

The background of the page is a grayscale photograph of a modern building's facade, featuring a series of curved, overlapping architectural elements that create a sense of depth and movement. The top half of the image is partially obscured by a red banner containing the title.

How e-business transforms public sector services in the UK

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This report examines how the delivery of public services has been transformed by e-business and explores some of the successes and challenges.



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Executive summary

This report examines how, over the last two decades, the delivery of public services has been transformed by e-business and explores some of the successes and challenges.

Although some public bodies have embraced e-business more than others, all are adopting it to some extent. Where e-business has been introduced it has led to efficiencies and increased accountability and transparency, and has improved the interaction between the service providers, service users and citizens. It has also shifted the power and control away from the service provider to the citizen.

RESEARCH METHODOLOGY

The main content of the research comes from a comprehensive literature review, case studies and an online survey of senior people working across 31 public bodies in the UK. Participants were asked to give their responses to a set of questions about their organisation's position regarding the use of e-business in their services. The research examined:

- the extent to which organisations have adopted e-business practices
- the scope for making further improvements, and
- the ways in which the providers of public services embrace or resist these changes.

KEY FINDINGS

E-business can transform public services by creating efficiencies, enhancing service provision, providing more information and engaging more people in relevant decisions in the local community and nationally.

This research identified that the issues for the providers of public services are often wide and complex, requiring cultural change and the adoption of new skills and roles. It also identified further scope for services to join together, to share information, create efficiencies and provide more value to the public.

E-business has great potential to reduce transaction costs even further, and to bring savings and efficiencies to services. The initial costs of doing this is the investment in IT infrastructure and the development of new skills, and the required shift in organisational cultures to allow such changes to take effect.

Although the providers of public services will recognise the benefits from e-business, service users with access to the technology will also realise significant benefits in terms of quality and cost. The transaction costs of dealing with public sector organisations will be lowered and the service user will have access to a wider range of information, presented in a flexible way, at a time, and by a means of their own choosing. These enabling factors will

allow service users to make more informed choices, exercise greater control over their interactions and be more engaged with and knowledgeable about the services provided to them.

Public sector organisations have undergone the same e-business changes as their private sector counterparts. A distinguishing factor is that, unlike companies, public bodies must ensure that the move to e-business does not mean that services become unavailable to any part of the population that may require them. Nor must it raise transaction costs for those unable to use e-services.

There are a number of service users who do not have access to a computer for various reasons, including lack of education, poverty or fierce opposition. As a result, public services have a responsibility to ensure that their approach to e-business does not increase inequality for some of the most vulnerable people in society.

As with the private sector, the use of websites, social media and electronic communications has changed the nature of interactions with public sector organisations. Service users are able to access a wider range of information, and are able to scrutinise organisations better and to engage with them in a more flexible way. As a result, organisations that use online resources have become more open and transparent.

A few participants were concerned that the value of the services they provide will be eroded by the full adoption of e-business. Service providers who are proud of the specialist, customised service that their organisation provides are understandably sceptical about moves to replace this in any way.

Participants commented that service users must be trained and assisted in the move to e-business. Also, organisations must promote the benefits of e-business to their service users, and offer help, training and support to facilitate the move. The Driving Standards Agency (DSA), Department of Work and Pensions (DWP) and HM Revenue & Customs (HMRC) all help service users with 'assisted digital practices' as they move towards 'Digital by Default' (when electronic means will become the default mode of access to public services).

E-business is assisting in data capture and storage. The electronic capture of correspondence and enquiries means that data can be more easily categorised and analysed. Several participants who work in emergency planning roles were benefiting from the analysis of data to record actions taken as a result of emergencies, so that lessons can be learnt, and services more readily mobilised when appropriate. Also, organisations that hold large amounts of data electronically are using it for strategic and operational planning. This

facilitates more cost-effective resource planning and operational efficiency.

E-business can have unexpected consequences. For example, offering more information and more avenues of communication to service users may increase the demand for public services and raise public expectations as to the speed with which issues will be resolved.

There is a range of ways in which electronic communications can be used to ease the flow of information between service providers and service users. This can save money and time, not just in the first instance but also subsequently, eg. by cutting the requirement to change GP or hospital appointments.

