Core to Croydon's approach was the idea that staff in both agencies should not have to drastically transform their working practices in information collection. One of the project's intentions was for staff to reduce the number of questions they asked customers, but it was agreed that this should happen by sharing databases rather than changing information gathering practices.

The first stage of the project was to create a common customer index, matching records from both of the original systems. Approximately 150,000 records from Swift were reconciled against 280,000 records in ePEX. This exercise took three months using a middleware package (which provides a mediated messaging

service) and a 'Hub' (a central storage database where matching takes place).

With information collected in a central pool a front end 'SAP' web-portal, connected to the hub, was designed in consultation with CSC and PCT staff to enable access to the joint knowledge.



This screenshot shows how basic information (such as name, telephone number and date of birth) was stored alongside more specific health and social care data (such as GP, risks when visiting, teams responsible and the type of care being received). Staff from both agencies could log into this web-portal to get a single customer view and access information not present in their individual systems.

With the Level 1 CDI solution established, Croydon have already been able to improve data quality e.g. through a reduction in duplicate records and are considering whether to move to Level 2 and use the pooled knowledge to more actively improve data quality across individual systems. If for example, CSC staff note that a customer's address has changed in Swift, this information is fed into the Middleware and Hub. This change to the record could be fed out to ePEX automatically or an e-mail alert could be generated for the ePex system administrator.

With the Level 1 CDI solution established, Croydon have already been able to improve data quality e.g.

Security and data protection are always important when CDI is concerned, but this is particularly so in health and social care where the demands of the Caldicott principles apply. The agencies put the following measures in place:

- **A neutral shared network:** the central hub and middleware applications were held in a DMZ ('De-Militarized Zone'). Access levels determined which information could be viewed by staff.
- **Strict firewalls around Swift and ePEX:** these meant different agencies could not access each other's information except through the CDI (where access levels were applicable)
- **Consent box had to be ticked before information was shared:** when entering data into their system, staff had to tick a special field to confirm that the customer had consented for their details to be shared.

The Impact

The CDI solution has had an overall positive impact at Croydon. Developments have been based on a pragmatic approach utilising grant funding and existing staff resources to deliver a strategic and scalable technical solution for secure information exchange across local agencies. Recently this has extended to provision of mobile access to the 'hub' providing access to a range of multi-agency information and systems.

The system was developed to provide key items of information that practitioners identified as important for their work. Initially, staff from both agencies were enthusiastic and made good use of the system. However, changing priorities have led to a reduction in the recording of 'consent' data which is a fundamental information governance requirement. As information is only sent to the 'hub' where explicit consent is recorded the level of information being shared in the SAP Portal has reduced together with the level of use by practitioners. Manager's are reviewing this problem and determining how to resolve this difficulty.

Despite the problems, the project board remain buoyant about the long-term benefits of CDI. Information sharing is a permanent fixture on the social services agenda, as demonstrated by the importance of ContactPoint. Croydon is well-positioned to meet these new requirements given the technical infrastructure, partnership working relationships and experience it has gained through the development of CDI solutions locally. The 'hub and spoke' approach used means other agencies and systems can be integrated in as and when required; future ambitions include feeding in Housing, and Mental Health records.

3. London Borough of Hammersmith and Fulham

Applying CDI to drive democracy



The Challenge

Local authorities need to maintain an accurate version of the Electoral Register, and do so through two exercises - an annual canvass of all properties, and “rolling registration” publishing updated registers every month from January to September. Ensuring the Register is accurate is a constant challenge because:

- people are moving in, out and within the borough
- new properties are built up and old properties are knocked down
- the Electoral Administration Act (2006) committed registration officers to maximise registration, to contact anyone who is not registered, and allowed registration up to 11 working days before an election (previously it had been six weeks).

These pressures are especially acute in the London Borough of Hammersmith and Fulham, where population turnover is high (between 30 and 40% per year in some areas). When the annual canvass was undertaken between September and December 2007 for instance, Hammersmith & Fulham Electoral Services found that 2,500 households had already changed address by the end of the exercise.

The Solution

In 2006, Hammersmith and Fulham rolled out a CDI application (Client Index Notifications Manager or CINEMA) across the authority. It picks up changes to customer records and feeds these changes daily to the relevant service areas that could also be impacted. The service areas then have the choice of accepting or rejecting that change to their records. The screen shot to the right demonstrates the ‘notification’ that service areas receive. Service areas can also run ‘alerts’ from the application. These are more practical than ‘notifications’, concentrating on people moving into the borough for instance but not minor alterations – this makes the workload far more manageable for service area teams to deal with.



The Electoral Services team have been using the ‘alerts’ to enhance the accuracy of the Register. The ‘alerts’ compare the Electoral Register against other council databases (including

Council Tax, Benefits and Parking Permits) and return the latest discrepancies appearing because of new information. If a person has moved into a property, Electoral Services can write to that property – using a personalised letter and reminders, if needed, in order to register them. Equally importantly to prevent out-of-date entries, personalised letters can be written to people who have moved out – if there is no response, they can be removed from the register.

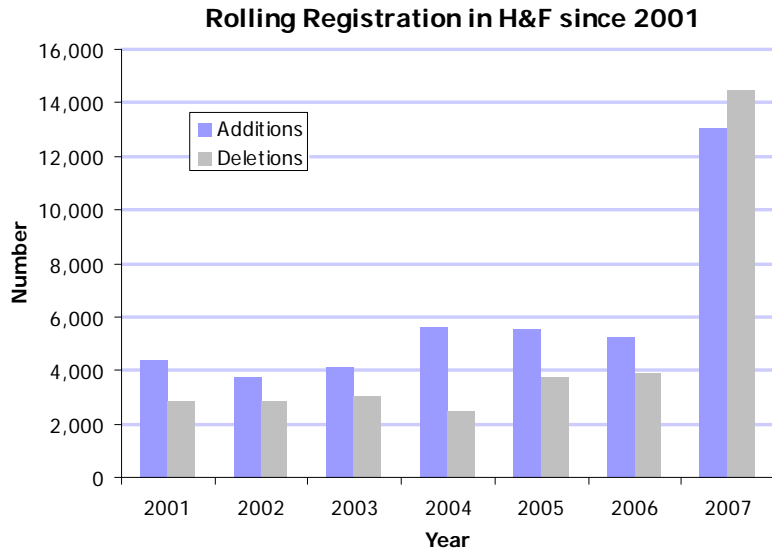
The Impact

Following the introduction of the CDI application Hammersmith and Fulham

- Added 13,091 new electors during rolling registration (compared to 5,255 in the previous year)
- Removed 14,467 old electors (compared to 3,915 in the previous year)

It is estimated that making these additions and deletions during the annual canvass would have taken three months full time of an SO1 grade council employee, equating to more than £9,000.

