

Research report

Evidence review of smartcard schemes in local authorities

Andrew Wood, Kate Downer and Annalise Toberman

Department for Work and Pensions

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Upper Ground Floor, Steel City House, West Street, Sheffield S1 2GQ

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Any remaining deficiencies are the responsibility of the three report authors.

The Authors

Andrew Wood, Research Director, specialises in public policy and financial sector research, for both public and private sector clients. He has run many high-profile studies for the Department for Work and Pensions (DWP), covering different aspects of the international pensions landscape, the United Kingdom pension reforms, retirement saving and decision making. He read Modern and Medieval Languages at the University of Cambridge.

Kate Downer, Project Manager, specialises in public policy, financial and third sector research. She has worked on several large-scale public sector studies commissioned by DWP. Topics have included the understanding of decision making relating to annuities at retirement, measuring the effectiveness of the provision of pensions-related information in the workplace, and the pension industry's reactions to workplace pension reforms. She read Modern and Medieval Languages at the University of Cambridge, and has a postgraduate diploma in Management and Business Research Methods from the Open University.

Annalise Toberman, Research Executive, joined RS Consulting's public policy team in 2010, and focuses on pensions research. She has an honours degree in Government from the London School of Economics.

Abbreviations

CEPS	Common Electronic Purse Specification
CRB	Criminal Records Bureau
DfT	Department for Transport
DESFire	Data Encryption Standard Fast, Innovative, Reliable and Secure
DWP	Department for Work and Pensions
ENCTS	English National Concessionary Travel Scheme
GP	General Practitioner
HRE	Health Referral Expert
ICC	Integrated Circuit Chip
ITSO	Integrated Transport Smartcard Organisation
JCOP	Java Card OpenPlatform
LA	Local Authority
LASSeO	Local Authority Smartcard Standards e-Organisation
LCC	Liverpool City Council
MIEP	Merseyside Improvement and Efficiency Partnership
Mifare	Micron Fare Collection System
NEC	National Entitlement Card
NSCP	National Smart Card Project
NWIEP	North West Improvement and Efficiency Partnership
ODPM	Office of the Deputy Prime Minister
PASS	Proof of Age Standards Scheme
PTE	Passenger Transport Executive
SNAPI	Special Needs Application Program Interface
SPA	State Pension age
UK	United Kingdom

Glossary of terms

5x60 scheme	A Sports Council for Wales initiative funded by the Welsh Assembly Government, which aims to encourage schoolchildren to participate in an hour of physical activity five times a week. Local authority 5x60 officers involve parents, pupils and sports personnel in the development of activities that meet the needs and preferences of the pupils.
Active card	An active card is one that has been used to access electronically-recorded services over a given time period, such as the last 12 months.
Avantra	The trading company of LINK, which provides a network of Automated Teller Machines across the United Kingdom (UK). Part of its focus is on the evolving needs of public sector bodies, as well as on the provision of card-issuing services.
Card reader	Acts as an intermediary between a smartcard and a connected computer, reading and writing information to the smartcard . There are two main types of reader – contact and contactless – to accommodate the two main types of smartcard .
Card terminal	A self-contained processing device that can also read and write data to the smartcard.
Common Electronic Purse Specification (CEPS)	A type of e-purse . CEPS is an ‘open’ e-purse system due to its interoperability. It is compliant with Europay, Visa and Mastercard.
Contact smartcards	Smartcards that contain a rectangular gold-coloured chip, visible on the surface of the card and ‘read’ by insertion into a reader . Most UK credit and debit cards, with the exception of a few cards designed for users with specific disabilities, are examples of contact smartcards.
Contactless smartcards	Smartcards with an antenna connected to their chip beneath the surface, allowing them to communicate using radio waves at short distances. These cards only need to be swiped or waved near to a card reader in order to be read. London’s Oystercard is an example of a contactless smartcard.
DESFire card	A model of smartcard that is ITSO -compliant.
English National Concessionary Travel Scheme (ENCTS)	Introduced in April 2008, the ENCTS entitled the over 60s and disabled people to receive free off-peak travel on local bus services across England. Since 6 April 2010, the age of eligibility has been linked to the State Pension age applying to women. ENCTS passes can be smart, meaning that they are read electronically by readers that bus companies have installed on their buses. They can also be show and go , as there is a rose logo and a ribbon printed on cards to denote ENCTS eligibility.

E-purse	E-purse functionality allows low-value items to be paid for with a smartcard . Money is loaded onto the card, and can then be spent on goods and services such as cashless catering, leisure access or goods from retailers participating in the scheme. E-purses can be ‘topped up’ either in certain shops or online.
Experian	An information services company, which provides data and analytical tools to public and private sector clients. Experian holds wide-ranging information on UK citizens, such as lifestyle data on 14 million individuals in the UK and consumer information on 45 million UK customers.
Fun, Food and Fitness Project (F3)	A National Lottery-funded project in Caerphilly for parents concerned about their children’s weight. The programme consists of a ten-week ‘healthy living’ course designed for the whole family, offering access to certain leisure activities at a heavily discounted rate. The only condition is that each family member is required to take part in a leisure activity at least twice a week. Further discounts are available for up to a year.
Integrated circuit chip	A chip present in all smartcards, which performs the functions of storing, reading and writing data.
Integrated Transport Smartcard Organisation (ITSO)	The purpose of this organisation is to enable interoperable travel, such as, the ability for transport operators throughout the UK to link up so that passengers can use one payment smartcard on all bus and train routes. ITSO has set a technical specification for English travelcards, supported by the Department for Transport. This specification is effectively a ‘language’ that both the card and card reader must use in order to communicate. ITSO compliance not only facilitates interoperability; it is also a more secure check for concessionary travel eligibility than ‘ show and go ’ checking.
Java Card OpenPlatform (JCOP) card	A model of smartcard that runs applications written in Java programming language.
Local Authority Smartcard Standards e-Organisation (LASSeO)	A group of local authorities and partners supporting nationwide adoption of smart technology standards and specifications, to allow and encourage interoperability across platforms, card issuers, local services and environments. LASSeO has created a technical specification that allows local authorities to use the ITSO ENCTs travel concession cards for uses other than transport.
Memory-only chip	Cards with memory-only chips can only store data: they cannot process it.

Merseyside Improvement and Efficiency Partnership (MIEP)	MIEP is one of five sub-regional partnerships of the North West Improvement and Efficiency Partnership, which aims to deliver projects that target improvement and efficiency at a local level. MIEP comprises Halton Borough Council, Knowsley Council, Sefton Council, St. Helens Council, Liverpool City Council and Wirral Borough Council, as well as Merseyside Fire & Rescue Service and Merseytravel.
Middleware	Computer software that connects multiple applications or processes, allowing them to interact. Enables the interaction of different back-office systems.
Microprocessor chip	Cards with a microprocessor chip are able to process data and carry small programs, in addition to storing data. A microprocessor chip allows the smartcard to interact with the card reader in a dynamic way. The chip also protects the card data: it will only provide access or allow the card data to be modified when proper protocols and credentials are provided. For example, a microprocessor card can be configured to be read only if the correct user PIN is entered. Consequently, microprocessor cards are more secure than memory-only cards.
Mifare card	A model of smartcard . Mifare cards are gradually being phased out of circulation; they have a relatively low level of encryption, and therefore do not offer as much protection against fraud as some other card models. ITSO has not deemed the Mifare card to be compliant with its specification because of security concerns.
My Choice	Bracknell Forest Council's housing allocation system.
National Smart Card Project	The National Smart Card Project, which ran from 2002-2005, was set up by the Office of the Deputy Prime Minister to demonstrate the potential applications for smartcard technology within a local authority context. It was one of a number of projects intended to help authorities develop their capabilities in e-government (electronic delivery of priority core services). The project pooled the knowledge and experience of a number of local authorities and central government departments, to provide a knowledge base and guidelines for continuing smartcard development.
Near field communication	A type of short-range wireless communication, which enables devices to exchange data over a distance of around 10cm. It combines smartcard and reader technology into a single device, and is primarily associated with mobile phones.

Platform	A system comprising hardware and software working together to allow a smartcard system to function. Card readers and computer terminals that are used in conjunction with the cards themselves are two examples of the hardware involved in a smartcard platform; examples of software include leisure, libraries and travel databases, and the databases that cardholder records are stored on. These are linked together by middleware .
Show and go/flash card	A card that is checked by sight rather than by a card reader .
Smartcard	Typically this is a credit card-sized plastic card that contains an integrated circuit chip and can store, read and write data.
SmartCitizen	A commercial organisation that specialises in building and managing citizen smartcard schemes for local government.
SmartConnect	A branded smartcard management system produced by SmartCitizen that comprises the outputs from the National Smart Card Project . SmartConnect software is based on industry-standard technologies.
Special Needs Application Programme Interface (SNAPI)	A SNAPI card application enables a person with special needs to adjust computer terminal settings to meet their specific requirements. For example, a person with severely impaired vision could use the SNAPI system to magnify text on a library computer.
sQuid	A type of e-payments service included in a number of smartcard schemes. sQuid readers are set up in shops and local authority locations, so that users can pre-load money onto their cards.
State Pension age	The state retirement pension is payable to people who have reached State Pension age and have paid, or are treated as having paid, or been credited with, National Insurance contributions for the required number of years (30 for men and women reaching State Pension age after 5 April 2010; 39 for women and 44 for men reaching State Pension age before that date). A person's State Pension age depends on their date of birth. It is currently 65 for men and between 60 and 65 for women, and is due to increase from 65 to 68 in stages between 2024 and 2046. In January 2011, the government introduced new legislation to amend the current timetable. If approved, the State Pension age for men and women will increase to 66 by 2020.

Summary

This report provides the findings from an evidence review conducted by RS Consulting on behalf of the Department for Work and Pensions (DWP), examining smartcard schemes that local authorities (LAs) in the United Kingdom (UK) have implemented. Its overall aim is to draw together good practice and learning points as they relate to smartcard scheme implementation. The review has explored a range of issues, including the types of services included within the smartcard offering; citizen participation in schemes; use of data to improve services; dissemination of information to users and prospective users; communications activities and messages; and how schemes have been evaluated.

The evidence review forms part of a programme of policy and research that will enable central and local government to gain insight and learn lessons from a variety of LAs that have developed and implemented smartcard schemes. The review focuses on the implications for older people, and for service planning and delivery by authorities.

Background

DWP commissioned an evidence review of existing smartcard schemes to identify how LAs can use smartcard data to plan and deliver services more effectively and how it can improve the lives of older people by enabling improved access to services. For example:

- at present many people are unaware of their entitlements and of the complete range of services offered by their LA, and smartcards have been posited as a means to improve awareness of and access to them;
- all-in-one smartcards enable ease of access to services and promotion through a range of media. This could help people to preserve their independence and maintain or increase activity in their community as they get older, preventing isolation and the associated decline in health and quality of life;
- data from smart systems can be used to help authorities to plan and deliver services more effectively.

Scope of the research

The study was qualitative in approach, and consisted of analysing existing, publicly-available information and related evidence, supplemented by face-to-face discussions with the individuals within each LA best placed to discuss the smartcard scheme. These discussions were conducted between September and December 2010.

The secondary data analysed included scheme literature; scheme promotional material and press coverage; papers produced by external smartcard groups; authorities' strategy and planning documentation; demographic data; and qualitative and quantitative research findings.

Methodology

The first stage of the evidence review comprised detailed secondary research on smartcard use, focusing on the technology itself and its applications both generally and specifically within UK LAs. The research team collated this information to identify a list of potential case studies.

The team then refined the initial selection to produce a shortlist of recommended case studies, developing and applying a qualitative scoring mechanism, which was used to assess the smartcard initiatives. RS Consulting and DWP discussed the shortlist to agree on which authorities it would contact. The team secured the participation of seven authorities for the evidence review.

Members of the research team visited the smartcard teams within the seven participating authorities. Topics for discussion included the scheme's origins; services covered by the scheme and the reasoning behind service selection; the technology used; card take-up generally and among older people specifically; monitoring and evaluation; costs and benefits; and future plans for the scheme.

The seven LA bodies that participated in the evidence review were:

- Bolton Council
- Bracknell Forest Council
- Caerphilly County Borough Council
- Cumbria County Council
- Derbyshire County Council
- Dundee City Council/the National Entitlement Card
- Merseyside Improvement and Efficiency Partnership

Research findings

Background: origins and development

Motivations in adopting smartcard technology can be grouped broadly into those that are intended to benefit end users, and those intended to benefit the authority itself.

Important among these benefits is the underlying belief that a smartcard will grant users easier access to services. The individual card can be configured to facilitate access to everything the cardholder is entitled to receive from the LA, including specific concessions, discounts and applications offered only to certain groups of people. Depending on its make-up, there is scope for a smartcard to enrich and improve life for the user:

- Users' purchasing power can be increased if they are able to access discounts using the card and therefore make their money go further. For example, some of the cards studied in the evidence review give the holder a percentage discount when they show their card in local shops.
- Social inclusivity within an authority can improve if vulnerable groups, such as care leavers and people with very low incomes, are able to use the card to gain simplified, non-stigmatised access to services they might not otherwise use, such as discounted leisure activities and library rentals. Essentially, smartcards can allow vulnerable people to use the same LA services in the same way as other users do.
- A card can improve the overall quality of a user's life if it facilitates access to local services and allows the user to benefit from these independently. Having a smartcard may allow users to travel for free using local buses, live more actively using local leisure services and live more healthily by taking advantage of local projects such as smoking cessation initiatives.

A smartcard scheme may also be conceived with the aim of creating efficiencies for the LA. For example, delivering a service such as concessionary bus travel through a smartcard facilitates centralised data collection and streamlined, accurate invoicing. Currently, the majority of LAs who do not operate smart bus ticketing collect concessionary travel data by conducting periodic surveys on buses to measure typical usage, rather than attempting ongoing data collection. Additionally, collecting user data through a smartcard system avoids the duplication of data storage, and reduces both the physical and digital storage space required. Creation of a source of management information enables authorities to design and target services and ultimately, to access accurate data, allowing services to be delivered and financed in a more efficient way. This tailoring of services can be almost immediate or more long term:

- More ‘immediate’ tailoring entails analysing usage data and responding with a change to services offered through the card soon after the requirement for such a change becomes evident. An example is Caerphilly County Borough Council, where card usage data indicated demand for Zumba classes and the LA responded over the following months by training more instructors.
- Authorities can also tailor their services over the long term, taking measures to allow amendments to the card service offering in the future, rather than immediately. Outside the evidence review, for example, Southampton City Council asks card applicants about services they would like the LA to offer in the future, although its current focus remains delivering access to leisure and libraries and concessionary bus travel through the card.

In general, having a smartcard scheme can also be beneficial to an LA’s reputation and can boost its technological standing. Particularly since the advent of e-government, authorities have been keen to challenge their conventional image of being behind the advances of technology, and to stand out as a leader or innovator in service delivery. Delivering services through smartcards is perceived as one way of doing this.

A further important motivation is that of creating ‘joined-up’ services, the smartcard being used to access one service, while simultaneously promoting take-up and awareness of others. This can create higher levels of service engagement and card usage, making it potentially beneficial both to LAs – who see higher service usage and justification for the smartcard scheme – and card users, who may be able to live fuller lives by making use of more of the services available to them.

Although a card may not need to be fully smart in order to perform its current functions, creating a smart-enabled card from inception opens up the possibility of adding future smart applications, and makes it likely that introducing these additional smart applications can be done in a straightforward and relatively inexpensive way.

The planned card services and the benefits they are intended to deliver are a crucial component of the smartcard proposition. However, the need to demonstrate a convincing business case and having an internal smartcard ‘champion’ are also central to securing funding and wider support from the LA.

Types of smartcard scheme and take-up

LA smartcard schemes tended to follow two broad audience models: ‘generalist’ and ‘specialist’.

- **Generalist cards** covered in the evidence review were available to all residents. Either all users received the same smartcard, and chose to use the applications that were relevant to them, or they receive pre-tailored cards, configured to provide the user with the relevant applications from a ‘menu’. Generalist schemes may make the financial outlay needed to put the scheme infrastructure in place more acceptable because the card has the scope to achieve wide-reaching benefits.

- **Specialist card** schemes within the evidence review were intended for a subset of people within the LA. The authority had often identified a particular need, which it felt able to address most effectively using smart technology. The appropriate user group's need had driven the LA's choice of services to deliver via the smartcard. LAs may opt for specialist schemes because they value a more focused benefit to a specific user group over the more general benefits of a scheme designed for all citizens. The user group may be relatively small in number, but the benefits they receive through the scheme can be significant. For example, Cumbria County Council sought to address the issue of rural exclusion – a significant issue for some residents – when it launched its Rural Wheels shared vehicle scheme. These schemes may prove attractive if generalist schemes seem prohibitively large-scale and expensive to LAs first experimenting with smart technology.

It is possible for a specialist scheme to be targeted solely to the older population, though within the LAs participating in the evidence review this was not typically the case. It was more common for these smartcard schemes to target travel concessionaires, a group that also included eligible disabled people. Generalist schemes within the review had applications intended for concessionaires or older people specifically, as well as other user groups. An e+ card issued by Bracknell Forest includes an English National Concessionary Travel Scheme (ENCTS) logo and blue stripe if the applicant is of a qualifying age, for example. For a younger applicant who lives in authority-owned accommodation, the individual e+ card does not include ENCTS livery, but it may include the LA's 'My Choice' choice-based lettings smartcard application.

Smartcard services

The authorities in the evidence review tended to include certain 'core' service capabilities as part of the smartcard scheme. These were general access to travel, leisure and library services, and retail discounts. Additional services delivered through smartcards issued by the participating LAs included:

- free leisure access to vulnerable groups and users with special needs;
- lower leisure service charges for residents of the LA;
- online booking/payments for leisure services;
- corporate leisure membership;
- loyalty points for leisure service use;
- lower library rates for special groups;
- online library renewals;
- Special Needs Application Program Interface;
- biannual checks of council staff drivers' licences;
- cashless payments at participating retailers and services using e-purse;
- cashless catering in schools and LA offices;
- cashless payments for shared vehicle taxi travel in rural areas
- vending machines in LA offices;
- student registration;
- school library and school/university IT suite access;
- Credit Union savings scheme;

- retail discounts;
- National Proof of Age Standards Scheme accreditation;
- choice-based lettings for LA-owned properties;
- UK Organ Donor Register membership;
- family health initiatives;
- smoking cessation initiatives;
- Meals on Wheels payments via Direct Debit;
- audio travel information at bus stops, accessed by placing the card on a reader.

The card services were not typically aimed at older people specifically, although older people were frequent users of concessionary bus travel, and some other card services were more likely to be used by this age group. These included various services intended for concessionaires, retail and service discounts and Meals on Wheels. Services added to the card's capabilities after an initial selection of core services were often related directly to the original service offering. For example, if library access had been part of the initial service inventory, the secondary phase might involve adding online library book renewals. However, other LAs expanded the smartcard's offering into new service areas, such as health. For example, an authority's health and leisure services might work together to promote healthier lifestyles and exercise in an initiative delivered through the smartcard.

External organisations including the Integrated Transport Smartcard Organisation (ITSO) and Local Authority Smartcards Standard e-Organisation (LASSeO) have worked to facilitate the addition of other services to transport smartcards, and their conversion to multi-function cards. Following LASSeO's technical specification allows LAs to share cards' uses between transport and other LA services. Transport services specifically can be created to meet ITSO's own specification, which allows interoperability between different modes of transport, different locations and different types of ticketing products. A single card can combine transport applications with wider authority services. There is therefore scope for an LA smartcard to be interoperable and multi-functional on several different levels.

Operational issues

Authorities had encountered and overcome various operational issues. These included:

- issues relating to data collection and storage, such as users' questioning of their details being held on a computer system (and particular resistance to the word 'database'), or of children's photographs being taken for cards;
- organisational resistance towards the migration to smart technology and handling of a new card, including ingrained behaviours when processing transactions such as library rentals, resulting in smartcards not being swiped and data being entered manually;
- potential issues when working with external providers in the commercial sector, such as the failure to appreciate the needs and pressures faced by an LA;
- broken-down hardware such as card readers, which council staff sometimes did not report. In the case of in-school pilots, some pupils defaced and caused physical damage to the smartcards themselves, by obscuring or drawing over the cardholder photograph, or by removing the smartcard's chip.

Driving and monitoring card take-up

The LAs in the evidence review sought to enable and encourage card take-up. Encouragement was often ‘passive’, with authorities making schemes more appealing by adding services and ensuring it was straightforward to apply for a card, but not actively advertising the card. The extent to which LAs engaged in more ‘active’ promotional activity varied a great deal. This was likely to reflect variations in available resource and budget, and was more usual at the launch of the scheme. Only in rare cases had the authorities in the evidence review attempted to market their schemes to older people specifically.

Few authorities had monitored or evaluated the impact of their efforts on card take-up or carried out scheme monitoring and evaluation more generally. Few smartcard teams looked at management data other than overall take-up figures, despite the possible benefits of using the data. Reasons for this included the desire and need to prioritise developing the smartcard scheme over conducting systematic evaluation, the perceived arbitrariness of setting targets and objectives given the fluidity of schemes, and difficulties using the management software to analyse usage data.

It is difficult to evaluate card take-up among older people, as LAs do not typically break down figures by age. Authorities are frequently more concerned with efficient and effective service delivery overall than with achieving or measuring take-up among particular groups. However, both the anecdotal evidence and the limited statistical evidence available suggest that take-up among older groups is relatively high for schemes that include concessionary travel as part of their card offering, and relatively low for schemes that do not.

Benefits of smartcards to card users

A key benefit of smartcards is that they allow LA services to be delivered in a simplified way. Generally, the user needs to register only once in order to complete the application process and access all the available services. As we have seen, these services can be targeted to the individual user. The application process itself also highlights a benefit: a smart system may allow an LA to offer personalised services in a sensitive way, affording that user greater choice and independence, and helping to avoid social stigma. For instance, Caerphilly County Borough Council offers free and non-stigmatised leisure access to people in social care and care leavers via its smartcard.

Smartcard schemes can also offer financial benefits to the user, by including retail and service discounts. For all of the cards included in the evidence review, the card is either free, or requires only a token financial outlay from the scheme user: there are no financial barriers to accessing these benefits. By giving financial incentives, schemes may even encourage participation in leisure and other health-related activities. For instance, at the beginning of its smartcard scheme, Bolton Council used its young person’s B’Smart card to provide disadvantaged young people with £35 to spend on ‘positive’ activities like sports each month.

To date, benefits specific to older people have generally been related to increased service accessibility. Specifically, age-related benefits for older people among the smartcard schemes studied were likely to be a combination of concessionary bus travel, retail and leisure discounts. They also benefited from features such as e-purse functionality – eliminating the need to carry cash in some circumstances – and the need to carry only one card.

Benefits of smartcards to local authorities

The authorities included in the evidence review hoped to achieve benefits that would outweigh, or at least counterbalance, the high cost of setup and the relatively high running costs of a smartcard scheme. One benefit to highlight is the potential to make efficiencies and other financial savings.

Some authorities have also identified benefits associated with the management data created by smartcard usage, as this may help to achieve improvements to service provision and delivery, making the process more dynamic than the conventional ‘one-way’ model by which LAs provide services and citizens simply receive them. More broadly, authorities often sought to enhance their presence both locally and nationally by implementing a scheme. Aside from longer-term benefits, smartcards created more immediate, day-to-day benefits to the authority and its staff, such as cashless catering and buildings access, where they were used as a staff card.

Scheme funding and sustainability

Various internal and external factors can influence smartcard schemes’ sustainability in the long term. The individuals in charge of the scheme, and the support that they succeed in generating from their colleagues in the wider authority, can both play key roles in the scheme’s success and survival.