1. Introduction to e-business

1.1 INTRODUCTION AND OVERVIEW

This report examines both the private and public sector position for the adoption of e-business practices,¹ and how this can transform public service provision and the relationship between service user and service provider. The literature on e-business showed that studies generally tend to concentrate on the private sector and the benefits that e-business can bring to a commercial organisation, such as efficiencies, flexibility and wider choice, increased customer engagement and increased customer loyalty.

Even so, the literature also shows that the public sector can gain from adopting e-business practices. E-business can have a positive impact on the democratic process; the increased accountability of public service; the enhanced role of the public sector; and the improved relationship between the citizen and the state.

1.2 WHY ORGANISATIONS DECIDE TO ADOPT E-BUSINESS PRACTICES

Private sector organisations exploit the advantages of e-business practices for varied reasons, including the ability to offer flexible, cost-effective, attractive, innovative, often bespoke services to their customers in order to boost sales and take market share from competitor organisations. E-business can also increase the efficiency of operations, lowering cost and increasing profits.

1. E-business refers to the way that information technology is used by organisations to conduct their affairs, transact with stakeholders, communicate with and relate to customers and other organisations. Any business or organisation of significant size uses e-business to some extent; this project focuses on the recent and current move to exploit aspects of e-business that relate to the use of digital or internet technology.

E-business is used either to enhance and complement existing practices or as the sole means of interacting with customers.

E-business brings significant advantages to businesses, including:

- the ability to sell to a wider audience (Percival-Straunik 2001), at a convenient time and a location chosen by the customer, eg a customer who is unable to get to a store during the day may make purchases outside usual store-opening hours, using a smartphone, tablet, etc.
- the ability to sell a wider range of stock than can be carried in-store (Rowley 2002), eg the retailer Next sells children's school clothing online only, rather than committing store space to this low-margin area of sales
- customers can be invited to review products, act as advocates, gain access to further information to enhance their buying experience and increase their customer loyalty, by interacting electronically with their chosen retailer
- retailers can persuade customers to sign up for electronically delivered updates and sales inducements; electronic communications made following an initial sale may be used to persuade customers to make further purchases, eg when they receive an alert to announce the introduction of a new range
- businesses can use their websites to offer very specific and tailor-made goods, for delivery directly to the customer, eg clothing with their team name printed on it (Rowley 2002)
- e-business allows great savings to be made on standardised and routine transactions, letting the selling organisation concentrate on new ways of servicing the high-earning transaction with the personal or specialist touch.

In summary, the drivers for businesses to switch to digital/e-business are: to boost sales; to increase customer loyalty; to create efficiencies by driving down costs; to widen the target customer audience; and to raise brand awareness.

1.3 THE PRESSURE ON PUBLIC SERVICES TO MOVE TO E-BUSINESS PRACTICES

Public sector organisations are driven towards digital or e-business delivery for different reasons, including the following.

- Service providers need to engage with and inform a wide network of citizens, taxpayers and service users.
- Providers need to move service users away from face-to-face, telephone or postal interactions towards social networking, text alerts and website access, which may well answer the requirements of service users in a more efficient and effective manner, at a time and in a format which suit the service user better than standard office hours.
- Facilities for dealing with routine matters, such as bill payments and general enquiries can be handled more efficiently. Taking the point made above, that e-business allows sellers to concentrate on high-earning transactions, public services organisations can also cover the routine transactions online or

electronically, and divert human resources to just those transactions that require a bespoke service. For example, HMRC will need to give special attention to the tax returns of large companies or high-risk defaulters, whereas individual lower earners can use a standard process to submit their tax returns online.

- There is a need to engage citizens more in the democratic process, thus increasing community and political awareness and garnering public support for policies and for local and national initiatives.
- Online services can be used to gauge the popularity of policies, to work more closely with service users to develop services and to manage the flow of information to users.
- E-business methods facilitate and ease engagement with difficult-to-reach sectors of the population, such as those living in rural areas.

In summary therefore, the incentives for public sector organisations to engage in e-business are to create efficiencies, reduce public spending, increase and widen engagement and loyalty, and to inform and involve people in the democratic process.