This is a great success and one that will help the authority deal with new pressures following the Electoral Commission's announcement of new performance measures in October 2007 for more effective registration.



Introduction of CDI

Appendix B – Overview of benefits by service

Customer Services

Through accessing a Council wide CDI Hub customer services staff will be able to present a professional and well informed front to customers. Of particular use will be the ability to access reference numbers, booking details etc. from Line of Business specific systems as well as having the most up to date information available e.g. if a customer has told Council Tax they are moving within the borough then customer services should know this as well.

As well as knowing what services a customer is receiving, customer services will also know what services are not being received that might be appropriate e.g. do they know how to register on the electoral roll, are they well informed on the benefits they could be claiming etc.

Having additional contact details such as up to date phone numbers, mobile numbers and e-mail addresses retrieved and shared through the Hub will enable pro-active contact through cheaper automated channels e.g. SMS notification when a request has been processed. Phone numbers in particular could help with screen popping of customer records where systems exist.

Pro-active contact / notifications could block avoidable contact.

The time spent searching for customer records and entering customer information should be reduced by the elimination of duplicates using the CDI solution.

Benefits

The Benefits service will be able to use a CDI solution to make improvements that benefit customers and Council alike. The CDI Hub could provide powerful information to identify:

- Those that may be eligible for benefits but who are not claiming them – pro-active delivery
- Identifying known 'Change of Circumstances' cases from other service areas which require follow up by benefits e.g. change of address
- Flagging leads to the Audit and Investigations team where benefits records are inconsistent with those of other services e.g. occupancy. Common frauds that this could help with include:
 - Payments of household benefit to deceased persons
 - Ongoing payments to care homes after the resident has died
 - Overpayment of benefits based on false details
 - Claiming 'right to buy' whilst on benefits
 - Discounts are offered under right to buy (£38k at Southwark). People shouldn't sell within an agreed period or they have to pay back the discount.

The hub could also make it easier to verify client details at the start of the application process and reduce the amount of time spent validating addresses. The authority could leverage Benefits information to improve their own services without having to contact Benefits itself and

also give Benefits additional data sources for verification and cross-checking at the start of the application process.

Housing

The Housing service can expect to make some savings by using collated contact information from the CDI Hub to contact customers to:

- Check scheduled repair appointments are to be kept
- Reduce the time spent processing fraudulent housing applications

Having customer information available from across the enterprise should enable housing officers to make more accurate allocation of stock by avoiding problems such as placing families with disabled children in flats with no lift access.

Housing should also benefit from more precise, satisfying operations from:

- Up to date contact information
- Standard format addresses
- Pro-active or personalised service to reflect changes of circumstances e.g. Births, Deaths, Marriages, illness, children leaving school that will change the way in which the service is provided or debt managed
- Knowledge of households from other service areas that may impact on eligibility or placement.

Having a CDI hub in place should also allow housing officers to identify potential instances of sub-letting of social housing.

Other frauds:

- Fraudulent Applications
 - Should be living in the borough
 - Using "Clearing Houses" belonging to friends
 - Can identify up front that fraudulent and deal with.
 - Need # fraudulent x additional processing time
- Tenant dies, but the house stays with the family and just sub-let
- Shouldn't be able to make right to buy application if on benefits – either cheating one or the other

Customers could also be reminded of rent payments through appropriate channels such as text messages using the more comprehensive contact detail set offered by the CDI hub.

Council Tax Revenues

Council Tax collection should be able to improve services for new customers, existing customers and customers in arrears using a CDI solution. New occupiers can be pro-actively contacted following first contact regardless of where it has come from. Existing customers could receive information through cheaper and more convenient channels e.g. Direct Debit customers could have monthly e-mail statements to confirm a payment has been made. Where customers'

circumstances change e.g. illness or disability then pro-active support and benefits measures could be undertaken to compliment the work of other services.

Where customers are in arrears the hub could be used to identify if other money is owed to the Council or whether the circumstances known suggest the customer can't pay or won't pay e.g. those with an ASC relationship might be better handled through the social care teams than bailiffs. Where bailiffs are instructed the additional information that the hub could provide may prove useful.

The CDI solution would also help maximise revenues where appropriate by:

- Identifying cases of Single Person Discount abuse
- Identifying properties declared vacant but showing signs of occupancy activity
- Catching transient population – people only in for a few months and then leave

Children's Services

Children's services teams have identified the need to work more closely across the legacy divides between Social Services, Education, Youth Offending and Connexions. Having a CDI Hub in place would support the move to smarter cross-specialism joined up working in which all practitioners follow an Assessment, Planning, Intervention, Review process but with the knowledge of what other services are being delivered and in what way.