Funding is also crucial; this is especially relevant in the current economic climate and in light of the proposed cuts to local government funding. The LAs had secured funding for smartcard schemes in different ways, reflecting their individual circumstances and challenges and their different intentions in launching a scheme at all. However, because the LAs had not typically attempted to conduct a full cost-benefit analysis or to evaluate the costs of the scheme in a systematic way, this evidence review is not able to draw clear conclusions as to the economic viability of introducing a smartcard scheme, or of specific long-term savings associated with having a scheme in place.

1 Introduction

This report provides the findings from a study conducted by RS Consulting on behalf of the Department for Work and Pensions (DWP). The report is an evidence review of seven existing United Kingdom local authority (LA) smartcard projects, to identify best practice and learning points for successful implementation of an LA smartcard scheme.

This chapter outlines the policy background to the study, the aims and objectives of the research, and finally the methodological approach taken.

Chapter 2 explores the origins of LA smartcard schemes, including the development of smartcard technology, typical routes of scheme development and scheme management models, before looking at the evolution of schemes. It also outlines authorities' reasons for choosing to implement smartcard schemes.

Chapter 3 describes the types of scheme studied and the intended user group in each case, while Chapter 4 goes on to consider the specific services offered through these schemes and any operational issues considered or experienced by LAs. Chapter 5 assesses the ways in which LAs have passively and proactively encouraged card take-up; it also examines the monitoring and evaluation of smartcard schemes, with particular focus on how data generated by card usage has been used for this purpose.

Chapters 6 and 7 summarise the key realised and potential benefits of smartcards to users and authorities respectively. Chapter 8 goes on to consider the future of the schemes: their sustainability given how they are managed and funded, and the influence of economic and technological developments. Finally, Chapter 9 outlines the conclusions on LA smartcard schemes that emerged from this evidence review.

1.1 Policy background

In July 2009 the previous government published *Building a Society for All Ages*, a strategy aimed at improving the quality of older people's lives within the context of an ageing society. By helping to prepare people for later life, the strategy aimed to help people make the most of their later years and access the right support when needed.

DWP leads the development of a cross-government agenda to tackle the many challenges posed by an ageing society. This agenda includes:

- reforms to specific policy areas, such as pensions and equality legislation;
- influencing central and local government to address the issues of ageing and improve the well-being of older people;
- working to change individuals' attitudes and behaviours towards later life, in order to increase understanding of longer retirement and the need to plan in order to achieve quality of life during these years; and
- engaging with older people to understand their concerns and involving them in policy, and service design and delivery.

1.1.1 The Active at 60 Smartcard initiative

One of the strategies outlined in *Building a Society for All Ages* is Active at 60, which aims to improve awareness of, and access to, services for older people, and ultimately prevent social isolation and the associated decline in health and quality of life. As part of this work, DWP is looking at smartcard technology as a means to achieve improved awareness and access. Some authorities already use all-in-one smartcards that enable citizens to access a wide range of local activities and services, as well as linking to local and national entitlements. Additionally, data generated by smartcard usage can be used to help authorities to plan and deliver services more effectively.

1.2 Research aims and objectives

In support of the Active at 60 Smartcard initiative, DWP commissioned an evidence review of some existing smartcard schemes currently in operation, in order to identify best practices and learning points for the successful implementation of these schemes.

This report explores a range of issues, including:

- types of services included in schemes;
- citizen participation;
- financial viability;
- communication with card users and potential users;
- use of management data for evaluation purposes;
- use of data to improve service provision and delivery; and
- scheme benefits to both the end user and the LA.

This evidence review focuses on the implications of findings for the older population: whether they have benefited from better awareness of, and access to, services and associated improvements to their quality of life. The review looks at how smartcards have facilitated access to and take-up of services across local communities, and whether smartcard technology has facilitated outreach to people who previously lacked sufficient information or could not access services.

It will also explore issues in relation to older people specifically, including their level of participation in smartcard schemes and card applications designed for this age group.

As such, this research aims to:

- draw together for the first time the diffuse evidence on smartcard schemes, enabling DWP to showcase and better disseminate the potential social and financial benefits of smartcards and day-to-day benefits for smartcard users;
- help encourage wider take-up of the technology by LAs;
- enable all LA areas to submit better evidence-based, cost-effective business cases for future provision in this area; and
- inform future strategy options regarding smartcards and wider service delivery for central and local government.

1.3 Methodology

The evidence review consists primarily of analysis of existing, publicly-available sources of evidence. The secondary data analysed includes LAs' strategy and planning documentation; progress reports; papers and presentations produced by external smartcard groups; demographic data; and research findings. The RS Consulting research team supplemented this evidence base with discussions involving key smartcard players within LAs.

1.3.1 Stages of the evidence review

In the first stage of the evidence review, members of the research team undertook extensive background research on smartcard use in general and by LAs specifically, as well as on the policy context and strategies aimed at addressing issues associated with an ageing population. The team collated this research to identify a list of potential LA case studies.

In the next stage, the research team refined the selection of potential LA schemes to produce a shortlist of recommended case studies. The shortlist was achieved by developing and implementing a qualitative scoring mechanism by which to assess the identified LA smartcard initiatives. Details of this system are provided in Appendix A.1. The research team then discussed the shortlist with DWP and agreed on the highest-scoring LAs it would contact. Members of the team secured the participation of seven authorities for the evidence review.

The final stages of the evidence review involved data collection and collation, and the production of case studies. Members of the research team visited the seven smartcard teams within the authorities who agreed to participate in the study, for discussions about each scheme. Topics of discussion included the origins of the scheme; services covered by the smartcard and the reasoning behind this; the technology used; card take-up generally and among older people specifically; monitoring and evaluation; costs and benefits; and future plans for the scheme.

1.3.2 Participating authorities

The seven LAs who agreed to participate in the evidence review, and the smartcard schemes they operate, were:

Bolton Metropolitan Borough Council (Bolton Smart and B'Smart cards)

Bolton Smart is a multi-functional smartcard scheme available to people who live or work in the borough. The scheme was originally part of the National Smart Card Project, funded by the Office of the Deputy Prime Minister. The core applications that the smartcard can be used for are leisure, library, cashless bus travel and retail discounts. The card has a number of sQuid e-purses that can be used for payments in local shops, using a card reader. There are three different permutations of the smartcard: a staff card for council employees, Bolton Smart for adults aged over 16, and B'Smart for young people aged between 11 and 16.

Bracknell Forest Council (e+ card)

The e+ card is a multi-functional smartcard scheme available to people who live or work in Bracknell Forest. Originally a non-smart retail loyalty card, the smart version of the Edge card, as it was previously known, was launched in 2000 as part of the National Smart Card Project, and has since been re-branded as the e+ card. Currently, the core service capabilities are for libraries, leisure services and travel. Other capabilities include retail discounts, the Proof of Age Standards Scheme and organ donor register membership.

Caerphilly County Borough Council (Caerphilly Smart Card)

The Caerphilly Smart Card scheme is a multi-functional smartcard scheme intended for all residents of the county. It was inspired by the authority's desire to create a management information system for leisure services, and to update the existing libraries system. The scheme is currently managed by leisure services and funded by leisure and library services jointly. Core service capabilities are for these services. Additional card applications include a scheme to allow Meals on Wheels users to pay via Direct Debit, GP referral to activities intended to increase fitness levels, and services specific to council staff such as access to LA buildings and cashless catering.

Cumbria County Council (NoWcard and Rural Wheels service)

Cumbria County Council currently operates two smart travelcard schemes designed to manage the transport challenges caused by the county's rurality, which it aims to link together in the future. Blackburn-with-Darwen Council, Blackpool Council, Cumbria County Council and Lancashire County Council worked as a partnership to set up the NoWcard scheme in 2002 and continue to work together to deliver it. The smartcard is currently used by the over 60s and eligible disabled people to access concessionary bus travel, but the NoWcard authorities anticipate adding other applications in the future. Cumbria's other scheme, Rural Wheels, is a shared vehicle service created for people of any age living in the more remote areas of the county, not served by scheduled bus routes. Shared vehicles take users from their home to the nearest town or public transport service. Users pay using points, which are stored on a smartcard and read by hand-held card readers inside vehicles. It costs a user 30 points (30p) to travel one mile; the LA pays the operator the remainder per-mile cost.

Derbyshire County Council (Derbyshire Gold Card and B_Line Card)

The Derbyshire Gold Card is a scheme launched in 2004, intended for older people who qualify for concessionary travel and eligible disabled people. Current core service capabilities are for travel, retail and leisure discounts and libraries. Although compliant with the Integrated Transport Smartcard Organisation specification and smart-enabled, the Gold Card is currently exclusively used as a 'show and go' card. The research team made a conscious decision to include the card in the evidence review because it is an age-specific card for older people. The Gold Card had the potential to generate key findings on how card schemes in general improve awareness of, and access to, LA services, and consequently reduce social isolation and enhance the sense of community among older people.

Dundee City Council (Dundee Discovery Card and Scottish National Entitlement Card)

One scheme that preceded Scotland's National Entitlement Card (NEC) was the Dundee Discovery Card. In 2002, Dundee City Council joined with ten other LAs in Scotland to pilot smartcard schemes as part of the Scottish Executive's Modernising Government programme. After a pilot, the Dundee model was scaled up, becoming the model for the NEC in 2006.

The NEC is a national multi-application smartcard scheme run throughout Scotland by a partnership that includes the Scottish Government, LAs and other bodies. Cards are issued to applicants by Scotland's 32 LAs, with applications and branding varying slightly between them. The scheme is one element in the wider 'Customer First' programme sponsored by the Scottish Government. The smartcard can be used to access travel, leisure and library services. The NEC for all young people aged 11-26, called the 'Young Scot', can also be used for proof of age, services in schools such as cashless catering, and retail discounts.

Merseyside Improvement and Efficiency Partnership (planned Merseyside Community Card)

Liverpool City Council (LCC) planned to launch the Citizen's Cash Card in conjunction with Avantra. The card was going to be used for emergency cash payments, council employees' petty cash claims, payment of benefits and other kinds of payments provided by the authority. However, the scheme was later abandoned following a change in the LCC's administration. More recently the Merseyside Improvement and Efficiency Partnership proposed a smart taxicard scheme, to monitor and reduce the cost of LA-supplied transport across the Liverpool city region. This has since evolved into plans for a multi-application smartcard for the city region, which is in the early stages of development at the time of writing. Potential service capabilities include leisure, libraries, travel, retail discounts and payments. The planned card's link to both a partnership of authorities and to the region's Passenger Transport Executive mean that it has managerial and financial support from several different sources, which are allowing the card's development to progress where previous planned schemes have not been taken forward.

2 Origins and evolution

This chapter examines the development of smartcard technology, beginning with its origins in the 1970s. Section 2.2 examines local authorities' (LAs') reasons for choosing to implement smartcard schemes, and considers these in terms of their focus: on the user, on the authority itself, or on both of these. Sections 2.3 and 2.4 address schemes' funding sources and typical starting points for scheme design. Following this, the chapter outlines the two broad scheme management models: management by a dedicated team or individual and management in the remit of an existing LA service. In Section 2.6, we explore how smartcard schemes may develop from the original proposition and offering. Finally, the chapter considers the various elements that may impact on a scheme's evolution.

2.1 The development of smartcard technology

The United Kingdom's (UK's) transport sector and local government started to embrace smartcard technology and the possibilities it offered, once they became convinced that smart technology was sufficiently advanced, and that smartcards were working successfully in overseas schemes. Over time, more and more organisations have implemented citizen smartcard schemes, aiming to deliver benefits both to the end users of the cards, and to the organisations that design and manage them.

2.1.1 The origins of the smartcard

Smartcard technology was developed in the late 1970s, with the first examples of a microprocessor smartcard and the necessary programming architecture invented by computing technology company Honeywell Bull, and soon used by commercial organisations such as Motorola.

There were early smartcard trials in the UK transport sector during the 1990s, although Blythe (2004)¹ explains that these pilots often resulted from the desire to roll out the technology, rather than specific user-identified needs. Consequently, there were several expensive failures, a notable example being the Mondex stored value card: an early example of an e-purse.² The Mondex card, like the majority of e-purses, stored funds on the card, meaning that card readers used to process transactions did not require network connectivity. It was designed as a flexible, easy way to pay for purchases of any size, without the need to withdraw cash, and without any risk of going into debt: the user could only spend the sum of money present on the card, and no more.

The card underwent extensive field tests in Swindon, UK, and Guelph, Canada. Users could load cards with credit from their bank accounts, or from specially equipped Mondex terminals. The card could then be used to make low-value, in-person payments using dedicated terminals in stores. However, the card failed to generate sufficient interest among pilot users, translating into low usage levels.³ As Mas and Rotman (2008) conclude:

¹ For in-depth discussion of the history of smartcard technology, see Blythe, P. (2004). 'Improving public transport ticketing through smartcards', *Proceedings of the Institution of Civil Engineers* 157: 47-54.

² Mas, I. A., and Rotman, S. (2008). *Going cashless at the point of sale: hits and misses in developed countries*. [online]: <http://www.cgap.org/gm/document-1.9.7885/FN51.pdf>

³ Farber, D. (1998). *Canada Mondex pilot ends*. [online]: <http://www.interesting-people.org/archives/interesting-people/199811/msg00002.html>

'Taking on cash in its home front – at the shop – proved too much. Customers failed to appreciate strong advantages over paying in cash and remained concerned about the security and reliability of the new system. Mondex debuted with much fanfare in several countries, and then languished.'

Mas and Rotman (2008)

At the same time, overseas schemes were faring better. Hong Kong's Octopus card, conceived specifically as a vehicle for intermodal ticketing, is perhaps the best-known of these schemes. Hong Kong's main transport operators each adopted the same magnetic plastic cards as stored value tickets during the late 1970s and the 1980s. Eventually, the five services formed a partnership in order to deliver a common ticketing system, which they called Octopus. Trialled over a three-year period and eventually launched in September 1997, Octopus became the world's first contactless smart system⁴ and one of smartcard technology's best-known successes.

2.1.2 Developments in the 1990s

UK transport smartcard schemes also emerged during the 1990s, including Milton Keynes (launched in 1990), Merseytravel (1996) and Hertfordshire 'Herts Smart' (1997). While not all of the schemes rolled out in this period proved ultimately successful, they succeeded in renewing the UK transport industry's awareness of smartcards and the possibilities they offered, and were shored up by the success of overseas schemes like Octopus.

These developments prompted recognition among UK transport operators and the public sector of the need for interoperability, and recognition that if different bodies continued to develop independent, individual schemes, it may not be possible to link them together in future.⁵ The linking together of different operators' services had, after all, been central to the appeal of the Octopus card.

A 1998 White Paper⁶ published by the Department of the Environment, Transport and the Regions (DETR) posited smartcards as the future of integrated ticketing. This led to the founding of the Integrated Transport Smartcard Organisation (ITSO) in 1999. ITSO's principal objective is to address integration and interoperability issues between different transport operators.

2.1.3 Developments in the 2000s

The Office of the Deputy Prime Minister (ODPM) set up the National Smart Card Project (NSCP) with the aim of '*proving smartcard technology and its different uses in a variety of local authority applications.*'⁷ The NSCP's practical objectives were to develop a package that LAs would be able to use in implementing their own smartcards: a 'starter pack' for schemes that authorities were in the early stages of developing, and a set of interoperability regulations for authorities that had existing schemes. The project ran between 2002 and 2005.

⁴ AESPRODATA. 'Hong Kong Smartcard System', *Railroad-Technology Journal and MTR Corporation*. [online]: <http://web.archive.org/web/20070304050613/http://lnweb18.worldbank.org/External/lac/lac.nsf/Sectors/Transport/D5A576A039A802C0852568B2007988AD?OpenDocument>

⁵ Blythe, P. (2004). 'Improving public transport ticketing through smartcards', *Proceedings of the Institution of Civil Engineers* 157: 47-54.

⁶ Department of the Environment, Transport and the Regions (1998). 'Smart Card Applications in Transport', *A New Deal for Transport: Better for Everybody – The Government's White Paper on Transport*. The Stationery Office: London.

⁷ Leibert, A. (2004). *The National Smartcard Project: a great start*. [online]: <http://www.egovmonitor.com/features/alco.html>

Building on their earlier schemes or setting up new ones, authorities including Bolton Council, Cornwall County Council, Doncaster Council, Kettering Borough Council and Southampton City Council participated in the NSCP. The ODPM selected Bracknell Forest Council, which had launched one of the UK's first multi-function LA smartcards with the Edge Card in 2000, as the project's lead authority.

Further schemes were rolled out in the late 2000s, by authorities who had observed and learned from the NSCP, including Caerphilly County Borough Council's 'Caerphilly Smart Card'. A Customer First agenda run in Scotland included a smartcard element, and this led to the development of the National Entitlement Card (NEC), launched across Scotland in April 2006. From this point, all Scottish LAs have provided smartcards to their citizens.

2.2 Motivations for introducing smartcard schemes in local authorities

This section summarises the motivations that authorities may have in deciding to create smartcard schemes. The factors that are outlined below reflect what the authorities hoped to achieve when they embarked on scheme development. Whether these aspirations were successfully borne out is discussed later, in Chapters 6 and 7. The motivations for adoption can be grouped broadly into those intended to benefit end users, and those of benefit to the LA itself. Although the authorities themselves did not categorise motivations as explicitly as this, it was typical for them to outline their reasons for implementing a smartcard.

While planned card services and the benefits they are intended to deliver are an essential part of the planning stages, demonstrating a convincing business case is imperative in securing funding and wider backing from within the authority. We explore this point in greater detail in Section 8.3.

2.2.1 Motivations centring on the end user

LAs generally seek to provide some combination of benefits to end users by developing smartcard schemes.

Easier access to services

There is often an underlying belief that a smartcard will grant users easier access to services. This may be on an immediate, practical level: the authorities that set up the NoWcard, for example, argued that a contactless bus travel smartcard would enable quick and streamlined passenger boarding, and ultimately a faster journey time. Smartcards have also facilitated access to services in a more over-arching, generalised sense. Cumbria County Council's Rural Wheels service, for example, is designed to give its users, who live in remote areas of Cumbria, an affordable means of transport, helping them reach shops and services in their area.

More targeted and personalised services

Smartcard systems can also be configured to allow the LA to deliver more targeted, tailored services using the card as a vehicle. It is possible for council staff to tailor an individual applicant's card capabilities during the application process, and to make sure that each person receives all the services that they are entitled to. During the application for Bracknell Forest's e+ card, for example, entering an eligible person's date of birth prompts the registration software to indicate that the applicant is entitled to concessionary travel. The member of staff can then arrange to include this on the card.

Increased social inclusivity

A further user benefit that LAs may cite as a motivation for introducing smartcards is that of increased social inclusivity. Bolton Council used its B'Smart card, a sub-brand of the Bolton Smart Card, to give disadvantaged young people free access to leisure activities, for example. Pay-as-you-go bus ticketing, available to Bolton Smart cardholders, gives people without bank accounts access to smartcard ticketing. Similarly, one of the motivations for including payments services in the now-defunct Citizen's Cash Card scheme and the planned Merseyside Community Card scheme is to provide citizens with a means of accessing cash entitlements that does not require the recipient to have a bank account.

Increased purchasing power

Cards that offer retail and/or service discounts, such as Derbyshire County Council's Derbyshire Gold Card, Bolton Smart, Bracknell Forest's e+ card and the Young Scot permutation of the NEC can save money for the cardholder.

Improvement to quality of life

Many of the services that cards can deliver are intended to improve quality of life for the user. This can be in a number of ways; GP Referral and Caerphilly's F3 initiative are two health-related examples.

GPs in Bracknell and Caerphilly can use the LA smartcard to refer patients to a Health Referral Expert, who will issue them with a smartcard if they do not already have one. The patient can then attend a fitness course at their local leisure centre at a reduced rate, which they access via the smartcard.

The Fun, Food and Fitness (F3) Project is a lottery-funded scheme in Caerphilly. Families with weight concerns are issued with smartcards. They pay £10 for use of leisure facilities for the whole family for a period of ten weeks, with further discounts available for up to a year. The only condition is that each family member is required to take part in a leisure activity at least twice a week. The activities are accessed via the card. Usage is monitored via the smartcard team, who report back to the F3 team.

One way Derbyshire County Council has sought to improve the lives of older people is to offer and encourage internet access through its libraries, as it suspected that internet usage was especially low among older people. In particular, the LA signposts users to its online journey planner, to help them make optimal use of public transport links in the area.

Portability

Smartcards are a small item that can be carried easily in the owner's wallet: they have the portability of a credit card. A multi-application smartcard means that the user needs to carry only one card, rather than several.

2.2.2 Motivations centring on the local authority

There are also motivations for smartcard development that link directly to the LA and its objectives and aspirations.

Efficiencies

Schemes are often intended to deliver efficiencies of one kind or another. For example, delivering a service such as concessionary bus travel through a card enables centralised data collection, and streamlined, accurate invoicing for reimbursement. Smart delivery of services is usually intended to deliver economies of scale once the full basic scheme has been rolled out. This is because the costs for introducing further applications are generally lower once the general scheme architecture has been developed.

Benefits to reputation

Having a smartcard scheme can be beneficial to an authority's reputation, and can boost its technological standing. The first UK authorities to introduce smartcards and those that took part in pathfinder initiatives such as the NSCP achieved pioneer status with regard to their smartcard offering, achieving their aspirations to be seen as progressive and modern local government organisations.

Data storage

Collecting user data through a smartcard system avoids the duplication of data, and reduces both the physical and digital storage space required. Data is held centrally on the smartcard database, rather than locally within each LA department that delivers services through the card.

Staff-specific services

There is also scope for LAs to create direct benefits, by designing or piloting particular applications for their own staff. Some LAs, including Bolton and Caerphilly, use the card at work for door access and cashless catering, among other applications. A benefit of this approach is that all departments become familiarised with the scheme, regardless of whether it provides services specific to their department.

2.2.3 Motivations with impact for both parties

Some reasons for implementing smartcard schemes are intended to have impact both for the LA, and for the card's proposed users.

'Joined-up' services

Smartcards can act as a conduit for 'joined-up' services; use of the card to access one service may encourage take-up and awareness of another. This can create higher levels of service engagement and card usage, making it potentially beneficial both to LAs and card users. Derbyshire County Council, for instance, has promoted the idea of using the Derbyshire Gold Card to travel into town by bus, to access LA services, and then again to obtain discounts when shopping.

A new data source

There is scope for LAs to use card management data collected through the smartcard system to design and refine the services provided and the way they are delivered, so that they better meet users' needs.

Flexibility in the service offering

A smart system is a malleable one that allows the service offering to be configured and re-configured over time. This allows the LA to increase or amend card applications centrally, and without needing to issue physical replacements or oblige users to re-register for any service. This is also convenient for the card user.

2.3 How schemes are funded

LAs can secure funding for smartcard schemes in different ways, reflecting their individual circumstances and challenges, and their different intentions in launching a scheme at all. The seven authorities whose schemes we examined in detail demonstrated a wide range of funding sources.

Two basic models that emerged were funding solely from internal sources, and from a group of organisations working in partnership. Examples of these models are discussed below.

2.3.1 Funding from the local authority

A scheme may be funded by the LA alone, as the Caerphilly Smart Card exemplifies. This scheme received an initial £600,000 from the authority's cabinet to deliver the first phase of its planned implementation. The scheme's ongoing costs are borne by Caerphilly's leisure and libraries departments, without additional central funding.

2.3.2 Funding in partnership

It was more usual for schemes in the authorities studied to have sourced funding from a partnership of some sort, at least during the initial stages of the scheme. The NSCP, for example, provided participating authorities, which included Bracknell Forest and Bolton, with funding to support development of a suite of smartcard work packages. Bolton, for example, was awarded 'cross boundary interoperability' (WP7) and 'software' (WP9). The purpose of the work packages was to test specific aspects of the card scheme; in this case the functionality of the smartcard on buses, and the software used to host the smartcard data.