1.4 THE LIMITS OF THE USE OF E-BUSINESS

In the private sector, there are limits to the adoption of electronic processes. Personal services such as hairdressing or house-decorating cannot be replaced by an electronic service although e-business practices can be used to enhance communications related to such services. Likewise in the public sector there will, in some cases, be a point where e-business is not enough and face-to-face or personal

services are required, for example, social care services for the elderly

The National Health Service (NHS)

The NHS initially used the organisation 'NHS Direct' to provide remote services to NHS patients. The public were able to visit the NHS Direct website to check their symptoms and ask for advice. There was also a telephone support service, to which visitors to the website were referred if their symptoms, as diagnosed by the answers to the symptom-checker on the website, suggested that this was required. Ultimately, patients were referred to a doctor, or to their local hospital or health care provider.

There are certain situations where patients require direct contact with health care professionals. Childbirth and acute serious illnesses, for example, need professional attention over a long period of time.

Users who do not have access to an online computer

Other limitations occur where, for one of several reasons (eg lack of education, poverty, and fierce opposition) service users simply refuse to interact electronically. Although 85% of homes have a computer (National Housing Federation 2013), this leaves 15% without, either because of financial circumstances or because some people simply do not desire to own a computer. Press reports (*Guardian* 2011b) have suggested that at October 2011 over 50% of the UK population owned a smartphone, with figures set to rise. Smartphones can be used to access the internet and to conduct e-business transactions. Public service providers are working to ensure that their websites and internet-based services can be accessed via smartphones. Unlike businesses, public service providers must always cater for those

without access to an online computer or smartphone, or who lack the appropriate skills or will to engage electronically, to ensure that their services are available to all.

1.5 TRANSACTION COST ECONOMICS (TCE) RATIONALE

Ronald Coase (Mankiw and Taylor 2006) explains transaction costs as being those costs incurred in addition to production costs. Transaction costs are 'the costs that parties incur in the process of agreeing to and following through on a bargain'.

Can e-business lower transaction costs? When e-business is a viable option, the answer must be affirmative, in that e-commerce enables buyers and sellers to find each other easily, at a low cost, across national and international boundaries, allows buyers to compare products and prices easily, and allows sellers to sell their products without having to set up shops or to visit trade fairs.

Can e-business break down transaction costs for public sector transactions? Again, the answer must be 'yes', where e-business is a viable option. E-commerce lowers the transaction cost for service users, by enabling them to interact with public services from their homes, without having to travel to and queue at government offices, often without having to use the postal service, and at a time and location to suit themselves. For service providers, e-commerce allows business transactions to be carried out without necessarily having to provide business premises. For example, in 2010 HM Revenue & Customs was able to close down 130 local offices (HMRC 2010) as more services moved to electronic platforms.

1.6 THE UK GOVERNMENT POSITION

There is good evidence of the adoption of e-business practices in the UK Civil Service. Specific examples, including HM Revenue & Customs and the Driving Standards Agency, are discussed later in this report. Government departments are also well represented in the survey that forms the main part of this research.

The term 'Digital by Default' was introduced into UK government by Cabinet Minister Francis Maude in May 2012 (Civil Service 2012a) and is frequently used throughout the civil service. The term means that the primary or default method for delivering public services is by electronic or digital means.

1.7 PRIVATE SECTOR E-BUSINESS ISSUES IN A PUBLIC SECTOR CONTEXT

Many of the issues encountered by private sector organisations incorporating e-business practices into their operations are experienced by public sector organisations in almost the same way, although there are some significant differences, as discussed below.