A CDI hub could:

- Increase the chances of identifying children at risk based on a cross-service profile
- Allow teams to offer personalised services reflecting changes in circumstance
- Increase take-up of free school meals by identifying those that are eligible but not claiming
- Reduce the effort associated with processing school applications – it will be much easier to identify the true address for the child

Adult Social Care

A CDI solution could benefit Adult Social Care through:

- Reducing the volume of duplicates; less time would be spent identifying, merging and cleaning records, and there would be less confusion for social workers about which records to use
- Improving the ability of the council to verify customer details. This could help reduce fraud. For example, the council would be able to verify the permanent addresses of people claiming disability grant, helping them decide who genuinely needs help and who is falsely claiming aid
- Alerting (and being made aware of) changes in circumstances. For example, if a disabled person moved to the borough, the team could proactively offer its services

The CDI hub could help identify those eligible for benefits such as freedom passes and reduce the amount of time taken to identify what benefits the customer is already in receipt of. It

should also make the maintenance of the list of customers who do not wish to receive services or be contacted about them.

Libraries

Having a CDI solution in place should give Libraries access to additional contact details such as e-mail and SMS. These cheaper automated channels as part of pro-active service delivery e.g. automatic reminders that due back / overdue or for regular statements of borrowing and marketing activities at the library to increase take-up.

Knowledge of events such as deaths would be useful when sending letters asking for overdue books. If it was possible to integrate completion of forms with the CDI solution it would make services such as joining the library quicker are less disruptive for staff.

The Libraries service could also use information from Social Services to identify those who are housebound and might benefit from the home delivery/collection service. This could well be extended to staff taking simple notes on general condition / needs to help social care staff assess risk.

Electoral Roll

CDI Hub solutions have been proven to improve the accuracy of the Electoral Roll and therefore help local authorities meet their obligations under the Electoral Registration Act (2006). Through pro-actively targeting households where a change of circumstance has been identified elsewhere in the Council additions and removals have more than doubled and staff pride has increased greatly. New residents respond well to this example of joined up working and it sets the tone well for relations between the customer and Council.

By linking Electoral Roll information with other sources through the CDI Hub the service should also be able to identify trends that can be tackled or exploited to further improve services e.g. cultural barriers to voter registration.

Registrars

The Registrars (Births, Deaths, Marriages, Citizenship) service should find the CDI Hub a useful way of sharing the information they gather more widely than the specific one-off sharing that is currently enabled by agreements with e.g. Council Tax. Having access to other Hub information on people or properties (addresses in particular) could help smooth the process at registration and deter fraudulent activity though this is not seen sufficiently significant for financial measurement.

Parking

Data quality at the DVLA can be low – a report commissioned by the Home Office in 2004 suggested that their databases were only 40% accurate.³ This presents a challenge to local authority parking services, as their primary source of driver details is the DVLA.

The parking service can expect to benefit financially as the collated customer information available in the right type of CDI Hub will enable the service to trace non-paying customers more effectively and therefore collect more revenue. To achieve this, the Hub must store previous addresses (to make an initial match), or have a change in circumstances mechanism that allows it to detect changes of address and store historical information. Without one of these facilities, parking services cannot retrieve the latest information about an outstanding debtor.

It should also be possible to simplify the permit application process to exclude the need for a proof of address where it can be validated against the records in the CDI Hub (Council Tax information is particularly relevant here). It may also make detecting Blue Badge miss-use easier.

Corporate Customer Strategy

Having a robust CDI solution in place should help local authorities build more effective strategies based on an evidenced understanding of the customer. Customer Insight and segmentation projects are often limited by the information that is available to them from particular services. However, having a cross-council 'Single Customer View' that can be matched to additional external profiling information such as MOSAIC or ACORN will greatly increase the power of this insight.

The segmentation process can be taken further using CDI to determine who are the "best" customers for which an individually designed service will deliver greatest value for money, who are the casual customers who will happily use a generic service and to segment those in between based on their patterns of need or want.

At the tactical level, the CDI hub can be used to identify pilot groups for new initiatives e.g. if a user is known as a new adopter of technologies e.g. was one of the first to register on the website they may also be interested in SMS notifications and e-billing.

Implementing a CDI solution can also be a powerful tool in shifting from a service silo to corporate excellence attitude. Being able to join up data from across the organisation and exposing the wide array of services that each customer receives will help breed an "our customer" rather than "my customer" approach.

³ Statistic obtained from article in www.silicon.com:
<http://hardware.silicon.com/servers/0,39024647,39125553,00.htm>

Appendix C – Results of Data Connects & RSe Consulting Customer Data Management Survey 2008

Customer Data Management Survey April 2008

Executive Summary

Data Connects and RSe Consulting set out to answer the following questions about Customer Data Management (CDM) in local government in a national survey carried out in Spring 2008:

- How extensive is local authority experience in CDM/CDI (Customer Data Integration)?
- Has CDM/CDI delivered benefits for the authorities that have employed it?
- What are local authorities planning for the future?

The key findings are that:

- **Most local authorities recognise the importance of a 'Single Customer View' and good data quality but few have achieved either**
 - 64% of local authorities believe having a single customer view is very important or critical to their organisation – yet three quarters admit they do not have one.
 - Although 78% of respondents view data quality as 'very important' or 'critical', 70% lack an employee with explicit responsibility for data quality (or Customer Data Management/Integration).
- **CDM/CDI has helped improve services but financial savings have been harder to measure**
 - CDI made the biggest quantitative impact through reducing the effort needed to collect data already known to the local authority
 - When asked to put their project's three year return on investment on a scale, 37% said it was negative or unknown
- **Authorities anticipate a greater role for CDM/CDI in the future**
 - 82% of respondents believe the next three years will see more CDM/CDI activity
 - Improvement in customer services will be a key driver for 96% of respondents

CDI vs CRM

Customer Data Integration (CDI) is NOT the same as Customer Relationship Management (CRM) though many of the objectives are similar. Whilst a CRM system is usually intended as the definitive method of recording customer contact in the Front Office a CDI solution gathers information from across the enterprise (including the back office) to present a true single customer view (to which many CRM implementations aspire but do not achieve) and the best available dataset which can be used to de-duplicate and improve the completeness and accuracy of CRM information.

Based on the answers given to some of the questions there appeared to be some confusion over the distinction amongst the survey participants.