A second example is Cumbria County Council's Rural Wheels service. When it was set up, Rural Wheels was funded by a partnership that included Cumbria County Council, the Countryside Agency, the Department for Transport (DfT) and Help the Aged, and delivered by the county council. Currently the service is funded solely by the county council and delivered as part of its portfolio of transport services.

2.4 Routes to scheme development

There are three broad models of smartcard scheme development, as exemplified by the authorities included in this study. They are:

- taking older, non-smart cards as a starting point and 'going smart';
- bolting extra applications onto a smart travelcard scheme, resulting in a multi-application smartcard; and
- developing a smartcard scheme *ab initio*, where there was no card before.

These are explored below in Sections 2.4.1 to 2.4.3.

2.4.1 Upgrading existing schemes from non-smart to smart

There are compelling reasons why smart technology may be seen as preferable to 'show and go' cards. Some LAs upgrade from non-smart schemes (for example, leisure cards with barcodes; paper library tickets; a non-smart discount card) to smartened systems where one or more functionalities are loaded onto the same card.

Although a card may not need to be fully smart in order to perform its current functions, adaptability, and a 'once and for all' approach, opens up the possibility to add future smart applications. For example, the majority of buses in England and Wales are not currently fitted with smartcard readers. However, many LA smartcards, and also the Derbyshire Gold Card, are used to deliver concessionary travel in a 'smart-enabled' way. The driver checks cards by sight, rather than the user swiping their card over a smartcard reader, but the cards nevertheless contain chips, and the infrastructure is in place for fully smart bus travel to be rolled out in the future.

As noted in Section 2.2.2, managing several services on the same system allows for a single secure place of data storage. Rationalising in this way makes it possible to support the card centrally, with a single office and point of contact able to handle all applications and services.

Creation of a source of management information enables the authority to design and target services and ultimately, access data that allows it to deliver services in a better way. For example, Caerphilly County Borough Council identified card user demand for Zumba dance classes. It responded by training several Zumba instructors to work in LA leisure centres, and then produced leaflets and banners to market the classes. During the online enrolment process for concessionary bus passes, Southampton City Council's applications website asks users which services they would like the LA to offer in the future.

A service delivered using smart technology relies to only a small extent on physical checking, and enables increased accuracy. The benefits of greater accuracy are especially evident with smart bus travel: smart ticketing, combined with smartcard readers, helps to reduce fraudulent transactions, and increases the accuracy and reliability of usage data (above the level that can be attained from survey data). Smartcards that can be used for smart travel reduce fare avoidance by requiring electronic validation via the card reader when the user is getting on the bus. This validation can even prevent 'pass-back' (when one user validates their card, then passes it to someone else, who also uses that card to board) if the card reader can detect whether a card has been scanned recently. It can also ensure that the card is being used at an eligible time of the day. Using smartcards can prevent bus drivers from not recording transactions, by reducing the amount of cash in the ticketing system, and by reconciling transaction data between journeys taken and fares paid. Reliable, accurate transaction data can support the LA's negotiations with transport operators, and may ultimately reduce the amounts that authorities pay out on non-qualifying concessionary travel.

Bracknell Forest Council's 'Edge' retail loyalty card pre-dated its original smartcard scheme. The LA decided to 'go smart' upon realising that this would allow it to offer more joined-up, cost-effective, accessible services to people living and/or working in the area. The card would promote the authority's early adopter status, strengthen its social inclusion proposition, and facilitate process engineering through usage data and reports.

In contrast, there remain situations where the authority does not pass the 'tipping point', making an active decision to remain non-smart. An example is Derbyshire County Council's Gold Card scheme. In this case, location is a significant factor. Parts of Derbyshire border Nottingham, Sheffield and Manchester, with a relatively large proportion of Derbyshire's residents commuting to one of these areas for work. Sheffield and Manchester both have city region status, and their respective bus and train networks cover large areas of Derbyshire. These authorities are likely to introduce their own smart travel schemes, making it potentially advantageous for Derbyshire to align with one or more of its neighbours, rather than invest in 'smarting' its existing scheme.

2.4.2 Coupling multi-functionality with concessionary travel schemes

LAs beginning with a single-function smart travelcard sometimes add further applications, resulting in a multi-function smartcard. There are a number of reasons for this.

As discussed in Section 2.1.2, from the UK's perspective, smart technology's origins are in transport applications, and there has been more time for the 'smart momentum' to build up in this sector. Consequently, passenger transport executives (PTEs) often attract significant government funding for initiatives such as new smart ticketing schemes. As a result, PTEs make attractive partners for LAs, who may otherwise struggle to secure the funding they need to develop schemes as they would want to. For example, the DfT awarded a smartcard development grant to Merseytravel in 2009. Merseyside Efficiency and Improvement Partnership (MIEP) and Merseytravel are currently collaborating to develop a Merseyside Community Card, combining travel with LA services on the same card.

Secondly, there are indications that including concessionary travel as a smartcard application drives up card user numbers. This translates into greater certainty over card take-up, potentially justifying resource and budget allocated to developing the smartcard scheme. Eventually, the intention is to generate a larger user pool for other card applications, and ultimately to increase the chances of overall success for the card.

Thirdly, when bus travel is delivered via smart technology, the system collects accurate user data. As discussed in Section 2.4.1, this is valuable for the LA and PTE alike. The system is much more resistant to tampering and unscrupulousness: journey data is automatic and self-validating, and therefore does not require the surveys and auditing that 'show and go' cards do, to enable accurate reconciliation of data. This was a key contributing factor to the development of the NoWcard, conceived as a multi-function smartcard, with travel the first application to be delivered.

External organisations, among them ITSO and the Local Authority Smartcard Standards e-Organisation (LASSeO) have worked to facilitate the addition of other services to smartcards that initially had a transport focus. LASSeO, a group of authorities and LA partners, supports nationwide adoption of smart media standards and corresponding specifications to allow and encourage interoperability across platforms, card issuers, local services and environments.⁸ LASSeO has created a technical specification that allows LAs to spread a smartcard's uses between transport-related and other applications. Transport services can themselves be created to meet ITSO's specification, which allows interoperability between different modes of transport, different locations and different types of ticketing products. Transport and other citizen card services can coexist on the same card, meaning that there is scope for an LA smartcard to be interoperable and multi-functional on several different levels.

2.4.3 Development of standalone schemes

Other schemes may be designed using smart technology as an independent route, where there was no previous non-smart card or transport card. This may result from a decision within the LA to adopt smart technology as a means of improving services, either by a specific department, or by the LA's cabinet.

The Caerphilly Smart Card is one example of this model. The card was developed in the context of a strategic commitment of the Welsh Assembly Government and the Caerphilly County Borough Council itself, to use this technology to improve services. More specifically, the Caerphilly Smart Card was inspired by the authority's wishes to create a management information system for leisure services, and to update its libraries information system. The leisure services team realised that the use of smartcard technology could increase retention, reward loyalty and increase user participation in these services, and went on to develop the card with funding and input from library services.

⁸ ITSO Dictionary [online]: <http://www.itso.org.uk/content/documents/itso%20dictionary.pdf>

2.5 Smartcard scheme management models

Scheme management tended to be handled either by a dedicated ‘smartcard’ team sitting independently of any service department, or was seated in a specific department. This section summarises the two approaches to scheme management.

2.5.1 Management by a dedicated smartcard team or responsible individual

Schemes in the remit of a specific smartcard team or individual ‘champion’ tended to have a dedicated group of people to create and manage them, creating scope for long-term objectives.

The team’s work – and indeed its founding – means that the card is likely to have a clearly-defined strategy, objective and budget, agreed by the authority, and with its backing. It is also likely to mean that the scheme must follow an agreed development route: the management team may not be able to veer from this route.

Dedicated smartcard teams occupy a central, relatively service-neutral position, without specific affiliation to departments. They typically have explicit responsibility to liaise between different LA departments, linking multiple applications to the card and change-managing their implementation.

2.5.2 Management in the remit of an existing local authority service

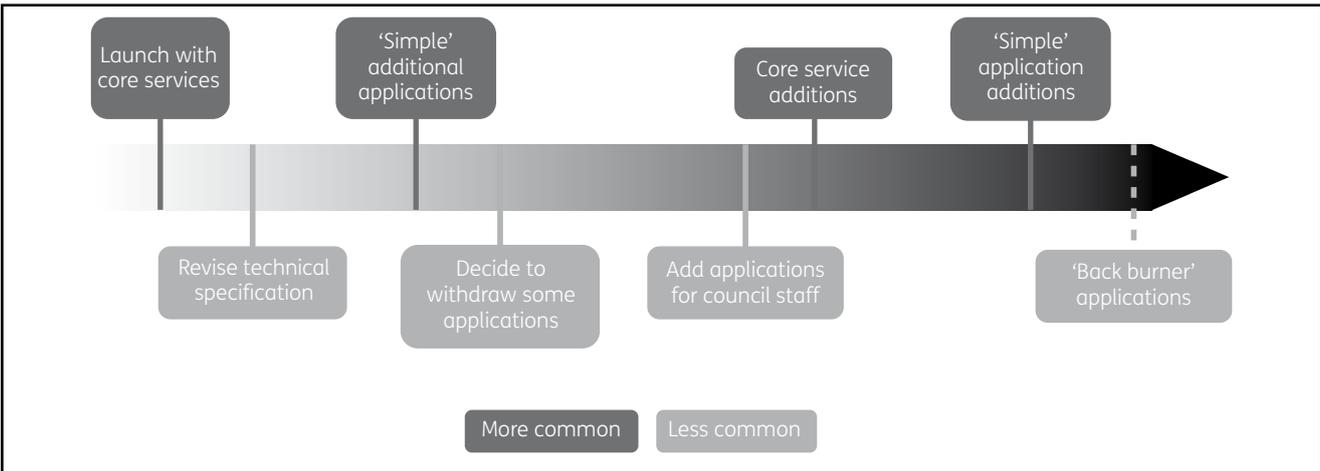
Schemes that stem out of an existing service – be this transport or another – will often display a natural focus on their ‘parent’ service. Devised initially as a vehicle to enable use of a particular LA service, they can be tailored to the exact needs of that service. The card may consequently be perceived as ‘belonging’ to the parent service: responsibilities, resource, and branding might make it hard to link-in additional applications unless there is understanding and support for the card in the wider authority. Development may be restricted in some senses: how can and should the parent service link in other applications to create a more cohesive offering?

This is not to say, though, that a smartcard scheme managed by a particular service will necessarily fall victim to such silo-ing. Caerphilly’s card, which originated in the LA’s leisure services department, has expanded to have applications that tie directly into health, education and social services.

2.6 Scheme evolution

While there is no fixed or ideal development path, the schemes examined in depth reveal some typical phases in evolution, which we describe here. They are summarised in Figure 2.1.

Figure 2.1 Typical phases in the evolution of an LA smartcard scheme



Schemes evolve over time, and may both take in and shed applications: their offering should be understood as fluid, and as a process rather than something that is definitively productised at the outset.

2.6.1 Launch with core services

'Typical' scheme evolution will start with intensive work to allow and complete the card launch. There is the potential for implementation difficulties and a major learning curve at this early stage, as users start to use equipment and technologies they may not have experienced before. It is important that the scheme has support from all levels of the LA, including corporate services, staff dealing with cards on a day-to-day basis, and staff at any additional pilot sites, such as schools trialling cards for registration, cashless catering or building access.

2.6.2 Revision to the technical specification

At some point after the card has gone live with its initial service offering, the management team might realise that a higher-specification of smartcard is needed in order to progress, often because the chip in the card they have chosen does not contain sufficient memory for further applications, or because the existing card does not have the level of security that is required for forthcoming modules. In practice, this is likely to necessitate a programme of replacement that will require further budget, management and staff training, with users who present their cards for use being given an explanation and a new card.

When it first rolled out a smartcard scheme, Bracknell Forest Council used a model of Mifare card, but later replaced these with a more secure model produced by Java Card Open Platform when the scheme was rolled out in libraries.

The implications of a revision to the card specification underline the value of a 'once and for all' approach, when it is preferable to launch a scheme using a card with capacity for extra applications to be added afterwards.

2.6.3 'Simple' additional applications

Once the basic infrastructure is operating successfully and the card has a user base, the management team may seek to add new applications to the smartcard.

It is sometimes possible to achieve relatively rapid and simple expansion of functionality by adding in some 'show and go' applications, such as discounts at local shops and services when the user shows their smartcard, as with the Bolton Smart card. Where a fully smart system is in operation, it can also be straightforward for LAs to add smart applications to the list of card services, and it is probable that this will not necessitate any modification of smartcards already in circulation.

2.6.4 Decision to withdraw applications

It is useful for the smartcard team to ask whether each application included in the smartcard offering really 'adds' to the proposition and the cardholder's user experience. Occasionally, there comes a point where the smartcard management decides to remove certain applications from the card's offering. Bracknell Forest, for example, piloted an interface with some of the borough's schools' cashless catering systems towards the beginning of its smartcard development, later deciding to continue without this application when it proved unsuccessful for some schools in the pilot.

2.6.5 Applications for council staff

Several authorities, including Bolton in this study, created a sub-branded version of the smartcard with specific applications for council staff. The smartcard can be used to streamline the authority's own internal services with both smart and non-smart applications, including buildings access, workplace catering and identification. One proposed use for the Citizen's Cash Card that Liverpool City Council eventually decided not to implement, was to record and reconcile staff expenses.

LA offices, like schools, are in some senses captive audiences where 'rules' can be implemented relatively easily, with the backing of the LA. Cashless catering and buildings access are the types of module that may prove especially useful in these environments.

2.6.6 Additional core services

The next phase in development – often when the scheme has been running for some time and has become established – may be to introduce a second raft of core services: leisure and libraries, say, when the smartcard was previously a travelcard. At this point, there may be a fresh learning curve. The LA may undertake further scoping and piloting work to inform the features of the additional services. A new group of staff in a new service area will begin to deal with the card and its users on a daily basis, necessitating a fresh round of training. Ultimately, though, adding additional services is intended to extend the card's reach to a wider pool of potential users.

2.6.7 Further 'simple' additional applications

As the scheme and its offering develop, new applications can be added to the card, linking it to different services and public bodies, such as academic institutions. Frequently these will be 'show and go' services: examples are concessionary library rentals for disabled users (denoted by a yellow stripe on cards with English National Concessionary Travel Scheme (ENCTS) livery), and Proof of Age Standards Scheme (PASS) proof of age included as a hologram on cards for younger users.

2.6.8 'Back burner' applications

A card scheme is best viewed as an evolving system; not an unchangeable entity. Many authorities with smartcard schemes have applications in mind for the future, but no immediate or concrete plans to roll these out.

At the time of writing, Bracknell Forest planned eventually to add a parking module with preferential rates for borough residents who hold the e+ card, for example. The LA made an informed choice to continue without this functionality when the scheme was designed, in light of the planned redevelopment of Bracknell town centre, and because the authority's parking software was relatively new at this time. Nevertheless, residency status is collected during the card application process, and the parking machines are configured to respond to this data. Eventually this service will be activated. Bracknell's example underlines that it is far easier to collect information for future use, than to try and add it retrospectively for existing cardholders, and that a 'once and for all approach' is a valid one, where there are definite – if not immediate – plans to add additional services to the smartcard offering.

There are plans for the NEC to be used at further education establishments across Scotland. Using the smartcard in these institutions can provide continuity of service for young people moving from school to further education.

2.7 Factors that may affect scheme evolution

Each smartcard scheme is individual: as we have seen, every LA has its own motivations and faces its own challenges. A number of related factors may impact on the way a smartcard scheme grows and develops.

2.7.1 Scheme motivations and objectives

The authority's reasons for developing a card and what it is trying to address, will affect the services that are included on the smartcard, and the prioritisation in extending these. A smartcard that begins life in the transport department, for example, may start as a means to access bus travel, with the next applications also being transport-related.

Caerphilly County Borough Council thought that the use of smartcard technology could increase retention, reward loyalty and increase user participation in its leisure and library services, and these were the first applications included on the card. MIEP, on the other hand, seeks to use its proposed smartcard to introduce increased choice in transportation, such as subsidised taxis, disabled scooter hire and potentially car hire schemes. MIEP hopes to use its partnership with Merseytravel to facilitate the migration of some people from passenger transport supplied by the LA to public transport, creating increased autonomy for cardholders, and increased efficiencies for the partnership that will run the scheme.

2.7.2 Funding

Individual service departments may be able to fund and manage a smartcard scheme from their own budgets, but this may not be feasible in the longer term without buy-in from elsewhere. Reliance on funding from the LA may not be secure in the long term, particularly in light of planned cuts to core central government funding in 2011 for LAs in England. Changes to the authority's administration may result in changes to the way funding is allocated among internal initiatives.

It has been fairly typical for LA smartcard schemes to receive funding from central government bodies, in order for them to develop their offering in an agreed way. Several of the schemes explored in this evidence review had participated in government initiatives such as the NSCP. LAs that took part in this project were assigned to work packages comprising specific tasks, with funding allocated accordingly.

The direction of MIEP's planned Community Card has been dictated to some extent by potential sources of funding. The MIEP connection means that the card must be focused on efficiency savings, while the partnership with Merseytravel entails the inclusion of travel services.

2.7.3 The scheme management team

The continuation of a smartcard scheme has often been dependent on one or two key individuals, or smartcard 'champions', whose expertise and enthusiasm play a significant part in driving the scheme's evolution. This is potentially more likely in cases where the scheme manager has a job role dedicated solely to the smartcard. It is important for the manager or champion's knowledge to be passed on to a wider group; failure to do this can create problems when these individuals move on to other jobs or into retirement.

2.7.4 Project and contractual frameworks

The development of a smartcard scheme is usually run on a project basis, with a timeline, a budget, and milestones for delivery. The LA may wish to include particular services in its smartcard scheme, but may have to accept that these do not necessarily fit within existing frameworks. The example of car parking on Bracknell Forest's e+ card, in Section 2.6, highlights the role of project frameworks.

Contracting regulations may also play a significant role in scheme development: once an external provider has been procured, it is often difficult to withdraw from arrangements.

2.7.5 Learning by example

Some LAs have learned by example about the smartcard systems, operational issues and card applications of others. Longer-established schemes serve as examples for newer ones, asking advice from those already 'in the know'. Caerphilly's scheme managers made scoping visits to Bracknell Forest Council and Southampton City Council when a smartcard was first suggested, and a contact from Bolton Council visited the team in Wales. The team in Caerphilly was able to discuss scheme management and how the technology and software worked in up-and-running schemes, informing their approach as the new scheme took shape. In the case of the NEC, seeking the advice of others removed the need for external consultants during the scoping phase.

Learning from others' experiences may also allow authorities to avoid making expensive mistakes, or to create other cost-saving opportunities. In creating a partnership between the LAs in Scotland, the NEC office was able to bulk-buy the cards themselves.

Bodies such as the SmartCard Networking Forum and LASSeO also give authorities a supportive space to share information and experience.

2.7.6 Pronounced user need

Intended smartcard users' specific needs have informed the functions around which some smartcard schemes are conceived, or which are prioritised. An example is the key influence of geographical remoteness on Cumbria's Rural Wheels service, which was implemented with the specific aim of providing affordable transport to people in rural parts of the county.

2.7.7 The effect of ENCTS

Since April 2008, people of State Pension age (SPA) or above and people with certain disabilities have received free off-peak travel on local bus services across England.⁹ ENCTS requires smartcard schemes that are used to access this entitlement, to be ITSO-compliant.

ITSO is a UK specification for public transport cards, supported by the DfT. The requirement for ITSO compliance has impacted on schemes that use an older, non-compliant card model. Additionally, there are strict ENCTS requirements about card branding: Bracknell Forest, for example, had to revise its card design to make the authority's logo less prominent on cards issued to qualifying older and disabled people, in order for the ENCTS livery to be the correct size and in the correct position on the card.

⁹ December 2009's Pre-Budget Report announced changes to the age of eligibility for concessionary travel in line with the changes that have been made to the SPA. Since 6 April 2010, the age of eligibility for concessionary travel in England has been linked to the pensionable age applying to women.

2.7.8 **Central government decisions**

LAs and their smartcard schemes can be affected by central government decision-making, with decisions made at a higher level having potentially far-reaching consequences for what is delivered as part of a smartcard scheme's offering. For example, a 2009 government review of the way second-tier authorities delivered concessionary travel resulted in responsibility being reassigned from secondary- to higher-tier authorities across Great Britain from April 2011.

2.8 **Summary of key findings**

- Smartcards' use in the UK transport sector dates back to trials undertaken in the 1990s. UK transport operators and the public sector recognised the potential for smartcards in enabling interoperability. This recognition led to the founding of ITS0 in 1999.
- The ODPM established the NSCP, which ran between 2002 and 2005. It developed a 'starter pack' that LAs were able to use in implementing their smartcard schemes.
- Authorities had various motivations for developing their schemes. Some motivations focused on the end user, while others centred on the LA.
- Different routes to scheme development were apparent. One route was the upgrading of a non-smart card scheme to smart technology. Another was the coupling of citizen card functionality with a pre-existing smart travelcard. Alternatively, the LA could develop a smartcard scheme from scratch, with no prior existence of a non-smart card or a smart travelcard.
- Smartcard schemes were managed either by a dedicated team or individual, or in the remit of an existing LA service.
- Original motivations and objectives fundamentally shaped the evolution of the smartcard schemes. A number of other factors affected scheme evolution, such as the sources of funding, learning from the example of others, project and contractual frameworks, and decisions made by central government.

3 Types of smartcard scheme and take-up

Chapter 3 considers the types of smartcard scheme included in the study, as well as take-up of these schemes. The local authority (LA) smartcard schemes included in the evidence review tended to fall into two broad categories: they were either ‘generalist’ cards, available to all residents, and sometimes also to people working in or visiting the area, or ‘specialist’ cards, meant for a subset of people. Sections 3.1 and 3.2 summarise characteristics and benefits of these two types of scheme. As well as variation between smartcard schemes, this chapter notes the variation that can occur within schemes, depending on the characteristics of the end user. Sometimes this relates only to the card’s appearance, and at others to the actual services a user is able to access using smart technology. Section 3.4 examines smartcard schemes targeted at the older population, and take-up within this group.

3.1 Generalist schemes

The generalist schemes in the evidence review functioned in one of two ways. In some cases, the user received a smartcard that included all applications available through the scheme, and chose to use the applications that were relevant to them. Alternatively, the user received a card that was pre-tailored, meaning that it was pre-programmed to only provide the user with certain applications. This was the case for Bracknell Forest Council’s e+ card: council staff registering a new user would activate more or fewer modules, depending on which were appropriate to that user.

3.1.1 Benefits of a generalist approach

Generalist schemes have the potential to affect the lives of a relatively high proportion of citizens. One card can make a difference to a range of user groups, such as schoolchildren, older people, council staff, and disabled people. LAs may therefore opt for a generalist scheme because it is more inclusive, as they can potentially use it to reach out to every member of the local community.

LAs may also prefer generalist schemes from a practical point of view. They may think that the initial financial outlay for the smartcard infrastructure is only justifiable if they use it to achieve wide-reaching benefits.

This approach could be advantageous to LAs if they are able to realise benefits from partnership building. For example, the National Entitlement Card (NEC), a nationwide smartcard scheme in Scotland, has brought about financial savings through the 32 Scottish LAs collaborating rather than acting independently. The authorities were able to save on cost at the procurement stage due to the financial leverage they held together.

On a smaller scale, two LA divisions can collaborate to deliver one smartcard service, reducing duplication of effort and therefore potentially cutting costs. For example, the Caerphilly Smart Card facilitates this kind of cross-functional working: it manages the process by which GPs refer patients to a 16-week fitness course at their local leisure centre at a reduced rate. This service helps to cut long-term healthcare costs by promoting healthy living and creates more business for leisure centres in the county.