- Businesses use customer or service-user feedback to increase engagement and improve their offerings. Such feedback is easier to collect and analyse electronically than when transactions are carried out face-to-face, where feedback is either verbal or hand-written. Service users may find giving feedback electronically less confrontational than in a face-to-face situation, and will therefore be more willing to participate. E-business methodologies in the private and the public sector allow for a more efficient collection of feedback (possibly online). Electronically collected feedback can be easily collated and analysed.
- E-business allows an organisation to communicate with service users in different ways, for example by email, text message or through social media channels. The UK public sector is adopting such methods in many cases, but there are some instances where it is lagging behind the private sector. This point is also made in some of the responses to the survey in Chapter 2. The NHS is one such case, where there is very limited use of email, between NHS organisations and between NHS organisations and patients.
- Websites act as a shop front for businesses and are used to educate and inform customers or service users and to build up loyalty, as well as acting as a platform for carrying out transactions. The availability of customer choice is also an issue in parts of the public sector. Websites can be used to advertise credentials such as performance ratings for schools and NHS hospitals to attract more citizens or service users and improve confidence.
- Private sector organisations encourage customers to rate purchases and share information online and on social networking sites. The users of public sector services would not necessarily choose to do this: would a former offender want to use a social networking site to rate the prison service or probation service for example, or would a tax-payer want to share details of an investigation into their affairs? Customer loyalty cannot be built and used in quite the same way in the public sector as it is for corporate organisations but, nonetheless, public sector organisations such as local councils try to engage with service users electronically, offering email updates and social media interactions.
- In all cases, organisations must ensure that their websites are easy to use and to navigate. Significant website problems will attract adverse publicity and will push service users back to the higher-cost face-to-face or telephone interactions.
- E-business gives businesses the opportunity to 'hook in' customers with regular electronically delivered messages and updates. Public sector organisations offer similar services, eg appointment reminders, flood warnings. Public sector organisations do not have the same drive to protect market space and compete for business.
- E-business facilitates transparency of information, for example on prices and rates, and allows customers to make more informed choices. The use of websites to set out service-user information by public sector organisations also permits greater openness and accountability.
- Electronic communications allow the public to contact service providers at a time to suit themselves, eg a taxpayer may submit an online return at midnight, rather than being restricted to office hours, in the same way that a customer would make purchases from an online retailer at a time to suit them.

1.8 SPECIFIC PUBLIC SECTOR E-BUSINESS ISSUES

Inclusion, equality and democracy issues²

Public services must be made available to all sections of society (NAO 2013) – everyone who could possibly want to use them or who is compelled to use them, eg HMRC must make its services available to all, no matter how little IT-literacy they have. Facilities must be made publicly available, eg in libraries, or in council offices, so that people who do not have access at home to online computers can conduct e-business and so engage with public services in this way.

The OECD refers to digital inequality issues as ‘the digital divide’ and it exists in all countries where e-government is present in some way (OECD 2011).

Capability and skills issues

The use of e-business by governments (so-called ‘e-government’) and public sector organisations has brought with it a requirement for a new set of skills for those who provide the services (Cabinet Office 2011), such as digital communications, website design and social media expertise. In many ways, e-government could lead to more work for civil servants and public sector officials, if e-business and the related increase in transparency lead to a greater thirst for openness and more requests for information, eg through Freedom of Information requests, which are costly to deal with.

Whereas private sector organisations are likely to have technology experts in-house to develop e-business communications in line with changing

technology, the public sector is said to be lacking in these skills (Civil Service 2012b) and requires further development to provide a fully developed digital service.

There has been a shift of focus to ‘the citizen’. In 2009, the OECD debated governments’ requirements for adopting e-government as a tool for the effective and efficient provision of public services, with the focus shifting towards the requirements of the citizen (the service user), away from the government’s requirements (OECD 2009).

Public sector e-business limitations:

The issue of ‘smart email’ is a key point for revealing the public/private sector e-business divide. Whereas private sector organisations such as Amazon use ‘smart emails’ to pick out key words in customer emails and send standard responses, this practice is less likely to apply to public sector organisations where questions are very specific.

Private sector organisations can work with customers to co-create their own Web pages to make interactions specific and personal. Although this practice is possible in the public sector, there is less opportunity and less evidence of its adoption here.

Private sector organisations exploit e-business to standardise low-profit transactions, using the ‘80/20’ rule (Percival-Straunik 2001) focusing human interactions on the higher-earning transactions, hiding the helpline number from customers transacting lower-earning business. Public sector services, on the other hand, must be available and accessible to all. The differing profit-earning potential of service users is not a relevant factor, although public sector organisations will attempt to persuade service users to choose electronic interactions when

possible, through an ‘assisted to digital’ programme, as shown also in the responses to the survey in Chapter 2.

1.9 CONCLUSIONS

E-business practices that were first taken up by private sector organisations are being adopted by public sector organisations where this is appropriate, so that public sector services can undergo a similar transformation to those of the private sector. Public sector organisations must ensure that the move to e-business does not mean that services are unavailable to any part of the population that may require them. This is unlike the private sector, where businesses can work solely on a online platform if they wish to do so. E-business practices must not raise transaction costs for those public service users who are excluded from e-business use in some way.