CDM/CDI appear to be on the Local Authority agenda but projects are still in their infancy. Benefits have not been fully realised and costs and challenges have been encountered, such as a perceived lack of importance from the business side.

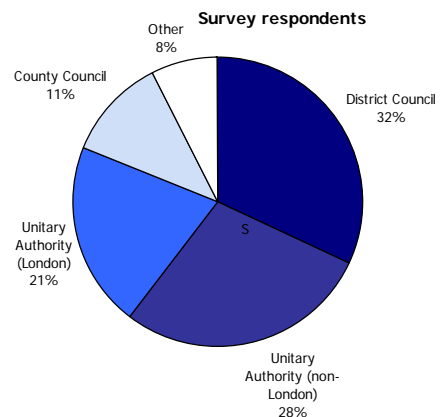
We hope that this research can contribute to your own thinking about your organisation's approach to customer data and the delivery of demonstrable service improvements and value for money for your citizens.

Survey approach

The survey was sent to a wide cross section of local authority representatives, including 349 English and Scottish local authority Heads of IT and 32 Data Connects members. A link was also placed on the Public Sector forum website, which greatly boosted take up.

52 people completed the survey in all, giving a respectable return rate of 12%. Respondents came from across all authority types, as the diagram to the right shows.

Respondents came from a range of departments; IT (31%) and Customer Services (29%) heading up the list.



Background

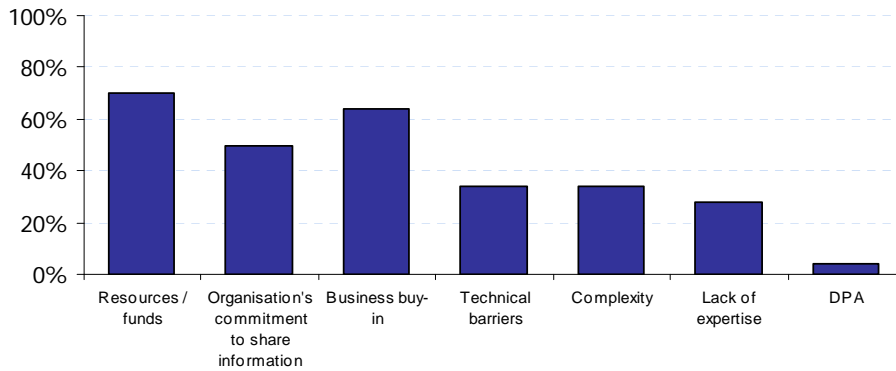
Survey Questions:

- How effectively do you think your organisation manages its customer information?
- What have been the main drivers for managing customer information better?
- What have been the main obstacles for managing customer information better?

Survey respondents overwhelmingly thought **customer service improvement was the biggest driver for better customer information management (84%)**. Improved value for money (56%) and service performance improvement (50%) were also strong factors. This suggests that better data management is driven more by performance than by cost – a crucial point to remember when evaluating the business case.

70% of respondents rated 'resources and funds' as a key barrier to effective data management. 'Business buy-in' is also important (64%) but 'lack of expertise' (28%) and the 'Data Protection Act' (4%) appeared to be less concerning, suggesting that local authorities are comfortable with the technology involved – business-related blockers are causing more problems.

What are the main barriers to change?



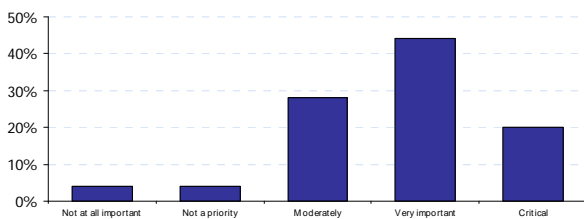
Single Customer View

Survey Questions:

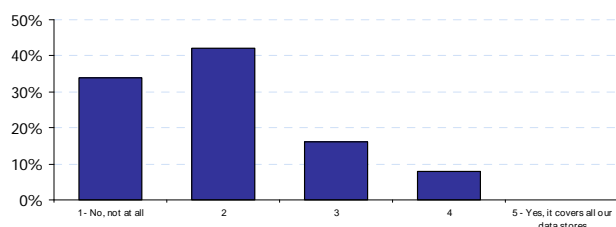
- How important do you think a 'single customer view' is to your organisation?
- Do you think you have a 'single customer view'?
- Has your project provided you with a 'single customer view'?
- Which of your service areas have benefited from a 'single customer view'?

64% of local authorities believe having a single customer view is very important or critical to their organisation – yet three quarters admit they do not have one.

How important is a single customer view?



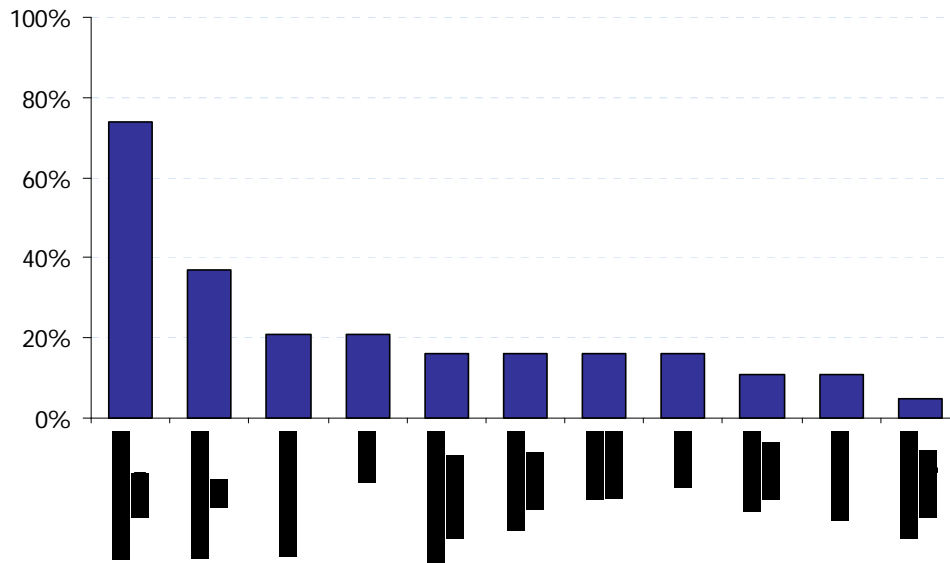
Do you have a single customer view?