3.2 Specialist schemes

Some LAs have developed specialist schemes because they have identified a particular need, usually relating to a specific group, which they feel they can address most effectively using smart technology. This identified user group need drives the choice of services to deliver via the smartcard. For example, Cumbria County Council launched the Rural Wheels service to deal with the issue of rural exclusion. This service provides affordable travel to people living in remote areas of the country, who are not served by local bus routes.

It is possible for schemes to go through an initial phase of being specialist, and then evolve into generalist schemes. LAs may seek to gain confidence in smart technology, and therefore test it with a specific user group before investing in it on a long-term basis. Both Dundee City Council and Bracknell Forest Council piloted their smartcard schemes in schools, before expanding them into generalist schemes.

3.2.1 Benefits of a specialist approach

LAs may opt for specialist schemes because they wish to make a big impact to the lives of a particular group. The user group may be relatively small in number, but the benefits they receive through the scheme can be considerable. Specialist schemes are potentially preferable when LAs wish to meet a particularly pronounced need, in circumstances where a specific group would benefit significantly from a particular smartcard service. Cumbria County Council perceived rural exclusion as a pronounced need that it should address, and it has done this through its Rural Wheels service. The smartcard team carried out focus group research after the initial pilot, which generated qualitative feedback indicating that the service had proved life-changing for some users in remote areas of the county.

Specialist schemes can prove attractive if generalist schemes seem unwieldy to LAs first experimenting with smart technology. ‘Starting small’ and focusing on delivering services to one or two specific groups gives authorities time to become accustomed to the smartcard, before they extend its use to the wider population.

There are typically fewer stakeholders involved in scheme development, implementation and management with this approach. Smartcard teams may be less likely to face the challenge of coordinating different providers or internal divisions.

3.3 Variation within schemes

Smart technology has the potential to offer a high level of flexibility: the same card can be configured to do different things for different people. Variation within schemes can be limited to its show and go functionality, with eligibility for a certain service being shown by the appearance of the card. The card design may vary according to user attributes, such as age group, residency or eligibility for an entitlement. There is also variation in smart functionality, meaning that differences between users’ card capabilities are written onto the actual card chip and are verified by a smartcard reader, as opposed to by sight. Sometimes, aesthetic differences demarcate a difference in this functionality as well: for example, young cardholders in Bracknell Forest can use their cards for proof of age by showing the date of birth printed on their cards and via a card reader as well.

3.3.1 Aesthetic variation within schemes

Even though six out of the seven authorities included in the evidence review had opted for smart technology, often variation in functionality was not ‘smart’; smartcards tended to have some show

and go functionality as well. Although show and go has functional limitations (see Section 3.3.2 below), the relative simplicity of this approach leaves relatively little room for problems to occur, whereas smart functionality relies on hardware such as card readers and scanners in order to work.

By including certain features in the smartcard's design, authorities have been able to reduce the number of cards citizens have to carry around with them. For example, smartcards owned by young people sometimes included a National Proof of Age Standards Scheme (PASS) hologram and date of birth, meaning that they did not need to carry a provisional driving licence or other form of identification to verify their age. Bracknell Forest Council's e+ card and Scotland's Young Scot card both include the PASS element; Bolton's B'Smart card only includes date of birth.

Similarly, smartcard schemes that include the English National Concessionary Travel Scheme (ENCTS) remove the need for eligible citizens to carry around a separate card to receive this concession. In most English authorities other than those using the NoWcard, verification is show and go for this card application. Concessionary bus travel eligibility in Scotland used to be verified by showing the NEC, but since August 2010 eligibility has been verified by a contactless reader in every Scottish authority.

LAs may choose to introduce different aesthetic permutations simply so that users feel that their smartcard is more relevant to them. Different card branding for children and adults is intended to produce greater user affinity with the card. For example, Bolton Council issues B'Smart cards to 11–16-year-olds and Bolton Smart cards to over 16s; the two cards have similar capabilities, but the branding is different.

3.3.2 Smart variation within schemes

Even though the appearance of the card can often demonstrate its capabilities, smart variation has some considerable advantages over aesthetic variation. A major benefit of smart functionality is that card applications can be updated on the chip without the LA having to issue a new card to the user. Updates necessitating a change to the card's appearance are more complicated: for example, the NEC includes the logo of the issuing LA, meaning that cardholders who move to a different LA will have to apply for a new smartcard, in order to access services specific to their new authority.

Smart functionality produces more accurate records of service use, which authorities can use to assess their spending and to plan and deliver services in future. Transport authorities, for example, can find usage data particularly valuable; a key motivation for launching the NoWcard was the potential for using smartcard journey data to carry out accurate invoicing and concessionary fare reimbursement.

Delivery via a smartcard also provides non-stigmatised access to certain services. Smartcard schemes including Bracknell Forest's e+ card and Bolton Council's B'Smart card for 11–16-year-olds ensure that schoolchildren entitled to free school meals receive them in the same way that other children receive their meals, with no visible difference in the cards' appearances. This helps to overcome discrimination towards children receiving free meals, and the more general problem of families rejecting free school meals because of the stigma attached to receiving them. Similarly, the Caerphilly Smart Card offers non-stigmatised free access to leisure facilities and to library activities for children in social care and care leavers.

Smart functionality can also provide better security than show and go, as it precludes the possibility of human error, and can remove the need for more formal security clearance. Council staff in Bolton and Caerphilly gain entry to offices via their smartcards. In Dundee, the city council uses the NEC to restrict access to IT suites, for example, in schools.

Access or verification via a contactless reader tends to be quicker than show and go: using it to access bus travel takes less time than the driver having to take a look at each traveller's card. However, it is typically faster to check a show and go card than a contact smartcard.

3.4 Schemes targeted at older people

The smartcard schemes included in the evidence review tended not to target older people specifically. It was more common for them to target travel concessionaires, a group comprised disproportionately of older people but which also includes eligible disabled people. Generalist schemes have applications intended for concessionaires or older people specifically, as well as other user groups.

Schemes tended not to target older people because the LAs did not usually pilot schemes with this group. They preferred to test smartcards in schools initially because they assumed that young people would be most comfortable with the technology, and they saw this group as a 'captive audience': schools are closed systems, where processes can be controlled relatively tightly, so take-up should be higher and easier to monitor. Bracknell Forest Council piloted its smartcard scheme with schoolchildren, so the card initially featured modules that were relevant to this particular group, such as youth club membership, cashless catering and school attendance checking. Similarly, schoolchildren were the original users of the Dundee Discovery Card.

3.4.1 Card take-up among the older population

Evaluating card take-up among older people has been difficult, as often LAs have not broken down figures by age; it is possible that they have been more concerned with efficient and effective service delivery overall than with take-up among certain groups. However, the limited evidence available infers that take-up among older groups has been relatively high when schemes offer concessionary travel, and relatively low when schemes have not offered this concession. This is especially the case when the smartcard has been the only way to receive concessionary travel; the NEC is the only way for older people living in Scotland to receive free bus travel, and take-up in the State Pension age group is approximately 84 per cent. Anecdotal evidence from Dundee's version of the NEC supports this finding regarding the effect of concessionary travel on card take-up. Conversely, the Caerphilly Smart Card cannot be used as a concessionary travelcard. Forty-two per cent of people aged 61-80 and 23 per cent of the over 80s own a card, compared to 58 per cent of people under the age of 21.¹⁰ Although it is impossible to deduce that low card take-up among older age groups is due to the absence of travel concessions, other schemes in the evidence review using their smartcard for concessionary travel appear to have higher take-up among these groups.

3.5 Summary of key findings

- We observed two broad categories of LA smartcard scheme: generalist schemes and specialist schemes.
- Generalist schemes can provide benefits to a relatively large proportion of the local community. Wide-reaching benefits may be crucial for authorities looking to justify the relatively high cost of a smartcard scheme.
- Specialist schemes have the potential to make a relatively big impact upon a particular group. The specialist approach may also be desirable for LAs looking to 'start small' with the introduction of smart technology in service delivery.

¹⁰ Card take-up data from the Caerphilly Smart Card team.

- A great deal of variation in functionality existed within smartcard schemes; one card can be configured to do different things for different people. Often this variation was not 'smart', but rather aesthetic: the smartcard could also be a show and go proof of age card or a means by which to prove ENCTS eligibility.
- Smart variation has certain advantages over aesthetic variation, such as the fact that updates can be made to the card's chip without the authority having to issue a new card to the user. Smart functionality also produces more accurate records of service use, provides non-stigmatised access to certain services such as free school meals, and is a more secure mode of access than show and go.
- The older population tended not to be targeted as a user group. It was more common for travel concessionaires to be targeted, which as a group is disproportionately made up of older people.

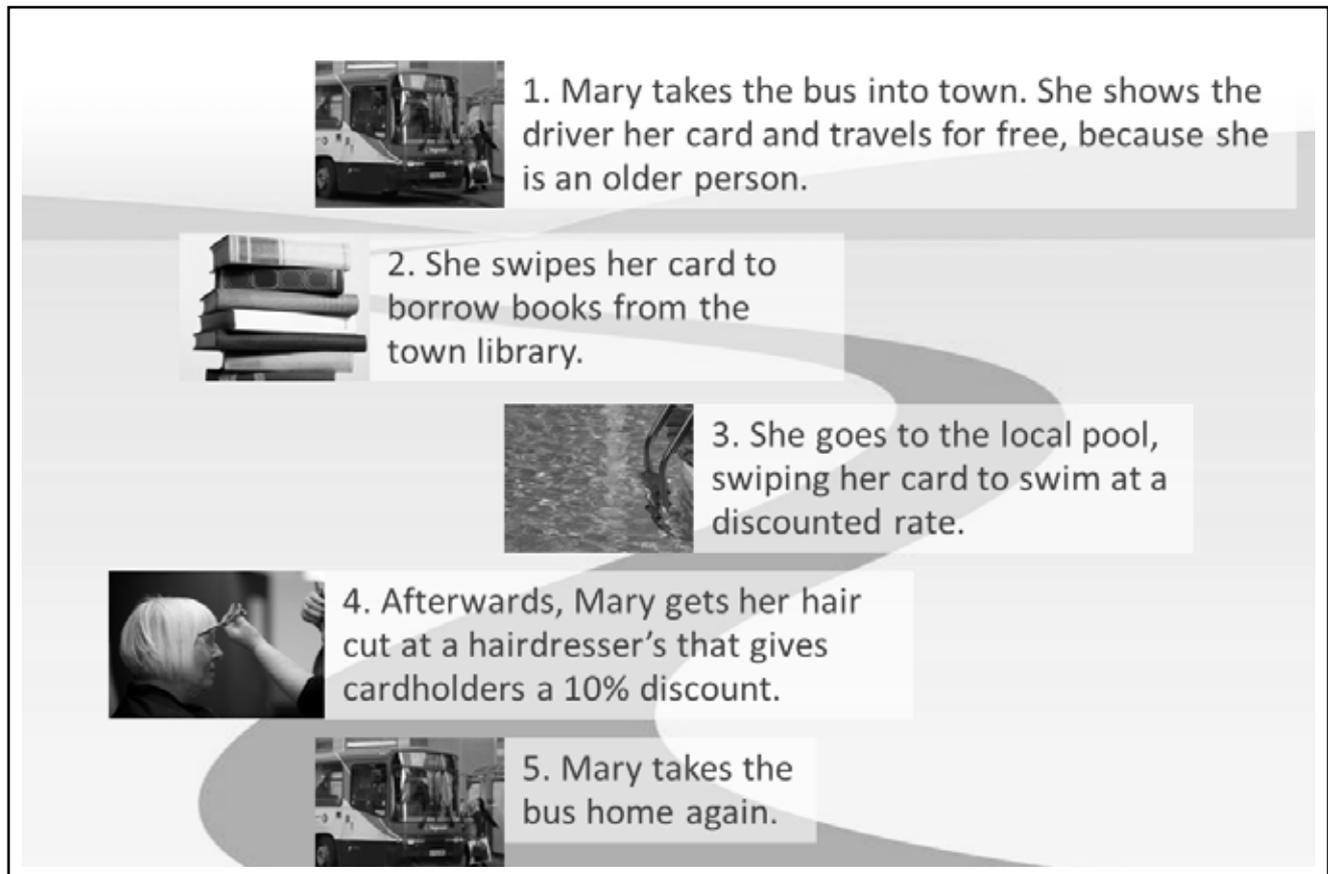
4 Smartcards in action: the services they provide and operational issues

This chapter explores the services that smartcards provide and the operational issues that local authorities (LAs) had encountered. In the first section of this chapter, we note that the LAs we spoke to typically had smartcard schemes with ‘core’ service capabilities in the areas of transport, leisure, libraries and retail discounts. Section 4.2 serves as an overview of services intended for older people specifically, while Section 4.3 looks at other smartcard services that the LAs offered, which often were connected to the core service capabilities but otherwise opened up the smartcard’s offering into new, standalone service areas. We found that authorities had come across several operational issues when running their schemes, which we will outline in Section 4.4.

4.1 Core smartcard services

Authorities commonly included certain services in their smartcard schemes; we have identified these as ‘core’ services. They include general access to transport, leisure and library services, as these are fundamental LA services that are typically accessed using a card anyway. Some authorities also opted for retail discounts to be part of the smartcard offering, with cardholders usually accessing these by showing their card in participating shops and services. A motivation for including this service has been to create a financial incentive for scheme take-up; another has been to support the local economy.

The concept of ‘joining up’ these core services is central to understanding smartcards’ benefits. A user can make the most of their card by using it to deliver a service ‘package’, comprising a number of different services. Figure 4.1 is an example of a potential combined service offering, which includes concessionary bus travel, library access, concessionary swimming, and a reduced-rate trip to the hair salon.

Figure 4.1 Mary's smartcard journey

4.1.1 Transport

A number of arguments have been put forward for the introduction of smart technology for transport. Smart ticketing can produce more accurate user data, facilitating improved service planning and enabling more accurate invoicing. Smart travelcards may also be less open to fraudulent activity than show and go passes.

Smart travel schemes have existed for many years. The Department for Transport (DfT) has investigated the possibility of achieving nationwide coverage of interoperable smart ticketing schemes¹¹, which are smartcard travel schemes that allow passengers to use their card on non-local bus and rail networks. It has also provided £20m of funding for smart ticketing pilots in nine urban areas.¹² For example, Merseytravel received funding from the DfT for its rollout of smart travelcards, which is currently underway.

4.1.2 Leisure and libraries

Having a combined card for leisure and library services may result in a reduction of administration costs for council staff. It may prove more convenient for the end user as well, because they only have to register for services once and carry one card. It is important to note that library services are

¹¹ DfT and Detica (2009). *The benefits and costs of a national smart ticketing infrastructure*. [online]: <http://www.dft.gov.uk/pgr/regional/policy/nationalsmartticketing/ticketreport.pdf>

¹² DfT (2009). *Smart and Integrated Ticketing Strategy*. [online]: <http://webarchive.nationalarchives.gov.uk/+/http://www.dft.gov.uk/press/speechesstatements/statements/ticketing-strategy>

not always fully 'smart': library staff may still issue books and other materials using a barcode on the smartcard and barcode reader.

4.1.3 Retail discounts

Offering cash discounts for local shopping and services through a scheme presents potential users with a clear benefit of registering for a card. Depending on the range of discounts on offer, this card application can provide widespread scope to use the card, and it can become a feature of a person's everyday life. Due to the appeal of financial savings, the inclusion of retail discounts as a card service is one tactic for encouraging take-up. Another benefit for authorities may be that it shows them to be proactive in supporting the local economy.

Sometimes LAs have sought to incorporate pre-existing standalone retail discount schemes into new smartcard schemes. Bracknell Forest's e+ card was preceded by the non-smart Edge retail loyalty card. Similarly, the Merseyside Improvement and Efficiency Partnership (MIEP) hopes to incorporate the retail discounts currently offered by the Capital of Culture 08 Card into its planned smartcard scheme.

4.2 Services for the older population

Few card applications included in the study were intended specifically for older people. However, applications existed that older people were more likely to use than some other user groups. The card service most likely to be taken advantage of by older people appeared to be concessionary travel, where it was included in the wider scheme. This was especially the case if the LA smartcard was the only way to access concessionary travel, as was the case in Scotland and Derbyshire: the issued smartcard was a requirement for eligible citizens wishing to travel at the concessionary rate (even if used as a show and go card, as in Derbyshire).

Older people may also particularly appreciate retail discounts available through the smartcard scheme, as these help them to live on a budget. Although government funding for free swimming was withdrawn at the end of July 2010, some authorities have continued to offer free swimming to the over 60s via their schemes. At the time of writing, Bolton Smart's FreeBie leisure scheme also offered other free leisure activities for residents aged 65 and above, such as aerobics, badminton and t'ai chi.¹³

Older people can benefit from a joined-up service offering using a combination of card services to deliver substantial improvements to their quality of life. An older person can journey into the town centre by free off-peak bus travel, before taking advantage of retail discounts and free leisure activities and visiting the library, for example.

The non-smart Derbyshire Gold Card, which is specifically for older people and disabled people, works on the assumption that the people who use it rely to a relatively high extent on public transport and have relatively little disposable income, and that concessionary travel and retail discounts are likely to be attractive to them. Residents of the county can only receive English National Concessionary Travel Scheme bus travel via the card, so this drives take-up of the Derbyshire Gold Card. The card offers discounts at over 1,300 shops and services, such as hair salons, home improvement centres, repair services, fashion outlets, restaurants and cafés.¹⁴ Additionally, the scheme serves as a way

¹³ Further details on Bolton Smart's FreeBie scheme: <http://www.bolton.gov.uk/campaigns/Documents/Freebie.htm>

¹⁴ Further details on retail discounts offered through the Derbyshire Gold Card scheme: <http://www.derbyshire.gov.uk/community/goldcard/discounts/default.asp>

for the LA to communicate with older people about information on relevant issues: the scheme's biannual Derbyshire Gold magazine covers issues such as safety, health and benefit entitlement.

An overarching achievement of the Derbyshire Gold Card is the way that the scheme has engendered a feeling of membership, as users are part of a 'club' for their demographic, with its own card, magazine, discounts and free items. Through this coordinated offering, Derbyshire County Council hopes to promote a better quality of life for older residents and increase its engagement with them.

In addition to concessionary travel and retail discounts, it is possible to conceive cashless smartcard services as favourable for older people. Qualitative and quantitative research conducted by Cumbria County Council in connection with its Rural Wheels service has indicated that cashless functionality is attractive to the older population because they prefer not to carry money. The Rural Wheels scheme, which provides subsidised taxi journeys to people living in remote areas not served by buses, operates a cashless system whereby users can top up an e-purse in numerous shops and service vehicles themselves. An authority-commissioned external review of the scheme in South Lakeland in 2003 established that 77 per cent of the 63 service users who participated were over 65, and 82 per cent of respondents agreed that using a smartcard to pay for journeys was easier than paying with cash.¹⁵

Caerphilly County Borough Council currently provides Direct Debit payment for 'Meals on Wheels' through its scheme: clients who pay by Direct Debit have this flagged on their smartcard user record so that staff can swipe the card to check the service has been paid for. Bolton Council plans to add an e-purse to pay for Meals on Wheels with a handheld reader.

Among the smartcard schemes included in this evidence review, we identified few other services designed for older people specifically. However, personalised payments have the potential to be a future card service that would be particularly relevant to the older population. One of the proposed service areas for Liverpool City Council's cancelled Citizen's Cash Card was payments, including domiciliary care reimbursement and benefit payments. MIEP hopes to offer something similar through its planned Community Card, and a potential future service in the Caerphilly Smart Card scheme is benefit payments. Providing older people with a more individualised service package via the smartcard could provide greater awareness of entitlements, as well as a convenient way of accessing these, ultimately helping them to live independently for longer. In practice, an older person could opt to receive a certain benefit payment via their card, and other services and payments they are entitled to could be highlighted to them during the registration process and also in their welcome pack.

4.3 Other smartcard services

Authority smartcard schemes in the evidence review have tended to grow in such a way that newer card services link back to core service capabilities. For example, authorities may expand transport functionality from solely concessionary travel for older people, to include applications specifically for younger people, such as concessionary rates or the use of smartcards on school buses. They could additionally increase the card's leisure service capabilities from free swimming for over 60s to include discounts for vulnerable groups, or even incentives to use leisure facilities, in order to deliver health benefits. At the time of writing, the Caerphilly Smart Card exemplified this by offering free access to leisure facilities to children in social care and cheaper access for families and individuals

¹⁵ External service evaluation survey referred to in Commission for Integrated Transport. Mott MacDonald (2008). *The role of taxis in rural public transport: Phase 2 Case Study Report – Rural Wheels*.

as part of Caerphilly's Fun, Food and Fitness Project (F3 Project) and its GP-referred exercise scheme respectively. Scotland's National Entitlement Card (NEC) has linked health services to retail discounts with its 'Give It Up for Baby' and 'Quit4U' initiatives, which offer participants financial incentives to stop smoking. By taking a test to prove that they have not smoked in the last month, participants receive a voucher on their NEC's e-purse, redeemable in Asda supermarkets against any products other than alcohol and tobacco.

Service areas may also include services that are not linked to the core card capabilities. 'Standalone' services in authorities' schemes included transplant register verification; certain services for younger people such as cashless catering and vending in schools and the National Proof of Age Standards Scheme; and services specifically for council staff like door access, cashless catering and vending machines.

4.4 Operational issues

Authorities included in the evidence review have faced certain issues when developing and managing their schemes. A major concern among management teams has been how end users feel about the data the LA holds on them as a result of the smartcard scheme, but this has been less of an issue than originally anticipated. However, other issues have emerged as significant: leisure and library staff, for example, have sometimes struggled to adjust to new 'smart' work processes. Problems have also sometimes arisen with the functioning of smartcard hardware.

4.4.1 Ethical issues

Some LAs worried about citizens perceiving them as 'Big Brotherly', due to the user information held on their smartcard database. However, cardholder data protection concerns have not been too big an issue for authorities to overcome. In over five years, the Scottish NEC's customer services desk has only received an estimated 20 or 30 enquiries for the whole of Scotland about card user details held on the smartcard database. The majority of these were from parents seeking clarification before authorising a card for their child. Similarly, Bolton Council has received few enquiries from users regarding its smartcard database. Bracknell Forest Council has heard anecdotal feedback that a few people objected to specific terminology more than any serious data-related issue: they responded negatively to the smartcard 'database' when it was referred to as such, not realising that their details were already held on, for example, the LA's library database.

Some authorities discovered that a few parents took issue with the photographing of their infant or young child for the smartcard. Both Bolton Council and Bracknell Forest Council have come across this concern. To overcome it, these LAs stipulate that a photo is required only if the applicant is aged three or above.

4.4.2 Organisational resistance

In some cases, smartcard teams have had to deal with organisational resistance, in response to the change necessitated by the move to smart technology. There has sometimes been a 'transition period' when council staff were not yet accustomed to the smartcard system: at times they forgot to conform to new work processes or showed deliberate resistance to them. This issue underlines the importance of adequate training for on-the-ground staff on using smart technology, and of creating a shared understanding of the overarching aims of the smartcard scheme.

4.4.3 External providers

Some smartcard teams have encountered difficulties when working with external providers. These may have limited experience of working with local government or public sector bodies, and may not have a full understanding of the public sector's motivations and concerns. For example, Bracknell Forest Council found that an external provider it worked with early in the scheme's development did not understand its needs and consequently failed to meet them. Eventually, the authority was able to contract the provider that offered the best value and 'fit' with the scheme's objectives.

4.4.4 Hardware issues

On occasion, physical smartcard equipment, such as the card readers and scanners, broke down. If a reader breaks down and staff do not notify the smartcard office in good time, they may substitute the function of the reader with a manual process, resulting in the loss of smart data collection. To avoid this happening, some authorities have suggested that council staff manning service points be trained always to report broken machinery promptly, as well as to understand the benefits that come from swiping the smartcard to access services.