In both the private and public sectors, the use of websites, social media and electronic communications has changed the nature of interactions with the UK public. Service users are able to access a wider range of information, and are able to scrutinise organisations better and to engage with them in a more flexible way, at a time, and in a location to suit themselves. Organisations that use websites and social media extensively become more open and accessible, with the possibility of both good and bad publicity.

E-business has naturally meant a move away from face-to-face or telephone engagement to email and electronic interactions. These issues are covered in Chapters 2 and 3. The shift to e-business in the public sector has led to a requirement for more sophisticated communications skills from service-providing organisations, including Web-design and social media capabilities.

2. While the availability of broadband, mobile phone services and a reliable telephone service is an issue, particularly for people who live in remote areas of the UK, these issues are outside the scope of this study and have not been included.

2. Survey of providers of public services

2.1 OVERVIEW AND OBJECTIVES OF THE SURVEY

This chapter is based on the findings of a survey of people working in organisations that provide services to the public. It forms the core of the research presented here.

The objectives of the survey were:

- to provide evidence of how e-business can enhance and transform public service provision
- to collect and gauge viewpoints from employees working in these areas
- to examine any resistance from participants to the adoption of e-business practices
- to gather the views of different public service providers on how far e-business has already been adopted and the extent to which their organisations could benefit from further adoption
- to look for common themes and issues in the adoption of e-business practices in the public sector, and at how e-business is changing public service provision.

2.2 METHODOLOGY

Invitations to complete an online survey were sent to contacts who work in organisations (predominantly public sector), that provide services directly to the public. Each participant was asked to respond to a set of questions about their organisation's position regarding e-business services; 31 participants responded to the survey and they were drawn from different organisations.

2.3 INTERACTION WITH SERVICE USERS

Question 1:

How does your organisation interact with service users? ('Service users' here means patients, taxpayers, the general public, the end-users of the main service that your organisation provides.)

Participants were given four options summarising how their organisation might interact with service users:

- exclusively electronically (via website, email or other electronic means)
- face to face, post, telephone
- a mixture of the above, but mainly by electronic means
- a mixture of the above, but mainly face to face or by telephone/post.

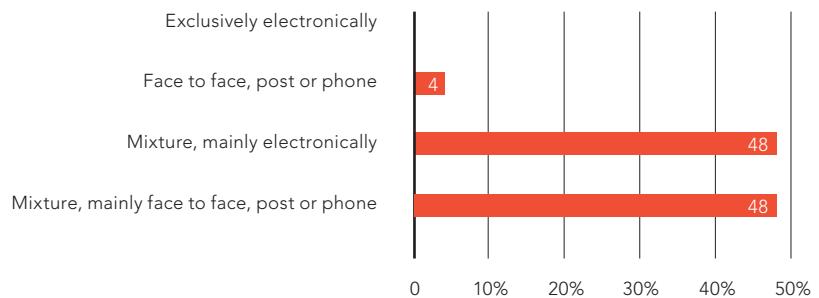
This question was included in order to encourage the participants to rate their organisation's adoption of e-business practices and the extent to which progress towards use of e-business had been made. A summary of the results is shown in Figure 2.1. The perception of whether the mixture of e-business and non-e-business was dominated mostly by electronic means or mostly by non-electronic (face to face, post or telephone) is an interesting one, in that the former answer suggests that the transition is closer to full e-business

(48.4% of participants), and the latter (also 48.4% of participants) that there is still much to be done to reach full e-business, or 'Digital by Default'.

Only one participant (3.2%) chose the option of 'face to face/post/telephone' as their organisation's only methods of communicating with service users. The responses overall show a clear move towards use of e-business, and the 'Digital by Default' position.

The response of a flood manager at a large local authority is interesting in that this area of work is an exceptional rather than a core service, and gained more importance after hundreds of homes were severely damaged by floods in the city concerned in 2007. As organisations move towards e-business provision of services where possible, it appears to be the core (rather than the exceptional) services that are moved to e-business initially. This point is also reflected in the findings of the DSA and HMRC case studies that we will look at in Chapter 3.