Of those who have carried out customer data management projects, **74% have had achieved limited success in gaining a single customer view** (i.e. it is in place in some service areas but not all). The most popular service areas where customer data management projects had been undertaken were Customer Services (74%) and Revenues/ Council Tax (37%).

Social services are less involved (16% had done so in Childrens and 11% had done so in Adults). External factors such as ContactPoint and the Common Assessment Framework (CAF) could mean they are following independent projects from the council. Croydon Social Services for instance has implemented a CDI solution with its local Primary Care Trust

Services benefitting from SCV



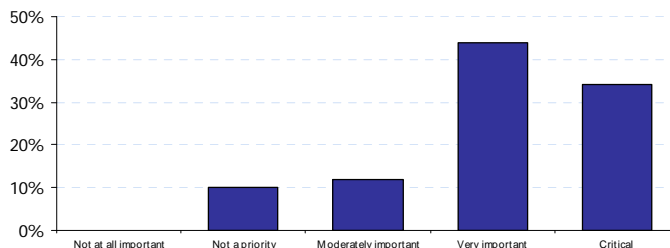
Data Quality

Survey Questions:

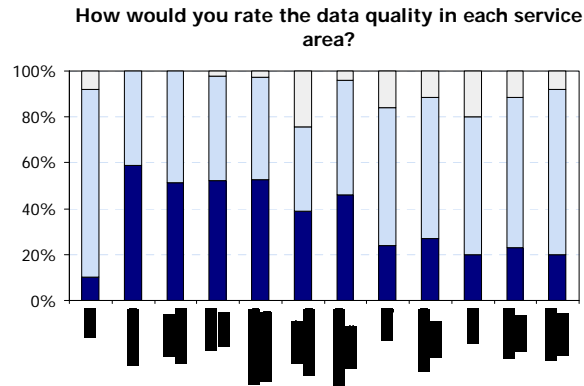
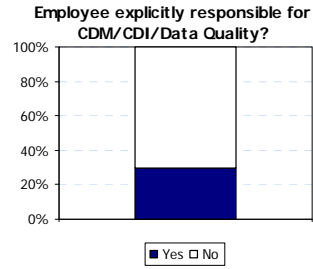
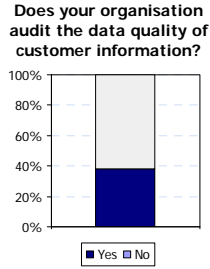
- How important is data quality to your organisation?
- Does your authority audit the data quality of customer information?
- What has been the impact of your Customer Data Management project on data quality?
- How would you rate the data quality of your different service areas?

Although the majority of respondents view data quality as 'very important' or 'critical' (78%)....

How important is data quality to the organisation?



...more than half do not audit their data quality (62%) and 70% lack an employee with explicit responsibility for data quality (or Customer Data Management/Integration).



Respondents perceived Electoral Roll and Revenues (Council Tax) as service areas with the highest data quality. Libraries, Adults and Schools & Education were seen as having particularly low data quality.

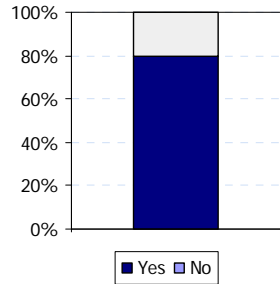
The law requires Electoral Roll records to be refreshed annually through a canvass, which means changes in circumstances are addressed at least once a year.

CRM

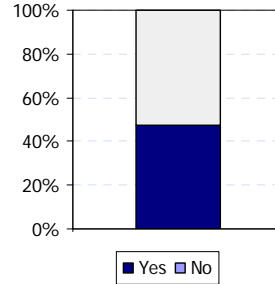
- Survey Questions:
- Does your organisation use a Customer Relationship Management system?
 - Does your CRM provide you with a consolidated view of your customers?
 - In which service areas is your CRM used?

Four out of five respondents had a CRM system, reflecting the popularity of these applications amongst local authorities. However, 48% of respondents said that their CRM was not providing them with a consolidated view of their customer. This suggests that CRMs appear not to be meeting their goals for a significant proportion of authorities.

Does your organisation have a CRM system?

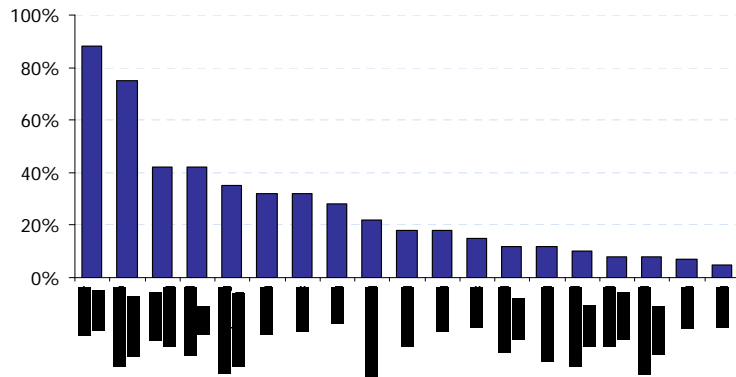


Does your CRM provide a consolidated view of your customers?



In what services is CRM used?

Customer services (88%) was the most popular area where CRM had been implemented. Interestingly, **waste collection and recycling (75%)** was the second most popular service for CRM, followed by Council Tax (42%).