The smartcards themselves can be damaged and in need of replacement. Typically schemes in the evidence review charged a fee for a replacement or a second replacement card in the range of £2.00 to £7.50; this could deter some people from applying for a replacement card.

There is anecdotal feedback that when schemes have been piloted in schools, some pupils defaced and damaged their cards. It may be the case that when users do not feel there is a clear need for, or benefit from, the smartcard, they show less respect for it. For example, a school stands to benefit more from implementing a card that reduces time spent on registration and carrying out catering transactions, than an individual child does.

4.5 Summary of key findings

- Among the smartcard schemes included in this evidence review, travel, leisure and library services were the 'core' service capabilities. Retail discounts were also commonly included.
- Smartcard services were not typically for older people specifically; they were intended for various groups, although older people were disproportionately frequent users of concessionary bus travel, and some other card services were more likely to be used by this age group than others, such as retail discounts and reduced-rate leisure access.
- Newer card services often linked back to the core service capabilities, but still expanded the smartcard's offering into new areas such as health and young people's services. Other new services were standalone, such as those specific to council staff.
- Authorities were concerned that collection of data through their smartcard schemes would make them appear 'Big Brotherly', but this has been far less of an issue than originally anticipated.
- On occasion, organisational resistance has been an issue. If on-the-ground staff do not understand the aims of the smartcard scheme, they may accidentally or even deliberately not conform to new 'smart' work processes. Similarly, a lack of understanding can be problematic when it comes to staff dealing with broken-down machinery.

5 Driving and monitoring card take-up and use

Chapter 5 explores the ways in which the local authorities (LAs) studied in the evidence review attempted to enable and encourage card take-up, and how they monitored and evaluated their efforts. In Section 5.1, we note that encouraging take-up was often passive, in that LAs tried to ensure that there were no significant barriers to scheme entry and to make their schemes attractive to potential users, but did not explicitly promote the schemes. Section 5.1.4 looks at how Derbyshire County Council has promoted its Derbyshire Gold Card to older people specifically.

Section 5.2 considers the monitoring and evaluation of schemes, looking at how management data has been used and its limitations. It also outlines other types of scheme evaluation that authorities have carried out.

5.1 Encouraging card take-up

The LAs included in the evidence review sought to enable card take-up by ensuring relative ease of entry into the smartcard scheme. Other ‘passive’ ways of encouraging citizens to apply for a smartcard included making the card the only way to access certain services, and adding council staff-specific services to spread awareness of the scheme within authority circles. Authorities have also tended to engage in more ‘active’ scheme promotion, by means of marketing, campaigning and other forms of outreach, although the extent to which they have actively promoted schemes varies.

5.1.1 Enabling card take-up

Making the scheme accessible can be important for ensuring a reasonable level of card take-up. Authorities typically provided multiple locations for registration, meaning that most citizens would be within easy reach of at least one. Often council staff made smartcard application forms available in all local libraries; in some cases they also did this at leisure centres, LA offices or One Stop Shops. Most authorities required applicants to carry out some form of in-person ID verification at one of their specified locations to complete the registration process. Alternatively, applicants could often complete a form online, which could later be matched with proof of identity when the individual took this to a council office that handled applications. Applicants would typically receive the smartcard and a welcome pack in the post a week or two later.

None of the schemes studied in this evidence review offered complete online registration, so accessibility of scheme entry was still not guaranteed for all groups. Even if LAs process applications at numerous locations, some people may still have to travel a considerable distance to reach one. For people with impaired mobility, any kind of in-person requirement for scheme registration may present a challenge. One example of an LA that has offered completely online registration is Southampton City Council, where older people can apply for bus passes online, with an identity check carried out by Experian, rather than requiring the applicant to provide documents to the LA in person.

Of the schemes in the review, only Cumbria County Council’s Rural Wheels service did not require applicants to visit an LA location to complete the application process: applicants sent forms by post with a cheque for £5, which would be credited to the card as its opening balance. It would be contradictory to the nature of the scheme to make applicants travel to complete registration, since it is for people who live in remote areas.

Authorities have also tried to make schemes accessible to all intended user groups by offering free registration. Some application locations have been equipped with digital cameras or webcams, so that applicants do not even need to pay for a passport photo. This said, the LAs typically charged a fee for replacement cards, or in the case of Bracknell Forest, for the second replacement card. This could possibly deter some people from re-entering the scheme.

5.1.2 Service-driven card take-up

In some instances, the fact that the card is currently the only way to access a particular popular service, such as concessionary travel, has potentially been behind the cards achieving a certain level of take-up. This has been the case in Bracknell Forest and in Cumbria, for example, where people eligible for English National Concessionary Travel Scheme travel must register for an LA smartcard to access this service. Similarly, concessionaires in Scotland can currently only receive free bus travel through the National Entitlement Card (NEC), and 16 to 18-year-olds can only realise the benefits of the National Concessionary Travel Scheme for Young People by registering for a Young Scot card. In this way, the smartcard becomes an essential service card for some users, instead of an ‘optional extra’.

Adding services to a smartcard scheme has been another driver of card take-up not involving any explicit advertising on the LA’s part. New applications could target groups that previously had little reason to register with the scheme. For example, Bolton Council expanded the potential user base for Bolton Smart when it introduced applications specifically for young people, as part of the introduction of the B’Smart permutation of the smartcard. The authority identified a relatively sharp increase in take-up at the time of this event. Moreover, schools in the town potentially boosted take-up by informing parents of the free school meals service, where they identify children entitled to free school meals through their IT systems, making it possible for the LA to send direct mail to their parents. Parents can then register their children for the smartcard, allowing them to receive free school meals.

Additional card applications that give financial incentives may be particularly effective in encouraging take-up. Authorities in the evidence review have often included a retail discount application in their schemes at the point of launch because it has the potential to make the smartcard proposition more attractive.

A few LAs, including Bolton Council and Caerphilly County Borough Council, currently require employees to use the card at work for applications such as door access and cashless catering. This serves as a means by which all LA departments can become familiarised with the scheme, regardless of whether it provides services that are directly relevant to their department.

5.1.3 Active scheme promotion

The extent to which an LA actively promotes its smartcard scheme will depend a great deal on the financial viability of this marketing activity. A national scheme such as the NEC has received sufficient financial support to market itself quite heavily: the NEC project currently has significant funds dedicated to it, and can rely on partners such as sQuid and Transport Scotland to share advertising costs. Other schemes have tended not to have a big marketing budget, and some will not have any funding for marketing specifically. Consequently, LAs have typically attempted to increase awareness of their schemes by making use of pre-existing channels; publicising them in free LA magazines or newsletters already in circulation and on their websites does not usually entail significant additional cost. These media can be used to inform and update citizens about the smartcard.

Some LAs have done additional promotional work, such as disseminating dedicated scheme magazines, leaflets and posters to increase awareness, or even producing ‘freebies’ that carry the smartcard branding. Marketing materials have usually been available in LA locations, and sometimes via commercial channels as well: council staff in Caerphilly have promoted the LA’s smartcard in local Tesco and Morrisons stores, and the NEC has been advertised on TV and local radio, for example.

To date, it has been less common for council staff to engage in personal outreach, because of the time and resources required for this type of scheme promotion. When this has occurred, it has involved setting up a stall or tent at a festival, as members of the Young Scot smartcard team have done previously at T in the Park, or attending citizen forums to discuss the scheme with prominent or ‘active’ members of the local community.

Occasionally, smartcard teams have launched a campaign to promote a particular service offered with the scheme, usually at the point of its introduction. Again, this can be considered a resource-intensive promotional activity, and most schemes have not yet explored this method. An example of this was a campaign in Dundee to promote its smoking cessation programme, which involved the distribution of promotional materials to GP surgeries, pharmacies and smoking cessation groups, bus shelter advertising at various sites across the city, and local press and media coverage.

Another means of promoting a scheme is to give cardholders cash, or another ‘gift’ incentive to encourage use or card take-up. Launching its e+ card, Bracknell Forest Council offered the first 300 applicants a starting balance of £5. Occasionally authorities have organised ‘giveaways’ when the scheme is well-established, so as to demonstrate its continuing relevance to users. The intention behind this is to promote repeated use of the card once a certain level of background awareness is established. To this end, some LAs have also signposted potential points of use such as cash tills and shop windows with the card branding, to remind people when they should use the card.

5.1.4 Encouraging card take-up among older people

Typically, authorities included in the evidence review had not attempted to market their schemes to older people specifically, except in the case of the Derbyshire Gold Card, which is only for older people and disabled people. Promoting the smartcard scheme among older people can potentially be more challenging, and therefore require a more concerted effort on the part of the LA. This is largely because of the relative difficulty of ensuring accessibility for, and raising awareness among, the more elderly members of this user group, who may be isolated and less engaged with society or digitally excluded. Authorities may have to reach out to older people in more direct, personal ways as well as utilising conventional promotional channels.

In terms of raising awareness among older age groups, day-to-day reminders of the scheme can serve as reminders of how they can use their cards. The project team of the Derbyshire Gold Card has produced branded physical keepsakes intended to prompt people to use the card, such as a diary and a key ‘fob’ that can be used for releasing a supermarket trolley, as well as a wallet-sized list of all card services. Signage at points of card use is also a tactic Derbyshire County Council has employed to remind older people when they can use their Gold Card; and all shops and services that offer discounts for cardholders are given ‘use it here’ signs to display in their premises.

For some older people, entry into the scheme may be problematic. Even with numerous locations for user registration, offering home visits to help people apply for a card may be necessary in special cases. When the Derbyshire Gold Card was launched, members of the county council’s Public Relations team visited more than 100 housebound people, as well as day care centres, to help people apply for the card.

LAs can make use of an understanding of the needs and preferences of older people when promoting a scheme to this audience: for example, understanding older people's concerns for safety and then providing them with helpful publications and free safety check services, as Derbyshire County Council has done with electric blankets. The LA has also met regularly with '50 plus forums' across the county to discuss local issues.

5.2 Monitoring and evaluation of schemes

There are indications that monitoring and evaluation of schemes so far has been limited. Although LAs stand to benefit from the transactional data produced through card usage, most included in the evidence review were only aware of the number of smartcards they had issued. They were able to estimate overall penetration of the scheme, but generally did not routinely produce breakdowns by age, ethnicity or location, or assess individual service usage. There were several reasons behind the limited use of smartcard data, including ethical issues concerning the data collected about users and the difficulties of evaluating a scheme that was constantly developing.

5.2.1 How management data has been used

If an LA is focused on making efficiency savings, accurate spend reporting is important and smartcard usage data can be a useful tool for this reporting. Liverpool City Council planned to monitor and control its spending with the Citizen's Cash Card. The idea for a cash card surfaced when council staff were thinking of ways to improve the management of certain types of authority-supplied payments, such as emergency cash payments and employee petty cash claims. With this functionality, it could monitor staff expenses more closely, encouraging employees to reduce external expenditure where possible. The authority hoped to use the management information generated by card usage to identify further areas where savings could be made. As part of its plan for the Merseyside Community Card, the Merseyside Improvement and Efficiency Partnership intends to use the data generated from card usage to identify opportunities for reducing client reliance on authority-sourced and supplied passenger transport, such as taxis, and for migration to suitable public transport.

Authorities can also use transactional data to monitor take-up of a particular service. Caerphilly County Borough Council has used data to monitor the progress of users enrolled in its GP leisure referral service: whereby health referral experts can see which leisure activities users have accessed, and how frequently. Similarly, the smartcard team can ensure that users enrolled in the Fun, Food and Fitness (F3) Project, which gives whole families the chance to participate in a ten-week 'healthy living' course at a reduced rate, are meeting the condition that they must take part in a leisure activity at least twice a week. Bracknell Forest Council also monitors take-up of its GP referral service, together with longer-term use of leisure facilities. Cumbria County Council can monitor Rural Wheels service usage, to ascertain how many journeys users are making and for what purposes. For example, analysis of service usage in the South Lakeland region published in 2008 showed that journeys were often to shops and social events, as well as health-related trips.¹⁶ Usage data published in the same report showed the number of passenger journeys made per year, annual cost of the service and the percentage of the overall cost of the scheme met by the LA, as opposed to passenger fares.

Councils can additionally use smartcard data to improve service provision. By 'profiling' end users and monitoring service demand via the smartcard, they may be able to determine areas where

¹⁶ Commission for Integrated Transport/Mott MacDonald (2008). *The role of taxis in rural public transport: Phase 2 Case Study Report – Rural Wheels*.

they should extend services and, conversely, identify services in low demand for reducing spending. Since January 2010, Caerphilly County Borough Council has used SmartConnect and Experian data on the area's general population to monitor usage patterns, carry out demographic profiling and market segmentation. Experian uses over 400 data variables to build its Mosaic classification system, including data from the 2001 census and its own consumer segmentation database, which is made up of the UK's 46 million adult residents. One result of this monitoring exercise has been the introduction of Zumba dance classes in leisure centres; the leisure division found demand for the classes and responded by training several Zumba instructors and producing leaflets and banners to market the classes.

Authorities may also use transactional data to assess whether services provided through the scheme are meeting the needs and preferences of different groups. Some have looked at which of its services are popular among particular age groups and ethnicities, and how preferences differ according to area of residency within the authority. The scheme managers have stressed access to management data as a particularly attractive and important feature of a smartcard scheme. By providing a demographic breakdown of usage data, an authority managing a generalist smartcard scheme can evaluate whether it has reached all parts of the community, achieving social inclusivity in its service provision and delivery.

5.2.2 Limitations of management data

Although some authorities studied in the evidence review emphasised access to management data as a particularly attractive and important feature of a scheme, most currently only use data to monitor overall take-up. One reason for this may be the authorities' reluctance to appear to be monitoring or surveying citizens excessively. In the case of the NEC, assurance to the Scottish Government that the scheme would not carry out user profiling of any kind was an important part of securing support for the initiative. To avoid profiling, the scheme's central office in Dundee cannot access transactional data for a particular service, so LAs cannot assess usage of each service.

Some LAs have simply prioritised creating and maintaining a functioning scheme over conducting systematic evaluation. Initially Bracknell Forest Council set out objectives for the smartcard, such as the objective for 75 per cent of the student and adult population within the Bracknell community to use the card 'eventually'. However, it has not been possible to carry out systematic evaluation against these objectives because development and evolution of the scheme has been ongoing since its beginnings; at the time of writing, at no point has there been a version of the smartcard sufficiently 'constant' to have warranted confidence in evaluating against objectives. Additionally, the original objectives have been superseded somewhat as the scheme has evolved.

In some cases, LAs have reported that monitoring card usage in detail is particularly time-consuming and cumbersome. Monitoring also involves using smartcard software, and some may still be uneasy with using this software.

There are other complications that may make monitoring and evaluating LA smartcard schemes difficult. There is typically little or no service usage data to pre-date the scheme, which often makes 'before and after' evaluation of the scheme's impact impossible. Even assessing overall card take-up may prove problematic if the scheme is open to everyone, not just LA residents, or when cardholders move away from the area or die, and the authority is not always informed. Data on the number of cards issued does not necessarily equate to cards in circulation or in use. An additional complication for LAs that partner with external providers to deliver certain services, such as an e-purse, is that transactional data may be missed. sQuid transactional data is not held by Bolton Council, for example; only sQuid can access that data.

Authorities may make limited use of management data simply because they do not see a compelling reason to do so. They may not have set specific targets for take-up and service usage, or

they could feel that there are ways of replicating smart data capture. The Derbyshire Gold Card is not smart, but the county council is still able to record concessionary bus travel. Bus drivers issue zero value tickets – with accuracy checked by a team of bus surveyors – and the bus companies report those totals to the LA.

5.2.3 Other means of scheme evaluation

An alternative to using management data for evaluation purposes has been for LAs to carry out qualitative evaluation. For example, Bolton Council conducted focus groups during the pilot for its now-defunct ‘positive activities scheme’, which entitled young people in social care to £35 per month to spend on activities that would benefit them physically and mentally.

As the Derbyshire Gold Card is not a smartcard, the LA has not had transactional data on which to base its monitoring and evaluation of the scheme. Instead, it has run postal surveys via the Derbyshire Gold magazine to get user feedback. Although they have come from a self-selected sample, ratings for the magazine and discount directory have been high, and qualitative feedback has been very positive. Derbyshire County Council has based some of its improvements to the scheme on user comments, such as the suggestion that users should be able to submit Gold Card competition entries via local libraries.

Cumbria County Council has conducted qualitative research as well as quantitative evaluation of the Rural Wheels service: it commissioned an external review in 2003, which revealed that most users were older people, and demonstrated their positive view of the service.¹⁷

5.3 Summary of key findings

- LAs have tried to ensure smartcard scheme accessibility by providing multiple locations at which citizens can register. One barrier to entry may be the fact that to date, none of the schemes in this review offered complete online registration. Applicants generally have to undergo an identity check in person at an LA location.
- Encouraging take-up was often ‘passive’, insofar as authorities made their schemes more appealing by adding services to them, but did not explicitly advertise the schemes or particular services on an ongoing basis.
- Sometimes promotional activity could be more resource-intensive; examples of this were personal outreach work and campaigns to promote a particular card service.
- Driving smartcard take-up among elderly people could be more challenging, due to the difficulty of raising awareness among this group, who may be less engaged with the community, and ensuring the necessary accessibility.
- Few smartcard teams looked at management data other than in terms of overall take-up figures and sometimes active card usage data, despite the possible benefits for the authority of utilising the data. These include the ability to monitor LA spending more accurately, identify areas in which to make savings and improve service provision.
- Some authorities had made a conscious decision not to ‘profile’ citizens using transactional data, as they were concerned about appearing to be surveying citizens excessively.
- The usefulness of management data was limited by the fact that smartcard schemes constantly evolve; schemes may not have been ‘constant’ for long enough to make monitoring and evaluation a worthwhile undertaking.

¹⁷ ‘External service evaluation survey.’ (2003) referred to in Commission for Integrated Transport. Mott MacDonald (2008). *The role of taxis in rural public transport: Phase 2 Case Study Report – Rural Wheels*.

6 Benefits to card users

This chapter examines the benefits that smartcards can bring to the people who use them. It begins in Section 6.1 by considering ways in which smartcards simplify cardholders' access to services, including both 'basic' card applications such as access to leisure and library services, and more personalised uses for specific user groups. Sections 6.2 and 6.3 describe how schemes can facilitate increased personal choice, control and independence for users, and offer individually-targeted services. Following this, the chapter explores how card users may also stand to benefit financially through discounts and rewards, and physiologically through health-related benefits. Lastly, Section 6.6 assesses benefits specific to the older population.

6.1 Simplified access to services

A smartcard's function is essentially that of an alias, giving access to the cardholder's user record on the scheme database. In turn, this user record permits access to specified services and applications: it is configured to allow specific transactions, such as opening a gate, when the card is read. This means that the use of a single card grants the user access to everything within the smartcard offering, whatever it comprises.

The multi-functional nature of the card is central in creating a 'joined-up' experience for the user. As described in Section 4.1, it opens up the possibility of using the card at several different points on the same day, to do different things. The card itself is small, light and easy to carry around inside the user's wallet as they do this: it is a convenient means to access all services.

With the exception of some more sensitive applications, such as those offered only to disadvantaged groups and disabled people, the user needs to register and validate their identity in order to complete the application process and access all the available services. However, it is only necessary to register once in order to access all the services available via the card. In Bracknell Forest, for example, people can apply for their card in person at any of the borough's libraries. Once someone has become a cardholder, they are immediately able to use the e+ card to access the local authority (LA) leisure facilities, without having to repeat any part of the registration or 'activate' the card afresh. The same would apply if the LA decided to offer a new smart service – for example, discounted parking for borough residents – through the card a cardholder could begin to use this application without any physical change to the card, activation or re-registration being required. In Scotland, access to leisure centres and libraries is vastly simplified by the National Entitlement Card (NEC), as cardholders can access these across the country with one card. This means that someone living close to an LA's border can visit a library in the neighbouring authority, and a person on a work or leisure trip in another authority still has access to leisure facilities.

Bracknell Forest also uses the e+ card for access to its My Choice service, which helps people choose and bid for the housing association accommodation they would like to live in. Activation of this choice-based lettings application would be arranged by staff within housing services, for people who live in LA-owned accommodation.

All of the live schemes explored in the evidence review enabled card applications at several locations across the authority: they recognised that obliging applicants to go to one central location may be less convenient, and preclude them from doing so. Several of the schemes offer to take the applicant's photograph for them, so that the requirement to provide one need not be an obstacle. Derbyshire County Council, for example, advertised dedicated 'photography sessions' when its Gold Card was launched, having paid for digital cameras, photo printers and PCs for each of the district and borough councils that processed applications. This service continues to be part of the scheme.

Every card investigated in the evidence review is either offered free of charge to the user, or for a nominal fee that is then added to the card's e-purse balance: Cumbria's Rural Wheels card costs £5, for example. Like offering to take the user's photograph, the fact that the card is free or available at a minimal price is a way to remove as many barriers as possible from the application process.

6.2 Facilitation of increased personal choice, control and independence

As discussed in Chapter 2, an initial motivation for developing smartcard technology in the consumer sector was for the purpose of smart ticketing. One of the benefits of smart ticketing is to enable seamless travel across different services: multiple modes of transport, or transport operated by different providers. In the context of the United Kingdom, in practice, 'seamless travel' is enabled principally by the English National Concessionary Travel Scheme (ENCTS), which is rarely delivered using smart technology. In the majority of cases, the user simply shows their card to the driver as they board, who checks that the photograph on the card matches the card user. Authorities are also able to deliver other travel services through smartcard schemes, giving cardholders the opportunity to travel in an independent way using their smartcard.

- Although not a smartcard, Derbyshire County Council has used the Gold Card to give older and disabled people access to discounted train travel and dial-a-bus services.
- Cumbria County Council's Rural Wheels service is a personalised taxi scheme paid for using a smartcard e-purse.
- The NEC currently offers some users living on an island cheaper or free ferry travel. For example, residents of the Shetland Isles aged 60 or above are entitled to free ferry journeys, and Young Scot cardholders are entitled to a certain number of free ferry journeys.

Smartcards can also work to increase social inclusivity. For example, they can function as accessible, affordable ways for people to prove their identity, and to make cashless payments.

- Cards with a Proof of Age Standards Scheme (PASS) proof of age module function as valid ID that is effectively free of charge. For some people, this will mean there is no need to apply and pay for a passport, or separate citizen card;
- Additionally, e-purse facilities can be topped up offline, by using cash to buy e-purse card credit. This is a way for people without bank accounts, who are often disadvantaged, to access a payment card and enjoy the benefits of cashless payments.

These benefits are delivered with sensitivity, as there is no need for the card user to make apparent that they do not have a passport or a bank account.

Similarly, smartcard back-office systems can allow inter-departmental allocation of tailored LA services in a sensitive way. For example, the social services and leisure functions in an authority may arrange for disabled people to access leisure facilities using a smartcard.

- In Bracknell Forest, the card reader at the entrance gate in leisure centres recognises a card as belonging to a disabled user and grants immediate free access. This allows disabled people to use facilities without having to explain their disability to centre staff.
- In Caerphilly, people who live in social care, and people leaving care, are given free access to leisure facilities and library rentals and activities via the card.

Again, this is done in a non-stigmatised way: it is not apparent at any point in the process why the user is being given free access to services. A single-service example of non-stigmatised access is that of free school meals. Children who receive these can do so via a smartcard, without their 'free school meal' status being evident to staff or other students.

- In Bolton, the borough's schools' educational management system identifies schoolchildren who are entitled to free school meals. The LA then sends printed information to those children's parents, encouraging them to enrol for a B'Smart card, in order to receive this entitlement.

Many schemes produce media such as magazines and websites, which are peripheral to the card itself but part of the scheme's collateral. These may help to build the card scheme's presence in the community and engender a sense of 'belonging' to the cardholder community for the scheme user. The Derbyshire Gold Card, for example, has online content, a twice-yearly magazine, a discount directory and a range of branded promotional items that are produced in conjunction with ad hoc initiatives; these features help to give the Gold Card brand a 'club feel'.