Figure 2.1: Summary of responses to question 1



2.4 E-BUSINESS IMPROVEMENT POTENTIAL

Question 2:
Which aspects of the services that your organisation offers could be carried out better (more efficiently and more effectively) by electronic means? Please give some examples and a brief explanation.

The inclusion of this question was to gauge participants' views on the scope for improvements that can be made by moving to e-business practices.

One interesting response was: 'I'm not happy with more emails and would prefer more face-to-face meetings'. This participant was from a police authority, and while he appreciated the efficiencies gained from an electronic approach to administration, file-sharing, etc, the idea that emails could replace face-to-face interactions with colleagues and service users was, to him, a step too far.

In the police, there are instances when face-to-face communications are vital, including the interrogation of suspects and other routine policing matters. A similar concern was also raised by the participant from a city council, reflecting the apprehension aroused by moves to e-business practices and concerns that key face-to-face interactions will be replaced, depleting the value of services and changing the nature of the service provider's role.

The responses also showed that e-business practices can act in supportive ways:

- in providing information, eg on neighbourhood watch schemes, crime prevention advice and general public relations issues
- in the collection of and response to routine enquiries, eg the police service has a 'Report a Crime' online service and a lost property logging service
- in recruitment matters, such as online job applications.

The provision of the above services through online platforms supports and enhances the work of the organisation's face-to-face activities. In the case of the police service, this frees officers' time and allows routine matters to be dealt with by a back-office system. The response of a participant from a police authority shows an aversion to what may be seen as a cultural creep towards an electronic bureaucracy that could hamper the provision of effective policing, rather than enhancing it.

Over half the participants were able to give examples of how their organisations could provide services more efficiently and effectively by electronic means. Suggestions from the participants fell into distinct categories, which are shown below. Although the survey covered the provision of services to external users, the responses show that internal procedures are also seen as important, and that significant efficiencies can also be made here.

Eight participants cited specific internal procedures that could be moved to e-business. In summary, these covered:

- electronic capture and storage of correspondence and data, to enable better file-sharing, allowing the organisation to track trends and helping in the analysis of recurring problems
- end-to-end procurement for all certain requisitions could be moved online (in this instance, the participant working for a government department was referring to an internal system, where the service users were personnel rather than the taxpayer or general public)

- specific internal processes that could be moved to electronic platforms (payroll, learning and development, data sharing and analysis were all given as examples), or handled more efficiently by the better use of electronic systems, replacing or enhancing the use of spreadsheets
- better sharing of information with internal service users, making key information more readily accessible electronically
- video-conferencing for internal service users (this was mentioned several times), as a means of bringing decision makers together and reducing travel time and costs
- sending data and test results between GPs and hospitals (this was not carried out by electronic means in the organisation represented by this participant); another participant also noted that tests are duplicated if a patient moves from one hospital to another, because the test results are not sent electronically between the hospitals
- electronic communications could replace letters to a much greater extent in the Health Service, for appointments, reminders and other communications
- internal administrative 'house'-type forms which are generated to comply with health and safety regulations could be moved to an electronic format.

The frustrations of those involved in service provision, seeing the shortcomings of internal systems and the capacity to enhance these with the

use of e-business methods, to the benefit of internal and external users, is startlingly evident. Participants deal with many of the procedures mentioned on a frequent basis, so the scope for improvement is very noticeable.

There are instances where small, low-value transactions are carried out on a daily basis, on a manual system (eg returns and financial reporting procedures carried out by schools, as noted by one participant) that would benefit from a move to e-business processes by saving time and increasing accuracy and efficiency. Participants reported instances where these changes were being held back by the requirement for capital investment to enhance the existing system.

One of the participants involved in emergency planning in a local authority said that better use could be made of email briefings and social media to send out information on aspects of such planning. Interestingly, the Environment Agency does this well, using email alerts for flood warnings. The adoption of a similar policy at local level could serve the same purpose.

Of the total, 11 participants said that their organisation could make better and more effective use of SMS or email communications with service users. The use of SMS text reminders of health-service appointments could create significant cost savings by eliminating the inefficiencies that arise from missed appointments.

The participant from a water authority suggested that better use could be made of electronic communications to support face-to-face or frontline services. While an operative clearly has to visit the service user to connect them

to the supply or to repair a fault, there is an opportunity to streamline this service by using a properly configured electronic system. Similar issues were recognised in responses from health service participants regarding the use of electronic communications to support face-to-face interactions with clinicians.