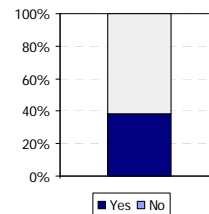
CDI – An overview of projects

Survey Questions:

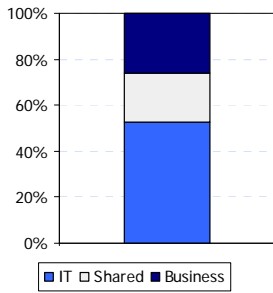
- Has your organisation undertaken any Customer Data Management /Integration projects?
- Was your project business or IT led?
- What kind of approach did you follow when integrating data?
- Which service areas did you include in your CDI project?
- How was your project funded?
- How many records were in scope for your project?

38% of respondents indicated that they had undertaken a Customer Data Management project. When considering this figure, we need to bear in mind that those who responded would tend to be those already engaged in Customer Data Management because they would be attracted to a customer data management survey.

Has your organisation undertaken any CDM projects?



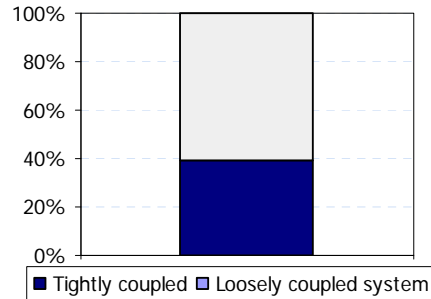
Who led your CDI project?



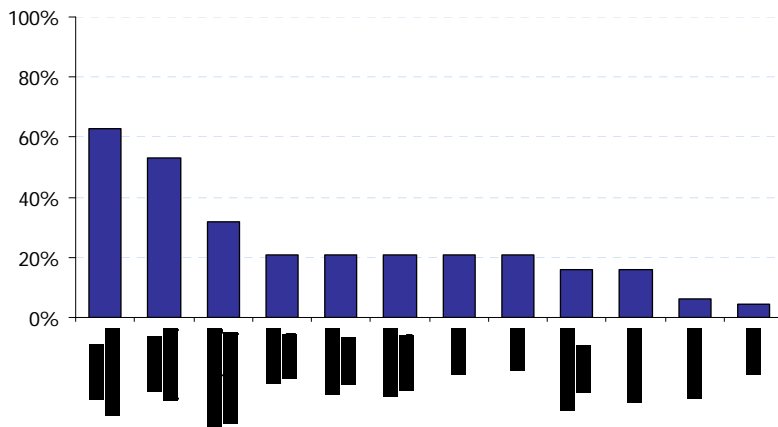
More than half of these projects were IT-led (53%) – only 26% were business led. The rest were shared. This indicates that local authorities view customer data management as something that IT are responsible for, and maybe not something that all service areas can get involved in.

Of those who had pursued a Customer Data Management/Integration solution, **60% were using Middleware as a support and 40% were using a tightly coupled system.** Middleware products being used included Microsoft's Biztalk, Oracle, SeeBeyond, and NDL Metascybe.

Approach to integrating customer data



Services included in CDI

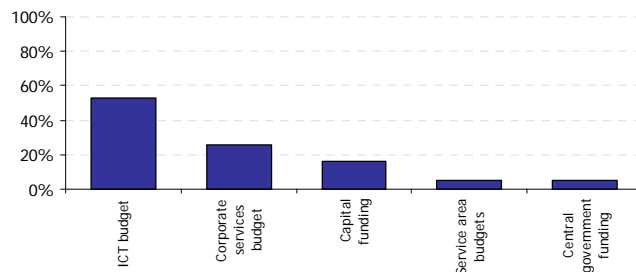


The most popular service areas where CDI has been applied **were Customer Services (63%) and Revenues (Council Tax) (53%).** A clutch of service areas (Business rates, Adults, Schools and Education, Libraries and Parking) all hovered at around 20%. Customer services is naturally the most customer facing service area so it makes sense that is one of the first to be

integrated to a hub. Some service areas, like Childrens and Electoral Roll may be bound by legislative requirements that make them less likely to be integrated.

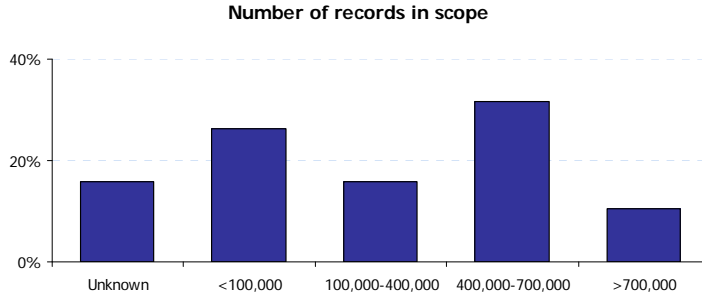
Most of the CDI were projects were funded from IT (53%) and a quarter came from the corporate budget. About a sixth came from capital grants.

How CDI project was funded



The number of records in scope for the CDI projects covered a wide range: nearly 50% were between 100,000 and 700,000. The final

number of course depended on the number of service areas that had been integrated. Interestingly, a sixth of respondents did not know this figure. This may be because many respondents were from a customer services background and might have more difficulty accessing the exact number.