6.3 Ability to offer individually-targeted services

The technical capabilities of a fully smart system and its infrastructure make it possible for LAs to give cardholders the services they are entitled to using a 'menu' approach. Typically, a raft of core LA services is added by default, with card 'add-ons' granting access to other, user-specific services as relevant to the individual. For instance, a scheme might automatically give all applicants a card that can be used to access two or three core services such as leisure and libraries, but only those who meet a specific criterion or belong to a certain group will be offered additional applications. Among the schemes studied in the evidence review, for example, Caerphilly and Bolton, still offer free swimming to residents aged 60 or older. As Section 6.1 described, only people who live in authority-supplied accommodation have the My Choice module included on the e+ card.

The application process itself can be an opportunity to increase awareness of other services available. An applicant who registers at a library can also be told about other applications that the card allows them to access, and other uses for the card. Anyone who applies for an e+ card, for example, is asked whether they would like to register on the NHS Organ Donor Register; this is subsequently indicated by including a donor logo on the card when it is produced.

Printed information about relevant issues can also be delivered to cardholders when their card is issued and via peripheral media, such as magazines. The more specific the card's target group, the more likely that this information will be pertinent to the cardholder. Such information is accessed on the reader's own terms, using a channel that does not force information upon them.

A smartcard can be used to prove an LA employee's identity and credentials to the user, whether this is a visual check by the user, or, in the case of organisations like schools, done using a reader. Examples among schemes included in this evidence review include Bolton, where social workers can quickly verify their identity and security status using the card, and Caerphilly, where sports coaches can do the same. Increasing security is of particular relevance when council employees work directly with vulnerable groups, such as schoolchildren and older people, to provide them with individual services such as those provided by a social worker.

In the wider context, the management team may use the management information that a scheme can generate, to tailor the smartcard offering so that it better 'fits' the user base and their service preferences. Bracknell Forest Council uses card transactional data with the aim of increasing activity, engagement and learning opportunities for all service users, delivering services through the e+ card. For example, an older person may attend a library-based local history activity, and start to access the internet for free as a consequence. The e+ card will be used to monitor the use of such activities, and to optimise what is offered by seeking feedback.

6.4 Financial benefits to card users

As noted in Section 6.1, all of the LA smartcards covered in this review are issued to the user effectively free of charge, with some removing the requirement for applicants to provide their own photograph. Whilst this is not a direct benefit of the card, it indicates that many authorities try to minimise any financial barrier to take-up.

There are indications, detailed in Section 3.4.1, that using a smartcard to access concessionary travel is a key driver for applying for smartcards that combine this application with others. The NEC's 'Young Scot' card offers reduced fares for young people on public transport, such as one third off the price of adult bus fares and one third off most rail fares when used in conjunction with the Scottish Youth Rail Card.

Several schemes covered in the evidence review give the user a cash discount when shown to a local retailer, saving money for the user and encouraging them to put their card to greater use. These discounts are typically accessed on a show and go basis with the retailer checking the card by sight, although Bolton Smart cardholders can get discounts on items that they pay for using the sQuid e-purse on their card. Retail discounts are a significant part of the Derbyshire Gold Card proposition, with participating businesses including local tradesmen, places to eat and personal services like hairdressers. These discounts are beneficial for cardholders, who can use the card to save money on goods and services. They can also have a positive impact on the LA's relationship with local businesses, as the intention is for participation in a discount scheme to increase their use. Featuring in a discount directory can work to market these local businesses. Conversely, marketing materials at the point of sale, such as Derbyshire's 'Use it here!' signs at tills, promote the card both in an immediate sense, and help to grow the card's presence more generally.

Cashless catering in schools presents numerous financial benefits. In addition to the non-stigmatised access to free school meals already mentioned, accessing meals via a card means that parents can ensure their children spend money on food at school, and not on anything else. Not carrying cash to or around school may also reduce the risk of theft, intimidation or bullying.

6.5 Leisure and health-related benefits to card users

Smartcards can be used to give cardholders access to discounted or free leisure activities, increasing their financial accessibility and encouraging users to participate. They may also be used to facilitate a change in lifestyle, for example, to help people to give up smoking, or to take up a programme of regular exercise.

Cards in most schemes provide access to LA leisure facilities, and can be used to get certain discounts if the user qualifies; for example, if the user is an older person and the authority offers discounts to this age group. Bolton and Caerphilly continue to offer free swimming to people aged 60 and above who are card users. Holders of Bracknell Forest's e+ card who are residents of the borough can access some leisure facilities at a discounted rate, for example, and can also use the card to pre-book facilities. Additionally, some smartcard schemes offer reduced prices on local commercial leisure services as part of their programme of discounts. Although on a show and go rather than a smart basis, the Derbyshire Gold Card is one example of this: it can be used to obtain discounts on leisure activities like exercise classes, cycle hire, and amenities for walkers in the Peak District.

Beyond this, some LAs have offered channelled funding via the card to encourage participation in particular activities in an attempt to effect positive behavioural change. One example is Bolton Council, who ran an initiative to encourage young people living in care to take part in activities that would benefit them physically and mentally. The LA added £35 in e-purse credit to users' cards each month, with spend controlled so that credit could only be used at a participating 'positive activities' venue. Activities available through the initiative included swimming, indoor skiing, bowling and cinema tickets.

Some smartcard schemes have also offered independently-designed initiatives to change lifestyles for the better. For example, a smartcard can be used to incentivise smoking cessation as with the NEC's 'Quit4U' and 'Give it up for Baby' initiatives, whereby smokers who have given up are rewarded with £12.50 in e-purse credit that can be used at Asda supermarkets, who partnered with the NEC for the initiative. As with the Bolton example above, the card controls what the user is allowed to buy, not allowing the user to spend the credit on cigarettes or alcohol.

Additionally, some LAs, including Bracknell Forest and Caerphilly, operate a GP referral exercise scheme, where patients who would benefit from increased regular physical activity can take part in a subsidised, personalised exercise programme at LA leisure facilities over several weeks. In Caerphilly, a patient who is referred by their GP takes a 16-week course of exercise for a reduced rate of £32. Their card user record is activated to allow access with a swipe of the card. During the course, the user's progress is monitored via the smartcard by a health referral expert (HRE), who ensures the patient is participating. After this time the patient can access facilities at a concessionary rate for a further three months.

In Caerphilly and Bracknell, GP referral has linked together applications that pertain to different services: health and leisure. This exemplifies the potential of cross-functional working through a smartcard scheme. It is possible to promote healthy living and to increase participation in leisure facilities, ultimately benefiting both LA departments involved. In addition, GP referral again exemplifies the potential usefulness of smartcard usage data: HREs can check that scheme users have been taking part in leisure activities.

6.6 Benefits specific to older people

Depending on the individual scheme offering, age-specific benefits for older people among the smartcard schemes were likely to be some combination of concessionary bus travel, retail and leisure discounts. However, with the exception of the Derbyshire Gold Card, including benefits specifically for older people was relatively unusual among the LA schemes studied.

Authorities had taken steps to ensure that older people could apply for cards. All of the smartcards included in the evidence review could be applied for in several different locations within the authority, with examples including central and local council offices, libraries and leisure centres. In the case of Derbyshire, council employees visited older people at home, at day centres and in remote communities at the launch of the scheme, promoting the scheme and filling in application forms. This made the application process as simple as possible for users who may not have otherwise heard about the scheme. It was not necessary to have an internet connection, or to be computer-literate, to apply for any of the cards. As mentioned in Section 5.1.1, Southampton City Council has introduced a fully online registration process for bus passes, using Experian's 'light footprint' check to authenticate each person's identity rather than requiring applicants to visit LA offices in person. The enrolment process includes an option for friends, family or carers to assist older people with their application. There are, therefore, various ways in which authorities can make the application process easier for older people who do not have transport of their own, who have mobility problems, or who are not comfortable with technology, to apply for a card.

Financial benefits of card ownership, where they exist, are emphasised by some LAs. In the case of Derbyshire's scheme, the entire card proposition and branding were designed with older people in mind, and the LA had intentionally sought to include retail discounts alongside ENCTS travel, because it was aware that many older people had a limited income. Qualitative feedback collected by the county council indicated that the cash discounts accessed through the Gold Card were indeed advantageous to cardholders.

Other than ENCTS travel, age-defined benefits of the cards studied in the review tended to be leisure-related. Caerphilly and Bolton continue to offer free swimming for people aged 60 or above; it is also possible to access concessionary swimming in parts of Scotland using the NEC, although this varies according to the individual LA. In addition to free swimming, Bolton operates a leisure initiative called 'FreeBie', offering free leisure activities such as aerobics, gym, bowls, badminton and t'ai chi, for any Bolton Smart cardholder aged over 65. Additionally, special rates for DVD rentals and computer courses are available to older people who show the Caerphilly Smart Card.

In parallel to supporting an active lifestyle, smartcards can grant increased independence to older people. Older people who do not drive can access concessionary bus travel using smartcards that include ENCTS use – which the majority do. Schemes such as Cumbria's Rural Wheels service give users an additional means of affordable transport and a way to access amenities. The Rural Wheels scheme, although not targeted at older people specifically, attracts a relatively high proportion of older users. Again, qualitative feedback from the pilot phase of the scheme implementation revealed that users valued the independence that the service granted them.

Travel services like those discussed here, as well as Meals on Wheels distribution via the card, can delay or avoid the need for an older person to depend on care, or move to sheltered accommodation. It may mean an older person is able to continue living at home, and to receive the right level of support from the LA in an environment where they are comfortable and happy, rather than moving somewhere new. Maintaining independence through services such as these may also ultimately save money for the LA.

6.7 Summary of key findings

- Cardholders may enjoy improved access to LA services. For most users, it is only necessary to register once to access all the services available via the card.
- Smartcards can encourage greater social inclusivity: in some cases, they replace the need for passport ownership by serving as a recognised form of personal identification. They can also be used to make cashless payments, so cardholders do not need to have a bank account.
- Smartcards are adept at enabling non-stigmatised access to services for special groups. For example, a schoolchild can receive free school meals via the card, the same way other children receive their meals.
- Users may receive LA services in an individually-targeted way through the smartcard scheme. Core LA services are typically added by default, with card 'add-ons' granting access to other, user-specific services.
- Often cardholders can take advantage of financial benefits such as retail discounts available to all, or service discounts for special groups.
- Smartcard schemes may facilitate lifestyle change by increasing the financial accessibility of local leisure facilities, including financial rewards for quitting smoking or offering e-purse credit to young people to spend on 'positive' activities.
- With the exception of the Derbyshire Gold Card, authorities tended not to include benefits specifically for older people. Financial benefits of card ownership, where they exist, are emphasised by some LAs.

7 Benefits to local authorities

Chapter 7 outlines the benefits local authorities (LAs) hoped to realise through implementing a smartcard scheme. These benefits were intended to outweigh, or at least offset, the high cost of setup and the relatively high running costs. One key benefit underlined was the potential to make efficiencies and other financial savings; we examine this in Section 7.1. Section 7.2 explores benefits associated with the management data created by smartcard usage: it may help LAs to achieve improvements to service provision and delivery. As explained in Section 7.3, authorities often sought to enhance their presence both locally and nationally by implementing a scheme. Finally, this chapter considers how smartcards created more immediate, day-to-day benefits to the LA and its staff, where used as a staff card.

7.1 Financial benefits to the local authority

Most authorities were not able to discuss the costs of the scheme in detail, partly due to there being a wide range of internal and external costs associated with implementation that are difficult to itemise and 'total'. When attempting to calculate the approximate cost of a scheme, a particular difficulty has been isolating this cost from general LA spending. Without detailed information on running costs, it is impossible to make a judgement on whether financial benefits outweigh costs; we can outline these potential savings and costs, but not quantify them or assign to them relative magnitudes.

At the outset, the smart system can be relatively expensive to put in place because of numerous front-loaded one-off costs, such as external consultancy on the scheme design, hardware such as card readers, software and training. When LAs wished to implement a fully smart system, the cost of integrating systems – particularly the middleware that connects the different applications – was particularly high. However, it is important to note that authorities can run a smartcard system without it being fully smart, in which case costs may be lower.

Running costs are also likely to be greater than for a non-smart card. Back-office software usually requires an annual license, which may cost thousands of pounds. Software and systems must be maintained in order to deliver the true benefits a smartcard is capable of generating.

However, authorities can make considerable savings from delivering a number of services through one card, as this may produce economies of scale. Once the card and its infrastructure have been rolled out, further services can, in theory, be introduced with lower set-up costs than a separate scheme would incur. This is a guiding principle for Merseyside Improvement and Efficiency Partnership (MIEP) as it develops a smartcard; the scope of its planned scheme has been expanded from a taxicard to a multi-functional card operating across six different LA areas. The smartcard team deemed the taxicard option not suitable for Greater Merseyside because of its limited functionality and potentially high cost¹⁸, whereas the multi-functional smartcard solution could produce economies of scale. Additionally, multi-functional smartcard schemes may make efficiencies for authorities by avoiding duplication of effort; they do not have to issue multiple cards or produce copies of residents' details. When a number of authorities are working together to run a single smartcard scheme, as all 32 authorities in Scotland currently do to run the National Entitlement Card (NEC), they can pool their purchasing power to drive down prices in procurement.

¹⁸ MIEP met with Transport for London and taxi company ComCab to discuss the London TaxiCard, which offers subsidised door-to-door travel in licensed London taxis. The London scheme was deemed not suitable for Greater Merseyside, due to its limited functionality and potentially high costs.

The authorities included in the evidence review hoped for lower administration costs, due to the automation of back-office manual or paper-based procedures used to provide services: fewer man hours are typically needed in the long term to administer a smartcard scheme, than a group of non-smart ones. They could also stand to benefit financially by providing more opportunities for customer self-service, which would reduce staffing requirements. In a fully smart scheme, service staff do not have to spend as much time registering users: the user needs only to enrol at one point of entry and not at each individual service. Moreover, additional services can be added to a user's smartcard quickly and simply: typically by ticking a box at the application stage. As new applications are added to the scheme at large, the user can begin to access them without any further registration or physical change to the card being necessary.

Some LAs have sought to reduce external as well as internal spend through the smartcard scheme. Services such as travel can extend people's capacity for independent living; with the potential to reduce authorities' spend on sheltered or supported accommodation.

A number of schemes have included services that aimed to promote healthy living, such as incentives for a healthy diet, increased use of leisure facilities, and smoking cessation; these may deliver healthcare-related savings in the future.

7.2 Benefits of management data

Smartcard usage generates accurate management data on use of services and LA spending, which authorities may find useful for increasing accuracy and transparency in certain areas. A key reason for developing the NoWcard, used in Cumbria, Lancashire, Blackburn-with-Darwen and Blackpool, was to generate more accurate records of the number of concessionary bus journeys made and consequently paid for by the LA. Authorities can also use reliable transactional data to identify areas where savings can be made, as well as areas that could especially benefit from more resources. As outlined in Section 5.2.1, MIEP intends to use management data on LA-supplied transport to identify areas where it can reduce spend. Similarly, one of the intentions of Liverpool City Council when it was developing the now-defunct Citizen's Cash Card was to use data to monitor and control emergency cash payments and staff expense claims. In theory, it is even possible for an LA to utilise usage data to find areas where savings can be made on staff: for example, it can reassess the need for two employees to man one service point if transactional data suggests that the particular service point does not experience much traffic.

Although this benefit has not been realised by all schemes, accurate data can allow for the evaluation of initiatives to improve the user experience and encourage service use. For Caerphilly County Borough Council, management data has facilitated the tailoring of services to meet user need. Data can be used to 'profile' residents in order to provide services that are more closely tailored to their needs and preferences.

Schemes can help authorities to meet their specific targets for online service delivery, more effective use of management data, cashless payments and other issues such as social and rural exclusion. They may also serve to monitor progress against a more general target for more effective service delivery, or to track cardholder use of specific initiatives. Caerphilly analyses card usage data to ensure that participants in its F3 and GP referral schemes are accessing leisure facilities regularly, for instance.

If authorities choose to break down usage figures by age, ethnicity or area of residency, management data may help to show if there is equality of opportunity in particular service areas. Caerphilly County Borough Council and Bracknell Forest Council have both assessed usage in this way, looking at which groups are most or least likely to have a card, or which individual services are popular among different groups.

7.3 Benefits to the local authority's reputation

Smartcard schemes can enhance the presence of the LA, the services it provides, initiatives it has launched, and its involvement in high-profile, often national, projects. Through schemes, LAs can aim to build a reputation for being pioneering and forward-thinking, or at least for being progressive and up-to-date with technology; others may be keen to demonstrate a commitment to social inclusion by facilitating access to services for hard-to-reach groups. LAs may be able to bolster their credentials in particular service areas: for example, offering a GP referral exercise service can improve an authority's health credentials. Additionally, by offering retail discounts through schemes, LAs can show that they care about making citizens' money go further, and about boosting the local economy. These efforts sometimes achieve recognition through winning awards and various accolades.

Authorities can build relationships with local businesses, forged through the provision of retail discounts, or with community forums through scheme outreach work. If a scheme encompasses more than one LA, it can encourage relationship-building between authorities. For example, the NoWcard has helped to strengthen ties between Lancashire County Council, Blackburn-with-Darwen Borough Council, Blackpool Council and Cumbria County Council. This has been beneficial in terms of being able to learn from one another's experiences: Lancashire had already begun to handle travel on behalf of the district councils when the NoWcard was designed.

On a more local level, joined-up thinking and working may occur between service departments. The GP referral exercise card application, offered by Bracknell Forest's e+ card and the Caerphilly Smart Card, has linked health and leisure services. A smartcard scheme can even serve to strengthen the link between the LA and its residents. The card itself may contribute to this achievement, as the LA branding usually appears on the card. In Scotland, each of the 32 LAs has its own iteration of the NEC, showing the issuing authority logo.

7.4 Benefits from being used as a staff card

Adding card applications specifically for council staff can generate a shared understanding of what the card is, how it works and the benefits it can deliver, among the LA as a whole. Bolton Council, for example, implemented a sub-branded version of its smartcard for council employees. Examples of the card's applications are to access cashless catering in the staff canteen, and to verify driver permits for people who drive council vehicles in the course of their work.

The added security provided by the smartcard can facilitate day-to-day work. Criminal Records Bureau (CRB)-checked staff can demonstrate this easily with the card, enabling them to go about their work with fewer issues. The version of the Bolton Smart card intended for council staff includes the cardholder's job title and the data of their CRB check, for instance. The coach/volunteer ID application of the Caerphilly Smart Card enables a school to hire a sports coach or volunteer, and quickly identify them using the card when they turn up for the sports class or event, making the sign-in process easier for the school and for the substitute staff. Other security benefits include restricted access to IT suites: LAs in Scotland have used the NEC to control access to computer rooms in schools. A partnership between Dundee City Council and the University of Abertay brought about the launch of the NEC/Higher Education-Further Education card in 2008, which enabled secure access to university properties via the smartcard.¹⁹

¹⁹ Improvement Service. (2009). *Customer First National Entitlement Card Scheme* [online]: <http://www.improvementservice.org.uk/library/download-document/2252-customer-first-national-entitlement-card-scheme/>

There are other, efficiency-related benefits of using the smartcard as a council staff card, such as ease of updating systems. Much like a 'regular' user, if a member of council staff's personal circumstances change, the system only has to be updated once for all services. The card can also speed up cash-based processes: where the staff smartcard includes cashless catering, canteen staff spend less time handling cash transactions, and less cash has to be kept on the premises.

7.5 Summary of key findings

- The initial outlay for a smartcard scheme and its running costs may be relatively high, but authorities can make considerable savings through their schemes. Delivering a number of services through one card may produce economies of scale, and multi-functional smartcard schemes can make efficiencies by avoiding duplication of effort.
- Smartcard usage generates accurate management data on use of services and LA spending, which authorities may find useful for increasing accuracy and transparency in certain areas. A key reason for developing the NoWcard was to generate more accurate records of the number of concessionary bus journeys made and consequently paid for by the LA.
- Accurate data can facilitate the tailoring of services to meet user need. Caerphilly County Borough Council has used its management data in conjunction with data purchased from Experian to provide services that are more closely tailored to residents' needs and preferences.
- Smartcard schemes can enhance the presence of the LA locally and nationally. Through their smartcard schemes, authorities can win recognition for their efforts and build relationships with local businesses, community forums or even with neighbouring LAs.
- Adding card applications specifically for council staff can create an authority-wide understanding of the workings of the card and its potential benefits. Council staff can use the smartcard to prove they have undergone a CRB check, or simply to prove their identity.

8 Scheme sustainability and the future

Chapter 8 considers the internal and external factors that may influence smartcard schemes' sustainability in the long term. We explore two such factors in Section 8.1: the individuals in charge of the scheme, and the support that they succeed in generating in the wider authority. As we discuss in the Section 8.2, another crucial element of sustainability is securing funding for the scheme, an especially pertinent issue in the current economic climate. The chapter goes on to consider ways in which technological advancement may affect future developments.

8.1 The role of individuals

Individuals working to implement and manage the smartcard also play an important role in the continued existence of schemes, as well as in securing funding at the national level and in maintaining the card's profile within its immediate environment, and among the wider smartcard community. The continuation of a smartcard scheme often depends on one or two key individuals – or smartcard 'champions' – who perform an ambassadorial role, sharing knowledge and enthusiasm for smart technology among stakeholders within the local authority (LA). A smartcard scheme with a champion who did not do this effectively may be less likely to survive than one headed by an individual who was able to 'sell' the benefits of smartcards, generating support and goodwill for the scheme within the LA.

It is also important that the expertise of the original management team be passed onto a wider group within the authority. Not doing so may create initial, short-term problems in managing the scheme when these individuals move on to other jobs or into retirement. In the longer term, failure to pass on knowledge may have more negative consequences, resulting in the scheme losing momentum, support and funding. Underpinning this is the importance of understanding scheme management as strategic and ongoing, rather than as something that is completed once the initial service offering is in place.

For many schemes, support and buy-in of stakeholders within the authority is the cornerstone to progress. Changes in administration can result in changed priorities as new leaderships come into office. A new leadership may choose to reduce or remove support for initiatives such as smartcard schemes. Budgetary support for the card from the authority's cabinet may not be secure in the long term.

The scheme is likely to need buy-in from several parties within the LA, to broaden its base of support and reduce the potential impact of a change in leadership or structure. A scheme with only one supporter may encounter significant difficulties if there is a change of personnel at any level within the LA. For example, Liverpool City Council planned to launch a Citizen's Cash Card in 2005. The card would initially be used to deliver emergency cash payments, council employees' petty cash claims and benefits payments to card users. The city council subsequently shelved these plans after a change in leadership.

There is little to suggest that setting or meeting targets for the scheme features in the issue of a scheme's sustainability. As already noted in Section 5.2, it was not typical for LAs to set quantitative targets for card take-up. Even where they are set, numerical objectives for smartcard schemes, such as number of cards in circulation, may be relatively arbitrary, particularly as objectives are liable to change as the scheme develops.

8.2 Scheme funding

At the time of writing, central government support for LAs in England is to be cut over the next four years, with some authorities facing up to a 8.9 per cent reduction in funding in 2011-12 or 2012-13.²⁰ Similar cuts are expected in Wales, Scotland and Northern Ireland. Some LAs have already made reductions to the services they offer to residents that are covered by smartcard schemes. For example, some are reducing or reconsidering the hours in which concessionary rates for bus travel apply that are over and above the national entitlement. While smartcard schemes have the potential to save authorities money through efficiency savings, the initial outlay that building the scheme architecture requires may make them seem an unattractive prospect in the current circumstances. Setting up a new scheme that is 'future-proofed', by paving the way for applications beyond those included in the initial offering, is likely to raise initial costs. Advantageous though it may be, this sort of long-term planning may be harder to conceive of or commit to, when the economic climate demands that the authority minimise outgoings and focus on pressing needs.