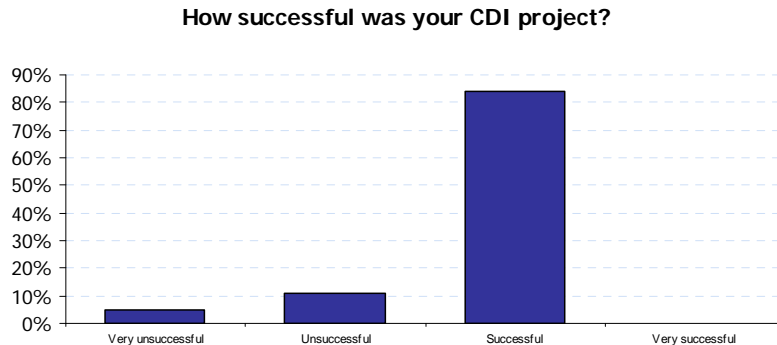


CDI – Benefits

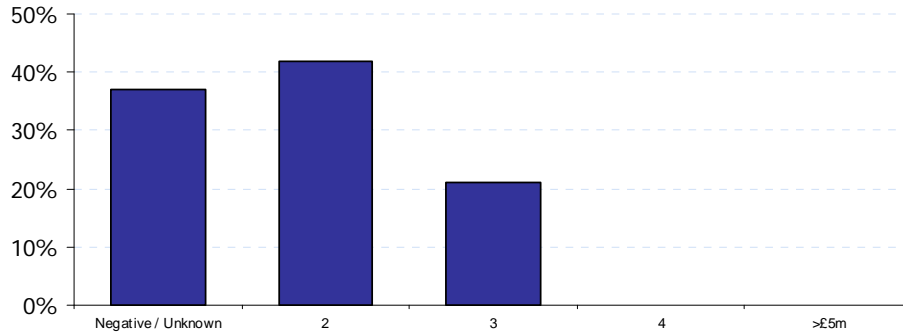
Survey Questions:

- How successful was your CDI project?
- What was the return on investment over three years?
- What were the main qualitative benefits?
- What were the main quantitative benefits?
- How many duplicates did the solution remove?

The vast majority of respondents felt that their CDI project had been 'successful' (84%). This contrasts with 37% saying their three year return on investment was negative or unknown.

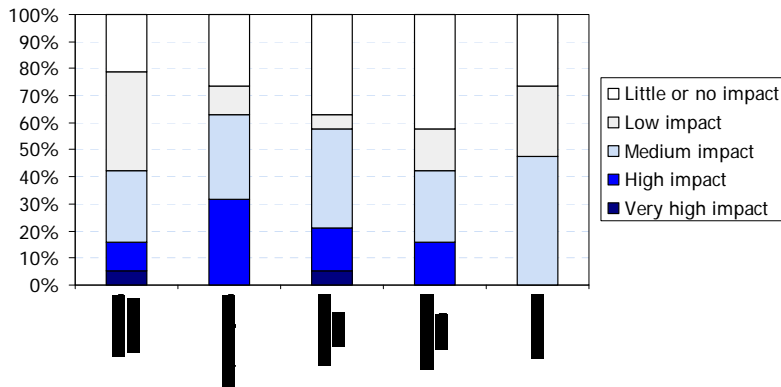


ROI over three years

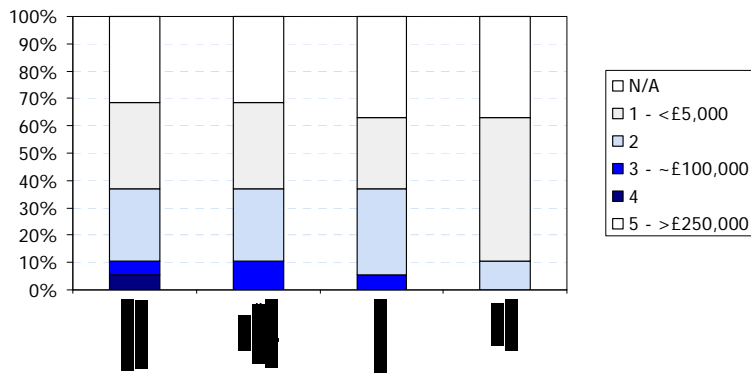


There was no consensus between respondents on what the main qualitative benefits were. However, **reduction in complaints, simpler integration and improved staff morale have all been positive outcomes of CDI projects.** Better decision making and reduced risks when making decisions appeared to be lesser benefits.

Qualitative benefits from CDI & their scale



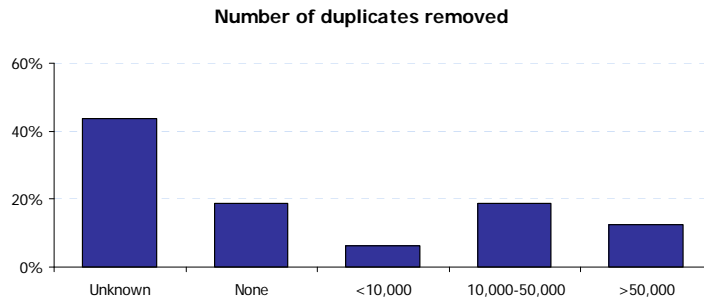
Quantitative benefits from CDI & their scale



CDI made the biggest quantitative impact through reducing the effort needed to collect data already known to the local authority – **10% said they had made savings of £100,000 or more through this alone.** Reduced rework and shorter transactions also resulted in financial savings but reducing duplication of data had not lowered storage costs.

32% of respondents said that more than 10,000 duplicates had been eliminated through their CDI project; yet another 63% of respondents said that the number of duplicates removed was zero or 'unknown'. De-duplication is a potential benefit, but not

everyone has been able to realise it, either because it was not a priority or because they found it too difficult.

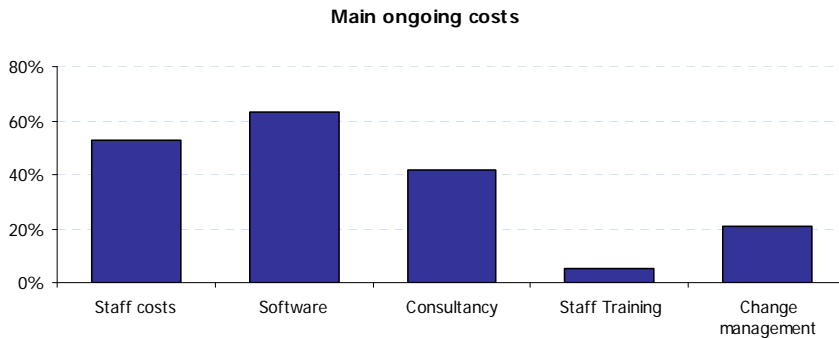


CDI – Costs and Challenges

Survey Questions:

- What were the main ongoing costs?
- What were your biggest challenges?