At present, therefore, it is especially important for the smartcard team to make a sound business case for the card, and to justify the funding that they are requesting. This need for justification may affect the nature of the scheme itself and what it is intended to do. A scheme that is focused on making efficiencies, for example, by measuring the use of concessionary bus travel and enabling accurate invoicing between the LA and transport operators, may be seen to demonstrate better value, and consequently be more likely to receive funding, than a scheme that is geared towards delivering new services. Similarly, it may be easier for the management team to secure funding for a scheme that has a relatively sharply defined service remit – in other words, a specialist scheme. These schemes focus on a small number of services and therefore often operate on a more restricted scale than generalist schemes. Consequently, they typically require a lower level of initial outlay. The less complicated structure of specialist schemes may also reduce the likelihood of cost overruns once under development. These factors could make them more attractive to the LA. Generalist schemes, in contrast, are typically more expensive to set up than specialist schemes, because they are much broader in terms of initial and eventual applications. This said, the infrastructure that generalist schemes require is the element that enables a potentially high number of different applications both initially and in the future. The resulting multi-functionality is essentially what affords economies of scale, which in itself provides a compelling business case. It is possible for individual service departments to fund and manage a scheme themselves, but this may not be feasible in the long term without buy-in from elsewhere. The Caerphilly Smart Card was created initially with funding support from the authority's cabinet, and is now managed by leisure services, with funding provided jointly by the leisure and libraries departments. The Caerphilly project team is able to deliver the smartcard scheme without continued funding from the cabinet. If the leisure or libraries budgets are cut back, however, the scheme may face difficulties in continuing to maintain its current service offering.

It should also be noted that securing funding from a central source may be a bureaucratic, unreliable process. Funding for the Merseyside Improvement and Efficiency Partnership's planned Community Card is from the North West Improvement and Development Partnership, which in turn relies on money from central government. In addition to possible problems arising from general funding cutbacks, the need for this money to filter through different layers and forms of governance adds uncertainty to the process.

²⁰ Rt Hon Eric Pickles MP (2010). Local Government Finance 2011-2013 [online]: <http://www.communities.gov.uk/statements/newsroom/finance201113> [Accessed March 2011].

8.3 Developments in technology

As discussed in Chapter 2, smart technology has seen significant developments since its invention in the 1970s, and while there are numerous benefits to delivering LA services via objects such as smartcards, the future is likely to bring continued change.

One likely influence on the way that smartcard technology might develop is near field communication (NFC). This is a wireless connectivity technology, where the item being 'read' does not need to be a card: NFC can use a variety of simple forms, including key fobs, stickers, cards and mobile phones. The item that is being read needs to be held within a few centimetres of the reader.

Currently, NFC technology is intended mainly for use in mobile phones, allowing a process of smartcard emulation, with the NFC device behaving in the same way as a contactless smartcard.²¹ As Section 6.1 outlined, the role of a smartcard is that of an alias: access to a user record could certainly be provided through a mobile phone.

The United Kingdom's (UK's) first commercial NFC service is scheduled to go live in the second quarter of 2011. Consumers who buy NFC-enabled mobile phone handsets from Orange stores will be able to link their handset to a Barclaycard or Orange credit card. They will then be able to use their mobile phone at retail outlets that accept contactless payments, to pay for items that cost £15 or under. The payment itself is made by tapping the handset against a contactless reader.²²

There is also scope for NFC in mobile phones to be used in ticketing applications. The Department for Transport has commissioned research into NFC's potential uses in public transport ticketing²³, identifying this as a technology with potential both as:

- an Integrated Transport Smartcard Organisation ticket carrying device; and
- an ITSO ticket reading device, enabling it to be used both for retail sales and ticket validation.

Local authorities overseas have already begun to use NFC in the course of service delivery, and an example where it has been used to deliver services to the older population is that of Oulu, Finland. Oulu has named itself 'the SmartTouch city', and its vision is to have the most advanced public services in the world by 2015.²⁴

In 2006, the city's Elderly Care Service piloted NFC enhancements to the Meals on Wheels service they operate for older people. Instead of making a phone call to place their order, participants in the pilot were given NFC-enabled mobile phones, which they had to touch against the relevant tags on the daily menu. The meal service then received this instruction electronically and prepared it to order. The city's logistics service delivered the meals, and also used NFC technology to 'report in' at the start of the round, again once they had delivered each meal, and finally at the end of the round. This ensured that no person included on the round was 'missed out'. The meal service and the

²¹ More details about NFC can be found at: <http://www.howstuffworks.com/framed.htm?parent=cellular-electronic-payment.htm&url=http://www.nfc-forum.org/aboutnfc/>

²² Clark, S. (2011). *Orange and Barclaycard set date for UK's first commercial NFC service* [online]: <http://www.nearfieldcommunicationsworld.com/2011/01/27/35762/orange-and-barclaycard-set-date-for-uks-first-commercial-nfc-service/>

²³ Elliot, J., and Whitcomb, A. (2010). *The use of Near Field Communication (NFC) technology in mobile phones for public transport ticketing*. Department for Transport [online]: <http://www.dft.gov.uk/pgr/scienceresearch/orresearch/nfc/pdf/nfcprojectreport.pdf>

²⁴ ITEA SmartTouch (2008). *SmartTouch City of Oulu: services through NFC technology* [online]: http://www.ouka.fi/sus/english/Documents/ITEA_SmartTouch_City_of_Oulu_NEWSLETTER.pdf

logistics service both had real-time information about the progress of the delivery round. This pilot shows that NFC can be used successfully to deliver public services to older people, helping them to manage their daily activities successfully.

Returning to the idea that the user record is ultimately what grants user access to services via an alias, we should note that this alias need not be an object. Human fingerprints can perform a similar role: one school in the borough of Bracknell progressed to this kind of biometric system for the delivery of cashless catering, following a successful smartcard pilot. It may be that in the future, organisations implementing smartcard systems, including LAs, decide to pursue the use of a biometric alias rather than a physical object such as a smartcard. This would be advantageous insofar as it eliminates the cost of purchasing physical objects such as cards.

8.4 Summary of key findings

- The continuation of a smartcard scheme often depends on one or two smartcard ‘champions’. A smartcard scheme is more likely to survive if these individuals are able to ‘sell’ the benefits of smartcards. It is also important that the expertise of the original management team be passed onto a wider group within the authority.
- The scheme is likely to need buy-in from several parties within the LA to broaden its support base. A scheme with only one supporter may encounter significant difficulties if there is a change of personnel at any level within the LA.
- At the time of writing, central government support for LAs in the UK is to be reduced. Some LAs have already made cuts to the services they offer to residents that are covered by smartcard schemes. Given the difficult economic climate, other authorities may be reluctant to develop their own schemes.
- It is important for the smartcard team to make a sound business case for the card, and to justify the funding that they are requesting. It may be the case that a scheme that is focused on making efficiencies may be more likely to receive funding than a scheme that is geared towards delivering new services.
- One likely influence on the way that smartcard technology might develop is NFC. This is a wireless connectivity technology, where the item being ‘read’ does not need to be a card.
- In the future, organisations implementing smartcard systems, including LAs, may decide to pursue the use of a biometric alias rather than a physical object such as a smartcard.

9 Conclusions

This chapter summarises the key ways in which a smartcard offering may be structured (Section 9.1), how it can develop over time (Section 9.2), and the different factors that can have an influence on this development. It underlines the importance of perceiving the scheme as something fluid rather than static, and as a process rather than a product. The portfolio of services that a smartcard user can access using a card is likely to shift over time, and this should be borne in mind from the outset. This fluidity may itself create problems in evaluating the scheme against certain goals. In any case, evaluation of smartcard schemes has often been limited to measurement of take-up at overall levels, which we explain in Section 9.5.

Section 9.3 identifies key benefits of smart service delivery, including improved services and the ease with which they can be accessed and joined together into a combined offering. To date there are few services designed specifically for the older population, but there is scope to increase these beyond the core card service of transport, which seems to function as a key driver to card ownership. Among the schemes covered in the evidence review, there was a stronger focus on facilitating card take-up by optimising accessibility during the application process than on active encouragement, a finding outlined in Section 9.4.

The final two sections in this chapter cover approaches to scheme management and scheme development respectively. They highlight key learning points on maintaining a scheme, such as the importance of an individual smartcard ‘champion’ as a driving force but equally the importance of this individual ‘selling’ the case for smartcards to others, and creating a shared vision among all parties involved in delivering the scheme.

9.1 Generalist and specialist schemes

Smartcard schemes tended to fall into one of two broad categories: generalist schemes for all residents of the local authority (LA) and can sometimes also include commuters, visitors; and specialist schemes conceived for certain user groups and targeted to their needs.

Generalist schemes usually offered multiple different applications, and consequently were more naturally inclusive. Having numerous different uses meant they had something of interest to more people, than a card with just one specific use. Their potential for contact with many different touch points both within and outside of the LA potentially makes them more likely to achieve truly joined-up thinking and working. They may also be more successful in achieving economies of scale, as the scheme infrastructure, once in place, is able to host many different applications for the card. These schemes may, however, be harder to roll out, tending to involve a larger number of partners and stakeholders, and be more expensive up front than a specialist scheme.

Specialist schemes with just one application have an automatic focus on the service that is being offered, and a sole use for the card may mean that its implementation is more ‘achievable’. This sort of smartcard scheme may be developed to address a specific user need, and as a consequence it is likely to make a greater difference to its users’ day-to-day lives once up and running. This said, a single-application smartcard scheme may not exploit – or be intended to exploit – one of smartcard technology’s core benefits, namely a joined-up service offering.

9.2 The evolutionary nature of smartcard schemes

A service offering to be delivered via smartcards should be regarded from the outset as something that will develop over time to meet changing user needs. Indications from the schemes studied as part of the evidence review are that careful decisions are needed when a smartcard scheme is first proposed: it must be designed with an understanding that the proposition is unlikely to stay static as time passes, because some degree of future-proofing will be necessary. For example, Bolton Council found that the chip it used initially in its Bolton Smart card did not contain adequate memory to host all the applications it wanted to include, and consequently had to switch to another card model. As Section 2.6 described, Bracknell Forest Council collects data during the card application process that it intends to use in the future for a parking application.

Schemes may begin as having a specific service offering – such as the Derbyshire Gold Card, which is principally a travel and discount card, and the Caerphilly Smart Card, which started out as a leisure and libraries card – and evolve gradually into multi-application ones. This may mean that the project team is not tasked with launching a very large scheme from the outset, and may also encourage joined-up expansion into other LA services. However, specialist schemes such as these often ‘belong’ to specific service department. They may face difficulties in growing outside of that department to take in additional applications for the card. One can imagine, for example, if the scheme manager has wider responsibilities he or she may be unable to devote time to growing the scheme across other services as well as maintaining its original function.

Once the framework is in place, with a platform procured and implemented, a card in circulation and services being delivered, it tends to become easier to add new services as there is no need to start ‘from scratch’. The add-on process may also be facilitated by growing momentum and support post-launch. By this point in time, the card will have a user base, meaning there is an existing potential audience for the new service. In order to be used by existing or potential cardholders, the new service must be communicated and be something that is useful to them.

The fact that cards are smart does not mean that all applications have to be. Many of the cards included in the evidence review had show and go applications, in many cases including the English National Concessionary Travel Scheme (ENCTS) and a Proof of Age Standards Scheme (PASS) proof of age hologram. The Caerphilly and Derbyshire cards feature a barcode, which is used for library borrowing. For multi-function smartcards to have adaptability in the longer term, however, they must be at least smart-enabled, because future needs and preferences may demand smart applications.

9.3 Key benefits created by smartcard schemes, and benefits for older people

Smartcard schemes can create various benefits to the LAs that implement them. An important potential benefit is the possibility of creating efficiencies and other financial savings, for example by collecting concessionary travel transaction data, as the NoWcard does. Other card data may also help LAs to improve and refine their services, as in Caerphilly County Borough Council’s example of training additional Zumba instructors to meet rising demand for this activity at leisure centres. Internal services for the LA’s own staff, such as building access and catering, could also begin to be delivered and refined through a ‘staff’ version of the smartcard. More generally, authorities often sought to enhance their presence by implementing a smartcard scheme: adopting smart technology was typically regarded as indicating that the LA was progressive and modern.

Benefits to users are linked to improved services, as well as improved access to services. This increased accessibility, a wider range of services, and the joining together of these services are the key user benefits of a multi-application smartcard scheme.

Certain practical ‘accessibility’ factors may be of benefit to smartcard users in obtaining and using their card, such as the fact that they only have to carry one card and they can register for it at multiple locations. Financial benefits for cardholders include retail discounts and cheaper use of leisure facilities for some groups, be this disabled people, specific age groups, or people who the LA identifies as being particularly vulnerable.

Schemes themselves can increase awareness of available LA services, and increase social inclusivity by facilitating access to services for different groups. A multi-service offering encourages use of the available services and reaping their benefits, and it may lead cardholders to use services they would not otherwise use. Smartcards can also be used to deliver targeted services to individuals, providing services that are relevant to them specifically and increasing their awareness of what is available from their LA.

There is little data on whether user benefits are being realised. Additionally, no authority included in this evidence review has yet carried out a robust quantitative evaluation specifically about cardholder reactions or satisfaction, although the detailed evaluation work carried out on Cumbria County Council’s Rural Wheels scheme indicates a very positive response from service users.

Smartcard schemes include services specific (or attractive) to the older population, but there is scope to increase their role, for example by generating awareness of personalised payment services.

Although only one scheme covered in the evidence review is targeted at older people specifically, all schemes examined currently offer one or more applications that are solely for this group: concessionary bus travel, free swimming, Meals on Wheels and subsidised access to leisure facilities are all examples. Schemes typically offer at least one of these, but rarely offer all of them.

Additionally, particular elements of some schemes are likely to be attractive to older people. Retail discounts are particularly helpful to groups on a lower income, for example. Qualitative feedback such as that collected during the scoping phase of Cumbria’s Rural Wheels pilot has also suggested that older people prefer not to carry money, suggesting that e-purse services will be appealing to them.

In theory, schemes that provide a joined-up offering will be most beneficial to older people. Accessing a combination of services during the course of a day, such as travel, retail discounts and cheaper leisure activities, could improve an older person’s day-to-day life in a meaningful way, and give them the opportunity to live independently for longer.

In addition, resident-specific services could be particularly valuable to older people. An example is personalised payment services, which could increase older people’s awareness of the age-related benefits they are entitled to, and improve access to these.

9.4 Facilitating and encouraging smartcard take-up

Many authorities participating in the evidence review focused more on facilitating card take-up than on actively encouraging it. Facilitation of take-up was typically through maximising the scheme’s accessibility. A typical way to do this is to make it possible to apply at numerous locations.

Making the smartcard the service card for core services such as library borrowing and concessionary bus travel also ensures a certain level of take-up. Other applications could also act as ‘hooks’. Retail discounts, for instance, can incentivise take-up, as well as cultivating relationships between an LA and local businesses.

There are indications, such as that provided by the comparison between schemes with and without ENCTS travel in Section 3.4.1, that including concessionary travel in the scheme service proposition will act as an important driver for card applications. This said, LAs can take other steps to encourage take-up of the smartcard, and these are discussed below. Meanwhile, the application process in place must offer sufficient accessibility to the prospective user, with nothing inhibiting take-up.

Smartcards can be advertised via commercial channels: for example, the Young Scot had a presence at a major music festival, T in the Park. Taking the smartcard beyond the LA's usual sphere of activity and into everyday consumer environments such as festivals, supermarkets and town centres – all of which the National Entitlement Card (NEC) has used as locations for smartcard promotion – enables more people to find out about it, and therefore broadens the base of potential users.

Face-to-face outreach has proven effective for Derbyshire County Council, where members of the core smartcard team addressed community forums for older people, and spent time making home visits to older people in more remote areas of the county to tell them about the Gold Card and help them fill in application forms. This is, admittedly, a somewhat resource-intensive way to promote a scheme, and may be unfeasible for some LAs, particularly those without a closely-defined audience. Dedicating more resources to marketing, including face-to-face outreach work, may have little effect on take-up if card services on offer are not relevant to non-cardholders.

For many older people, concessionary travel is the first step in the joined-up service offering of a smartcard scheme. The concessionary bus pass is in many ways 'assumed knowledge' in the United Kingdom, as many people apply for a concessionary bus pass as soon as they reach the qualifying age. It follows that where travel is included, people are likely to seek the smartcard out independently of any encouragement from the LA. Without travel, the offering may be less attractive or even less necessary, depending on what is included alongside it.

In the future, it may be other card services that draw older people into smartcard schemes. There are currently service areas that remain unexplored by even the most progressive authorities, such as personalised payments and other resident-specific applications that could change our ideas of what constitute 'core' service areas.

9.5 Use of smartcard user data and transaction data

Monitoring and evaluating the scheme and its take-up, and the importance of these activities, depend on several factors. Chief among these is what the scheme was intended to do at its inception.

Generally speaking, monitoring and evaluation of smartcard schemes is limited to overall card take-up. There appears to be a trade-off between capacity to monitor the scheme and service usage, and perception of the authority as a data controller. Both of these elements have significant implications for budget, policy and scheme management. Most LAs do not profile cardholder data, or monitor the use of individual card services. Some find the task of monitoring difficult because it is time-consuming, or because they are unsure how to use reporting software. Other authorities – including all of Scotland with the NEC – have made a conscious decision not to monitor card usage, to avoid raising issues of confidentiality and data protection.

In some cases, management data is relatively unimportant because it does not help the LA to evaluate whether scheme objectives are being achieved. Yet this data is fundamental when LAs want to monitor their spending, or ensure services are accessible to vulnerable groups. A key reason for developing the NoWcard, for example, was to create transparency and efficiencies, through recording accurate usage data.

Caerphilly has demonstrated how information captured through a scheme can be used to inform service provision and marketing efforts. Relatively few LAs seem to realise these benefits in practice, however. In any case, there are limits to what usage data can show. Without accurate records of service use prior to a scheme's introduction, a true, robust evaluation of its impact is problematic. As noted in Section 8.4, objectives and schemes themselves evolve over time, and there may be little value in evaluating their performance against targets set at the launch of the scheme.

9.6 Approaches to scheme management

As Section 2.5 discussed, the way a scheme is managed, and the location of the smartcard management team within the LA structure, may have an important influence on the way that a scheme develops. Ownership is, in a sense, an academic point though, as every authority has different circumstances, needs and objectives to address, and will do so in its own way.

The way that this team interacts with the rest of the LA, and its success in generating support, is of key importance. To have as certain a future as possible, the card requires support from multiple points within the authority. For the scheme to take root, council staff at all levels must support the card, and understand why it has been developed. The smartcard team must educate the wider LA about the scheme and its benefits in order to create a shared vision, belief in the positive change that the card will bring, and a partnership of support from the authority as a whole. This is arguably of more importance than whether the smartcard team is a standalone unit, or situated within an existing department.

To a large extent, joined-up working relies on all members of the partnership supporting the objectives of the scheme and coordinating their efforts to meet them. A lack of a shared vision or understanding can hinder partnerships between authorities and external providers, or partnerships within authorities themselves. A vision shared successfully can create good understanding between the different elements of an LA, and add significantly to the scheme's chances of success and of effecting positive change for cardholders.

9.7 Approaches to scheme development

The need to sustain a smartcard scheme beyond its rollout should not be underestimated. Although there is reasonable scope to future-proof a smartcard scheme from a technological point of view, various political and human factors can shape its progress, development and ultimate success.

Individual drive often lies at the heart of a scheme and a dedicated manager may be responsible for both its inception and continued development. The smartcard 'champion' needs to share his or her vision and knowledge sufficiently and effectively, in order for other council staff to effectively manage the scheme if he or she leaves. Throughout, scheme management must be practiced as an ongoing activity, and as something more than the responsibility of a dedicated scheme or project manager. Smartcard managers have to 'sell' the case for smartcards, which may entail emphasising the financial benefits over other aspects, and will mean convincing the LA that rolling out services and applications via a smartcard will create greater long-term value and benefits than rolling out a series of elements piecemeal.

The future of a scheme may be affected by changes within the authority, as the example of the Liverpool Citizen's Card illustrates: a loss of support following a change in leadership resulted in the withdrawal of funding. A scheme with support from several different quarters within the LA is more likely to continue to operate. Funding for the smartcard may also be jeopardised by more general LA budget cuts: services can be rolled back or abandoned altogether. Additionally, it can be very

difficult to evaluate the cost-benefit ratio of a smartcard scheme because the up-front costs are wide-ranging and sometimes hard to itemise.

There is scope for schemes to do more to benefit older people. As noted above in Section 9.3, beyond concessionary bus travel, there are generally relatively few LA-provided services that are specifically for the older population. For that reason, smartcard schemes are not used to delivering and promoting them. It is even possible that cases exist where there are (currently) insufficient LA services for older people to justify the costs of implementing a smartcard scheme for them.

It must also be noted that alternative options to cards do exist. Near field communication, for example, is a technology that allows devices such as mobile phones to exchange data in the same way that a smartcard does, and as a concept is increasing in profile and popularity.

Appendix A

Local authority scheme selection criteria

The research team established criteria for creating a shortlist of local authority (LA) smartcard initiatives as potential case studies. The shortlist was achieved by developing and implementing a qualitative scoring mechanism by which to assess the identified LA smartcard initiatives.

Our selection criteria comprised:

- The smartcard technology: whether a ‘show and go’ card or a smartcard was in use, and whether it was Integrated Transport Smartcard Organisation-accredited.
- Card services: the range of services offered through the card scheme, which could be transport only, limited to a small number of applications, or more extensive.
- Targeting the older population: whether older people were included as intended card users, or the card’s specific audience.
- Use among hard-to-reach groups: whether the LA had a strategy for outreach and had achieved any success by following the strategy.
- Publicly-available information: the amount and robustness of information from LA and third-party sources.

The research team also considered other factors, in order to ensure a mix of different types of LA in the study. These were:

- Geography: whether the area was urban or rural.
- Demographics: population and its make-up, including ethnic minority population and relative size of the older population.
- Deprivation index: the relative affluence of the authority, using the appropriate Indices of Deprivation.

Appendix B

List of topics discussed with local authorities

Background details

- Population
- Population of older people (60-75, 75+)
- Hard-to-reach population (size, characteristics)

The scheme

- When it started
- Why it was implemented
- How it has developed
- What ideas were tried (if any were dropped, why did they not work?)

Services

- What services the cards cover/do not cover and why
- Why these services?
- Has take-up of the services involved changed since card has been in operation? If yes, how?
- E-purse enablement: How was the process of setting this up? How many traders are participating? What are the transaction values?

Technology

- Type of card in operation (technology, Integrated Transport Smartcard Organisation, smart-enabled)
- Why was this technology chosen?
- Is there a customer support system in place? (If so, what benefits does it offer to users?)

Access and take-up

- Who has access to the scheme?
- Who are the main users?
- Citizen experience and satisfaction.
How they feel about the use of cards; anecdotal or research feedback
- What other services might people like on their cards?

Target audience/strategies

- Was the card conceived with a particular target audience? Which one(s)?
- Have there been initiatives to increase card usage and/or access?

At whom have these been targeted?

How were they targeted at these particular groups?

- What ideas were tried, and if any were dropped, why did they not work?
- How has the local authority (LA) tried to reach the most isolated or at-risk sections of the population?

Take-up

- Overall take-up
- Take-up among older population
- Take-up among hard-to-reach groups (including ethnic minorities)

Older population and smartcards

- Does the LA have a strategy for older people, and if so, does this include the smartcard scheme? If not, why not?
- Is the card scheme aimed particularly at older people? If so, how and why?
- Has the LA tried to target older people? If so, what has happened in these cases, and how successful has it been?
- Is there any evidence of specific use by older people, particularly if the scheme is aimed at all citizens – what is the take-up/use by older people proportionately compared to other citizens?

Impacts of the scheme

- What data is available?
- Is there any historical data on activity?
- What services started out on the smartcard, have any been added and are there any that can be identified as particularly responsible for any success/increase in take-up that the scheme has achieved?
- Are there any plans to extend the coverage of the scheme to other information and services – and if so, what is the thinking/rationale behind this?
- Can data from multiple points be collected in one place? How is the data collected?

Activity

- What kinds/types of activity has the smartcard scheme had an impact on, such as, free swimming, extending internet usage etc.?
- What levels of activity has the smartcard scheme had an impact on? This might include increased usage of local facilities/entitlements and opportunities

- Have the levels of activity exceeded expectations, and what impact has this had on demand?
- If the levels have not reached expectations, why not? What lessons have been learned?

Cost and benefits

- Cost of the initiative
- Cost per card
- Benefits that LAs have experienced following the implementation of their smartcard schemes, and why
- If benefits have not been realised, why is this? What lessons can we learn from their experiences?
- Perceived value for money

Good practice

What notable (good) practice have LAs implemented, or taken on board during the development of their scheme, and has this led to increased or unexpected benefits (or other outcomes)?

Any good-practice examples concerning older people:

- Healthy active living in later life
- Improvements to well-being
- Improved quality of life
- Improved access/take-up of local services
- Increased revenue into local communities
- A cultural shift to more active and involved older citizens
- Improved partnership working
- Improved social networking
- Improved community cohesion
- Reduction in social isolation

Future plans

- Plans for the scheme in general
- Plans for the scheme in terms of those hard to reach, including older population
- Any additional comments

Appendix C

Detailed information on participating local authorities' schemes

Appendix C outlines the seven local authority (LA) smartcard schemes covered in the evidence review.

C.1 Bolton Council

Bolton is an LA with long-term involvement in smartcards, having participated in the National Smart Card Project (NSCP) almost a decade ago, and having been the first to offer a multi-purse smartcard. Bolton now operates three sub-branded cards.

Bolton

Bolton is a metropolitan borough council in the North West of England, its area comprising a mixture of urban and rural regions. Bolton is in the most deprived 15 per cent of areas in England.²⁵

The origins and development of Bolton's smartcard scheme

In 2002 Bolton put itself forward for the NSCP pilot, funded by the Office of the Deputy Prime Minister. The authority was successful and took part in two work packages for its smartcard, called Bolton Smart. The work packages were designed to test specific aspects of the card scheme: in this case the functionality of the smartcard on buses running across a county border, and the software used to host the smartcard data.

The authority went on to pilot staff smartcards during 2005. Functionality matched the mainstream card, with an additional application for cashless catering in the staff canteen. The pilot was extended to the general public in 2006, enabling residents to access library, leisure and bus travel using one card. Over time smartcards were issued to replace existing leisure and library cards, in both Bolton and Blackburn.

The LA later proposed the B'Smart smartcard for 11–16-year-olds, a sub-brand for Bolton Smart. This card came into existence in 2008. The B'Smart card functioned in the same way as the mainstream Bolton Smart card, with the addition of an e-purse. This e-purse was used initially by young people in social care, who were given £35 each month as smartcard credit to use on leisure activities, with spend controlled so that credit could only be used in participating locations.

In 2009, the United Kingdom's first multi-purse smartcard with Integrated Transport Smartcard Organisation-enabled technology was launched in Bolton, for use on Arriva buses.

²⁵ Department for Communities and Local Government (2008), *The English Indices of Deprivation 2007*.

Bolton’s current smartcard schemes

Three smartcards are in existence for three sets of cardholders: adults (Bolton Smart), younger people (B’Smart), and council staff. The cards are for people who live and work in Bolton. Many of the immediate differences between these three permutations of the smartcard are aesthetic and concerned with branding, as well as with the three different cards’ capabilities. Having separate cards for separate groups means that the authority can target advertising appropriately, and that it can add additional modules to the different schemes, depending on which they are applicable to.

The core applications that the smartcard can be used for are leisure, library, cashless bus travel and retail discounts. The smartcard has a number of e-purses (sQuid) that can be used for payments in local shops, using a card reader. sQuid credit can be loaded online, or at a retailer participating in the sQuid payment scheme.

None of the Bolton cards show that the user is entitled to pay a concessionary fare. This is done separately through the English National Concessionary Travel Scheme (ENCTS) card, used on a show and go basis. The smartcard allows users to pay their fare – concessionary or otherwise – using an e-purse.

Evaluating the Bolton scheme

Bolton’s initial target was to have 40,000 cards in circulation by April 2008, but no other detailed targets were set. The authority achieved this target, with around 80,000 cards in circulation by December 2010.

For reasons of confidentiality, the LA prefers not to monitor residents’ individual transactions within each service. The card team has tried to merge and monitor individual card usage, but found this to be an onerous and impractical task: data records from each service need to be merged together and individually matched.

C.2 Bracknell Forest Borough Council

Bracknell Forest Borough Council was among the first LAs in Great Britain to introduce a citizen smartcard scheme. Its ‘pioneer’ status has meant there were few, if any, earlier examples to learn from. As such, the authority’s prevailing concern has been to achieve a user-friendly system that functions as the authority wants it to: simply and intuitively.

Bracknell Forest

Bracknell Forest is a unitary authority in South East England, comprising a mixture of urban and rural areas. The borough is one of England’s most affluent areas.²⁶

The origins and development of Bracknell Forest’s smartcard scheme

The scheme was inspired by the LA’s identity and profile, and its aspiration to offer something new and technologically ‘atypical’ for an LA. The card would promote awareness of the authority and its early adopter status, strengthen its social inclusion proposition, and facilitate process engineering through usage data and reports.

The authority launched the original smartcard in 2000, and piloted several modules, such as youth club membership, interface with school cashless catering, student registration, library access and an

²⁶ Department for Communities and Local Government (2008), *The English Indices of Deprivation 2007*.

e-purse. It added further uses for the card progressively over the following years, including a Proof of Age Standards Scheme (PASS) proof of age hologram for cardholders in all secondary schools.

Following a trademark challenge to the card's name in 2005, a new card, e+, was launched in 2006. The card now included a new e-purse product and bus concession to enable local free travel for qualifying cardholders.

In 2008, the LA added further card services, including organ donor registration, a service to help people choose and bid for housing association accommodation, and leisure services for people with special needs or receiving state benefits.

Bracknell Forest's current smartcard scheme

The LA made a decision early in the card's development not to restrict ownership to borough residents. The e+ card is intended for people who live or work in the borough, or visit regularly.

The card's current core service capabilities are for libraries, leisure services and travel. It also gives users access to retail discounts at around 180 local businesses.

Evaluating the Bracknell Forest scheme

Around 12 years since the first (non-smart) cards were introduced, Bracknell Forest's scheme has achieved a take-up ratio approaching one active²⁷ card per two residents – though a proportion of cards, estimated at around 25 per cent, belong to non-residents.

Development and change have been ongoing since the scheme's beginnings.

At no point has there been a version of the card sufficiently 'constant' to have warranted confidence in evaluating usage or perceptions against objectives that are now obsolete in some senses.

Evaluating the scheme formally has not been something the authority has been asked to do. Weighty – and sometimes unexpected – issues such as contract procurement have arisen and required priority. Similarly, there are physical impracticalities that can make scheme monitoring or evaluation problematic. In Bracknell Forest's case, the LA knows that many cardholders are not residents of the borough, compromising the validity of cardholder 'incidence' and making it difficult to conduct systematic research about the e+ card.

C.3 Caerphilly County Borough Council

The Caerphilly case demonstrates that a smartcard offering a range of services can be launched and run by an individual service department, as opposed to the higher echelons of an authority.

Caerphilly

Caerphilly County Borough Council is an LA in South Wales. The surrounding area is primarily countryside.

The level of deprivation within the county borough is higher than the national average. Caerphilly is home to a disproportionate number of the most deprived ten per cent of the Welsh population.²⁸

²⁷ In this case, 'active' refers to cards that have been used to access electronically-recorded services since 2008, when the current platform, SmartConnect, was launched.

²⁸ Welsh Index of Multiple Deprivation 2008 [online]: http://caerphilly.infobasecymru.net/user/resources/WIMD_CCBC_report.doc

The origins and development of Caerphilly’s smartcard scheme

The card, called the Caerphilly Smart Card, originated in the authority’s leisure services department. It was inspired by the authority’s desire to create a management information system for leisure services, and to update the libraries system. Caerphilly also recognised that smartcard technology offered a wide range of other LA services the possibility of improving responsiveness, cross-functional working, partnership building, and delivering economies of scale.

The first discussions about implementing a leisure and libraries smartcard took place in February 2005. These were followed by several scoping visits to other authorities that had already rolled out schemes. Discussing management and user experience of up-and-running schemes demonstrated how the SmartConnect platform could be utilised to co-ordinate different applications. Leisure services subsequently procured SmartConnect, and launched the Caerphilly Smart Card in September 2007. It was initially used to access leisure and library services.

Over time, the leisure services department has added numerous other applications. They have largely benefited the leisure and libraries services.

Caerphilly’s current smartcard scheme

The card is intended for all residents of Caerphilly County Borough Council.

The current card provides access to a range of services, meaning that it appeals to different groups. Current core service capabilities are for leisure and library services. It should be noted that the library service is not fully smart: libraries still use a barcode and reader for signing out books and other materials.

Applications added have largely benefited leisure services. Examples include:

- social services applications that give free access to leisure and library services for children in care and care leavers, as well as non-stigmatised access to facilities;
- the Elite Scheme, which offers free leisure access to elite athletes;
- a GP referral application, which allows GPs to refer a patient to a health referral expert (HRE), who issues a smartcard. The patient can attend a 16-week fitness course at their local leisure centre at a reduced rate, or pay as they go. The patient’s status is activated to allow appropriate access to activities, and they swipe their card to do this. The HRE monitors progress via the smartcard;
- buildings access and cashless catering for council staff;
- the 5x60 programme: a Welsh Assembly Government initiative to give school pupils a say in sports programming, and therefore provide sports activities outside of classroom hours that they will enjoy;
- Meals on Wheels payment via Direct Debit. Meals on Wheels staff forward relevant information to the smartcard team, who set up the client for Direct Debit collection. On a monthly basis, clients have their fee debited from their chosen account and this is flagged on their smartcard user record;
- the Fun, Food and Fitness (F3) Project, a lottery-funded scheme. Families with weight concerns are issued with smartcards. They pay £10 for the whole family to use leisure facilities for ten weeks, with further discounts available for up to a year. Each family member is required to take part in a leisure activity at least twice a week. The activities are accessed via the card. Usage is monitored via the smartcard team, who report back to the F3 team.

Evaluating the Caerphilly scheme

Around three years since the smartcard was introduced, active²⁹ usage of the scheme equated to approximately 42 per cent of Caerphilly's population.

In January 2010, the authority began to monitor usage patterns and membership using information from its own smartcard database and Experian data on Caerphilly residents. It has used this data to carry out profiling and evaluate whether services provided through the card scheme are meeting the needs and preferences of different groups. As with other LA smartcards, the scheme managers have stressed access to management data as a particularly attractive and important feature of a smartcard scheme.

The leisure services department has assessed which of its services are popular among particular age groups, and how preferences differ according to area of residency within the authority. Using primary data from SmartConnect and secondary data from Experian, the LA can target the marketing of services and tailor the services themselves to suit the preferences of the local population. This provides Caerphilly with the opportunity to improve its provision of services and how these services are promoted among residents.

C.4 Cumbria County Council

Cumbria presents an example of an authority that has implemented a smartcard scheme, the NoWcard, in collaboration with other LAs. Working in a partnership, Cumbria County Council sought to make cost savings, during both the scheme set-up and its running. Its Rural Wheels service, also a smartcard scheme, is another example of partnership working, and was set up by a working party that included a range of stakeholders.

Cumbria

Cumbria is a non-metropolitan county council. It is the upper level of a two-tier system, with five district and borough councils and one city council sitting below it.

Cumbria is a predominantly rural, mountainous county. It is England's most north-westerly, bordering Dumfries & Galloway in Scotland to the north. It is also a relatively deprived area, ranking among the most deprived 40 per cent of sub regions in England.³⁰

The origins and development of Cumbria's smartcard schemes

The authority's aim is to provide focused transport support. It has achieved this by developing a flexible offering, made up of different services that are designed to work together. Its two smartcards are part of this offering. They are the NoWcard, which is used to access ENCTS, and Rural Wheels, a rural shared vehicle service.

In developing the NoWcard, the county council sought to increase efficiency and transparency in the way concessionary travel was delivered. NoWcard was launched in 2006, the result of a collaboration between Cumbria and Lancashire County Councils, Blackpool Council and Blackburn-with-Darwen Borough Council. It was funded by the Department for Transport and the LAs themselves.

²⁹ 'Active' refers to cards that have been used to access electronically recorded services in the past 12 months.

³⁰ Local Futures (2009). *Sub Region Profile: A Deprivation Profile of Cumbria* [online]: <http://www.localfutures.com/Assets/2940/deprivation%20profile%20of%20cumbria.pdf>

The basic starting point for Rural Wheels was a belief that anyone in Cumbria’s 790 communities should have access to transport, without location – or isolation – being an obstacle. A shared vehicle scheme was selected as the most cost-effective way to do this, without providing unnecessary additional transport. First piloted in 2002, the service has now been operating across the whole of Cumbria since summer 2008.

Cumbria’s current smartcard schemes

As a large, mainly rural area, Cumbria faces specific transport challenges. A range of authority-supported services work together to meet travel needs.

The NoWcard is currently available to people who qualify for concessionary travel under ENCTS: older people (in line with State Pension age qualification), and eligible disabled people. Its initial functionality has been as a travelcard, although in the future it will be used to access other services.

Rural Wheels serves a very specific user community. Shared vehicles are a practical way for the authority to deliver an affordable transport service to the county’s most rural communities. Only people living in places that are not served by public transport are allowed to use this service. They must call a planning service 48 hours before travelling, and the trip must be made between 9am and 5pm. The driver reads the card using a hand-held reader at the end of each journey. Each mile travelled costs 30 ‘points’ – the driver tells the passenger how many points remain. The Rural Wheels card can be credited with points at specific local post offices, shops, libraries, and by the vehicle drivers themselves.

Evaluating the Cumbria schemes

There has been both qualitative and quantitative evaluation of the Rural Wheels service and the way it is used. The authority does not set specific service targets: instead it has the overall aim of increasing social inclusion in rural Cumbria.

Cumbria County Council commissioned an external review of Rural Wheels in 2003, which demonstrated that many users were older people, and their positive view of the service. Service data from analysis published 2008 shows that journeys were often to shops and social events, as well as health-related trips.

C.5 Derbyshire County Council

The Derbyshire Gold Card is the only card in the evidence review to define older people, along with disabled people, as its target audience. Having a defined demographic group has afforded the LA focus in developing the card. It has also influenced the dimensions of the scheme, from the core services offered, to the particular pieces of information shared through the card magazine.

A second point of interest is that the card is not smart, but rather smart-enabled; the authority has not found a compelling argument to ‘go smart’ under the circumstances in which it operates. There are geographical, logistical, functional and financial reasons behind its decision to keep the card non-smart.

Derbyshire

Derbyshire is a county council in the East Midlands. Eight district and borough councils sit beneath the county council, but within Derbyshire. Derby City Council is a unitary authority.

A high proportion of the county is rural, with some isolated areas. Three large cities – Manchester, Sheffield and Nottingham – are all just outside Derbyshire, but within easy reach: many people live within the county but work in one of these cities or visit them frequently. Affluence varies across the nine LA areas: there is a mixture of greater and lesser deprivation. Some areas are within the most deprived quartile of English LAs, others within the least deprived third.³¹

The origins and development of Derbyshire's smartcard scheme

The LA perceived that older and younger people shared two key characteristics: low disposable income and relatively high dependence on public transport. It realised that one card could be used to address these two things, and to increase engagement with local services.

In the early 2000s, promoting sustainable travel was a priority among the LA's objectives. It decided to give a travelcard to all young people in the county, which achieved successful take-up rates. A Best Value Review recommended a similar scheme for older people, and the result was the Derbyshire Gold Card. Launched in 2004, the card was conceived as a way of providing travel opportunities and discounted services to older and disabled people, promoting a healthier lifestyle and increasing engagement with the authority. The card initially offered access to discounts at around 900 retailers and local services: this figure has subsequently passed 1,300.

With the introduction of ENCTS travel in April 2008 the Derbyshire Gold Card acquired ENCTS branding. At the same time, library functionality was added: a barcode on the reverse of new cards enables reading by library scanners. Cards can be used to access borrowing and internet services in all libraries, including mobile libraries.

Derbyshire's current smartcard schemes

The Derbyshire Gold Card is specifically for older people as well as disabled people and as such, all of the services it includes are aimed at this audience. The card is for borough residents. Its main services are ENCTS travel, discounts at local businesses and library service access.

Several hardcopy publications are produced in connection with the Derbyshire Gold Card. They are distributed through all the district and borough council offices, libraries, and some local businesses. The content of all of them is targeted to older people.

The card is smart-enabled, with an internal chip, but it is not used as a smartcard. It does not need to be a smartcard to do what it is intended to.

Evaluating the Derbyshire scheme

Because the Derbyshire Gold Card is not smart, it is not possible to measure the proportion of active cards, and no formal targets were set for card take-up. The LA has run postal surveys via the Derbyshire Gold magazine to gauge satisfaction. Although they come from a self-selected sample, ratings for the magazine and discount directory are high, and qualitative feedback is very positive.

³¹ Department for Communities and Local Government (2008). *The English Indices of Deprivation 2007*.

C.6 Dundee City Council

Dundee City Council was the first LA in Scotland to introduce a smartcard scheme. The Dundee Discovery card scheme was deemed a success, and subsequently used as a model for the Scottish National Entitlement Card (NEC).

The original scheme format has been emulated nationwide in Scotland, although the formula and cards’ capabilities can vary from region to region, depending on the services that Scottish LAs wish to deliver using smart technology.

Dundee

Dundee City Council is a unitary authority in Scotland. Dundee is a densely-populated city. It is Scotland’s fifth most deprived area³², with one-third of Dundee’s population located in areas of deprivation.³³

The origins of Dundee’s smartcard scheme and the development of the NEC

The Dundee Discovery card was Scotland’s first smartcard, created in 2001 by Dundee City Council to offer a range of services through one card.

The card was used initially in schools for cashless catering, student registration, accessing school library services and access to certain rooms. The LA saw schools as a ‘captive audience’, and even though smartcards were optional to use, accessing the services was far easier with one than without. This also meant the authority could monitor usage of the services.

In 2002, Dundee City Council joined with ten other Scottish LAs to pilot smartcard schemes as part of the Scottish Executive’s Modernising Government programme. After the pilot, the Dundee model was scaled up, becoming the model for the NEC in 2006, when all 32 Scottish LAs collaborated.

Concessionary travel schemes were also introduced in April 2006. Older and disabled people could travel on buses for free using their NEC card, and younger people could use their smartcard (branded Young Scot) to access reduced fares on public transport.

The NEC today

Each card has the Saltire on the front, together with the logo of the issuing authority. The NEC office remains in Dundee, although it is a separate entity from Dundee City Council.

The NEC is available to all Scottish residents, to enable use of core services offered by all 32 LAs. Some LAs provide extra services through the NEC that are not available in all areas. Current core services are for libraries, leisure services and travel. Other services include:

- smoking cessation programme: financial incentive for not smoking, to spend on healthy supermarket products;
- at the time of writing, a sQuid e-purse is available on cards issued by four Scottish LAs, including Dundee;
- controlled access: for example to enter computer rooms in schools;
- audio travel information at bus stops in Dundee, for visually impaired users;
- a savings facility for younger people, Credit Union.

³² Scottish Government, *Scottish Index of Multiple Deprivation* [online]: <http://www.scotland.gov.uk/Topics/Statistics/Browse/Social-Welfare/TrendSIMD>

³³ Dundee City Council. *Dundee: a city vision* [online]: http://www.dundee.gov.uk/dundee-city/uploaded_publications/publication_76.pdf

Each application of the NEC is managed by that service provider (for example, libraries), rather than being managed centrally. This means that the NEC would still be useable with individual services even without central management.

Evaluating the NEC

Although take-up of the NEC can be monitored, usage cannot. The Scottish Government was assured that no 'profiling' of cardholders would be carried out, therefore transactional data is not gathered and cannot be accessed. The NEC office does not know how many cards are 'active' or which services are used at an overall level. An unpublished quantitative survey conducted between 2005 and 2006 found that take-up of the NEC in Dundee was 35 per cent.

C.7 Merseyside Improvement and Efficiency Partnership

Liverpool City Council planned to launch a cash card in 2005, but later abandoned the scheme. More recently the Merseyside Improvement and Efficiency Partnership (MIEP) proposed a taxicard, which has since evolved into plans for a multi-application smartcard for the city region.

MIEP and Merseyside

MIEP is one of five sub-regional partnerships of the North West Improvement and Efficiency Partnership. MIEP comprises Halton Borough Council, Knowsley Council, Sefton Council, St. Helens Council, Liverpool City Council and Wirral Borough Council, as well as Merseyside Fire & Rescue Service and regional passenger transport executive Merseytravel.

Liverpool city itself is the most deprived LA area in England. Other authorities in the city region are also relatively deprived. Knowsley is ranked fifth most deprived out of 354 authorities; Halton 27th.

The origins of MIEP's planned smartcard scheme

Liverpool City Council's planned Citizen's Cash Card was intended to deliver efficiency savings to the LA. A basic premise was that a social worker could carry a set of 'smart' cash cards for emergencies, which could be activated with a specified amount for clients by calling a contact centre. This method of activation would, it was argued, be more secure than simply handing out pre-paid cards. There were also plans to use the Citizen's Cash Card to pay council employees' petty cash claims, and to pay benefits. The LA hoped to use the management information generated by card usage to identify further areas where savings could be made. The scheme was shelved following a change in authority leadership.

Subsequently, MIEP agreed to fund a project to assess the cost of authority-supplied transport across the Liverpool city region, such as door-to-door taxis for people with certain special needs. Project staff suggested several ways to monitor and reduce the cost of transport to the LAs, including a taxicard solution. Here, licensed taxis would be fitted with card readers which would indicate the user's entitlement to subsidised travel and would then apply the subsidy directly.

The cost of implementing a taxicard scheme was high, so to make the card solution cost-effective, MIEP proposed a multi-functional smartcard scheme in its place. This would hopefully achieve economies of scale and much greater, wider-ranging benefits, including concessionary travel. This card, the Community Card, is currently in the early stages of development.

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This report provides the findings from an evidence review conducted by RS Consulting on behalf of the Department for Work and Pensions, examining smartcard schemes that local authorities have implemented. Its overall aim was to draw together good practice and learning points as they relate to scheme implementation. The review explores a range of issues, including the services included within smartcard schemes; citizen participation in schemes; use of data to improve services; dissemination of information to users and prospective users; communications activities; and how schemes have been evaluated.

A qualitative scoring mechanism was used to assess the potential of local authorities with smartcard schemes in place. Following this, seven case study local authorities were chosen and visited between September and December 2010. The study consisted of analysing existing, publicly-available information and related evidence, supplemented by discussions with the chosen local authorities.

The local authorities that participated were Bolton Council, Bracknell Forest Council, Caerphilly County Borough Council, Cumbria County Council, Derbyshire County Council, Dundee City Council/the National Entitlement Card and Merseyside Improvement and Efficiency Partnership.

If you would like to know more about DWP research, please contact:
Kate Callow, Commercial Support and Knowledge Management Team,
Upper Ground Floor, Steel City House, West Street, Sheffield, S1 2GQ.
<http://research.dwp.gov.uk/asd/asd5/rrs-index.asp>

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