The three biggest costs were software (63%), staff costs (53%) and consultancy (42%). Software costs will depend on the level of integration the authority has chosen to follow; the deeper the integration the greater the expense. Please see the business case for a more detailed explanation of this, and an examination of whether the extra benefits make it



worth it. If in-house skills are not built up, local authorities can find themselves dependent on consultants to maintain the solution for them, increasing the ongoing cost of the project.

The biggest challenge by far for CDI projects was that it was 'not a council priority' (37%). 'Resistance from staff' (21%) and 'lack of leadership' and 'lack of clear project scope' (16% each) were also significant challenges. These results suggest a lack of understanding of CDI in local authorities (linking in with the previous point that it is seen as simply an IT project).



CDI – Future Ambitions

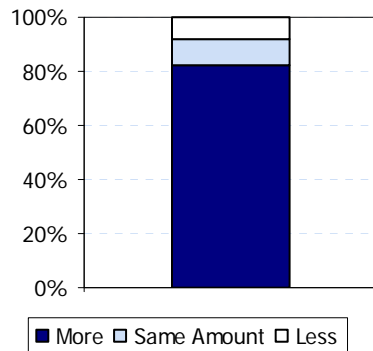
Survey Questions:

- How much CDI/CDM activity over the next three years?
- Which areas of your organisation do you think would benefit from future Customer Data Management / CDI projects?
- What will be the main drivers for undertaking future Customer Data Management / CDI initiatives?

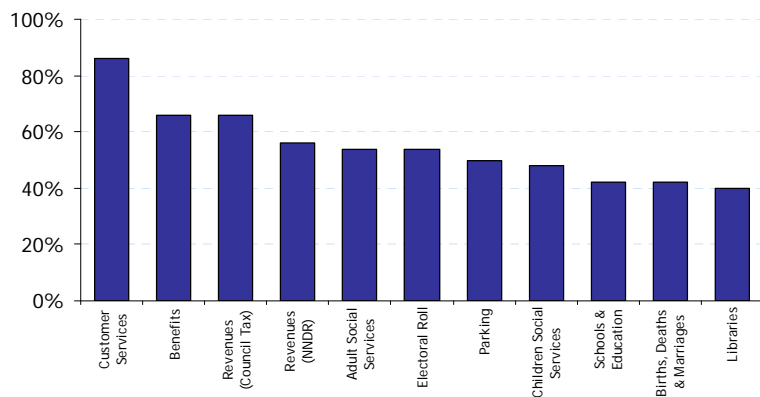
An overwhelming **82% of respondents believe that the next three years will see more CDI/CDM activity.**

The service areas they think will benefit the most are Customer Service (86%), Benefits (Housing and Council Tax) and Revenues (Council Tax) (both 66%).

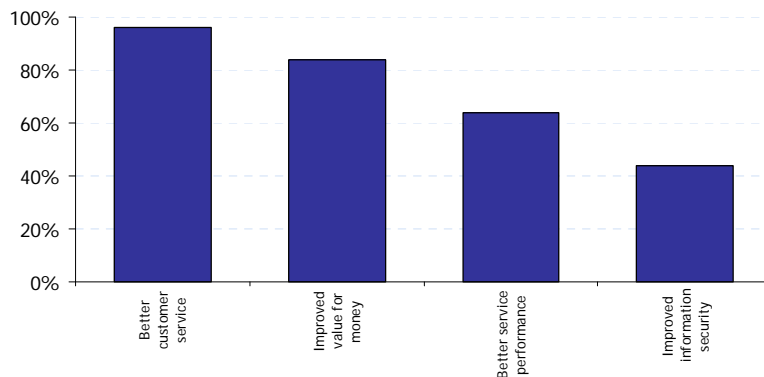
How much CDI/CDM activity over the next three years



Service areas to benefit from CDM/CDI in the future



Main drivers for CDM/CDI in the future



The main drivers for future CDI activity are seen to be 'better customer service' (96%) and 'improved value for money' (84%). 'Improved information security' is seen as less important (44%).

Appendix D – Glossary of Terms

Glossary of terms	
BOS	Back Office System
CAF	Child Assessment Forms
CAR	Change Accept or Reject.
CDI	Customer Data Integration
Cinema	Client Index Notification Manager
CRM	Customer Relationship Management
DCA	Department of Constitutional Affairs
DfES	Department for Education and Skills
DOB	Date of Birth
DWP	Department of Work and Pensions
ER	Electoral Roll
ERP	Enterprise Resource Planning
IEG	Implementing Electronic Government
ISI	(Children's) Information Sharing Index
LA	Local Authority
LOB	Line of Business
LLPG	Local Land and Property Gazetteer
MDM	Master Data Management
NINO	National Insurance Number
NLPG	National Land and Property Gazetteer
NNDR	National Non-Domestic Rates
OOB	Out Of Borough
PAF	Post Office Address File
PLASC	Pupil Level Annual Schools Census
SBA	Single Business Account
UPRN	Unique Property Reference Number

Appendix E – Sources and Credits

Data Connects and RSe Consulting would like to thank the following organisations for their contribution to the compilation of this report and accompanying business case calculator.

- London Connects
- London Borough of Brent
- London Borough of Croydon
- London Borough of Greenwich
- London Borough of Hammersmith & Fulham
- London Borough of Lambeth
- London Borough of Merton
- London Borough of Newham
- London Borough of Southwark
- City of Westminster
- Midlothian Council
- Borough of Poole
- Spelthorne Council
- SOCITM
- DWP – Tell Us Once

Finding out more

If you would like to learn more about this report, the business case for CDI in local authorities or Data Connects' CDI Best Practice report please contact Tony Ellis (tony.ellis@brent.gov.uk) or alternatively Chris Hall (chris.hall@rseconsulting.co.uk).