The experimental introduction of e-petitions in parliament is an example of a project which is currently under way to enhance the way that MPs communicate with the electorate and, ultimately, to ease participation in the democratic process.

A significant area where electronic communications could be used to make the provision of services more efficient was in the coordination and co-creation of 'living' documents (suggested by a participant who heads the emergency planning team for a borough council). Such a practice would enable town and parish councils to create their own community emergency plans electronically, without having to wait to get together to produce and agree a plan over the course of a series of meetings.

These responses show a desired outcome of increased efficiency alongside other socially desirable outcomes such as social inclusion, enhancement of public services, a greater sense of community and more democratic participation.

Existing practices can be enhanced, using electronic procedures to create efficiencies. The wealth of workable and practical suggestions reflects the resounding capability of staff in a service-provision position to contribute to the e-business strategy of their

organisation. These suggestions included the following.

- 'Overcoming the requirement for physical signatures on documents regarding the estate-planning function at a university'.
- 'Health service clinic bookings are made by the service, on behalf of the patients. Savings can be made if patients make these bookings themselves, leaving the staff who are employed to do this to deal just with those patients who are unable or incapable of doing this themselves'.
- 'Better use of telemedicine to give advice and support to known patients, to prevent them from having to attend hospital appointments'. (This response hints not just at efficiencies that could be created by electronic means, but also at general efficiencies in procedures.)
- 'Electronically completed examinations would reflect the working practices of most organisations better and could be collected and marked electronically.'

Two participants from customer services in a police authority and a city council stated that they wanted the opposite of the move to electronic transactions. They both said that their service users valued face-to-face interactions, and both they and the service users were unhappy with the push for more email interactions.

The wealth of suggestions demonstrates the scope for making efficiencies, and the importance of using the knowledge of the front-line worker, as well as those in supporting

roles, to suggest how efficiencies can be made. Some of these suggestions (eg SMS reminders to service users), can be put in place fairly easily and cheaply, using the standard software already used by some public service organisations.

The move to electronic interactions with service users may be perceived as being too quick, or not appropriate. As emphasised by an interviewee, it is important that organisations create internal advocates who will promote internally the benefits of e-business practices and address resistance from colleagues.

All participants indicated that their organisation was in the process of moving to e-business methodologies in some way. The DWP prompts customers to claim benefits electronically, if they are able to, even if the customer calls by phone to make the claim; FCO is making increasing use of social networking to inform service users of developments; HM Revenue & Customs is moving away from face-to-face contact towards electronic means (the participant made specific mention of the significant cost savings to be made by such a move); the Department for Communities and Local Government (DCLG), whose service users are the local councils themselves, is moving towards the provision of more information via a secure information-sharing 'extranet'.

The responses show that service users expect a flexible and cooperative relationship with the service provider. The providers are aware of this and want to adapt their service to give this flexibility. Rather than telling a patient when to turn up for an appointment, a hospital will consult with the patient to

find a suitable time. The use of electronic booking allows the patient to benefit from this flexibility. Service providers are also aware that they must work with patients and other service users, to send them SMS reminders of their appointment times. At no point did any participant complain about service users' need to be reminded – they wanted to work with users to eliminate the inefficiencies associated with missed or changed appointments.

2.5 EFFICIENCIES FROM E-BUSINESS

Question 3:

Are there any aspects of the work that you do that could be made more effective/efficient if moved to an electronic or paperless format? Please give a brief explanation.

Building on the above answers, this question asked participants to consider, specifically, the scope for making efficiencies through e-business. Some participants had already mentioned such efficiencies in their responses to the previous question.

Participants suggested various ways of reducing paper use and streamlining or connecting procedures for internal communications. This included the use of tablet computers and other methods to facilitate real-time communications and to eliminate the requirement for hard-copy documents. Video-conferencing and Web-enabled communications were suggested as a means of cutting travelling time between meetings and of overcoming the difficulties of getting people together in the same location to make decisions.

Other internal procedures were mentioned; one with both internal and external implications was the suggestion that the use of mobile technology could enhance recruitment and selection procedures. Shared intra-organisational facilities such as internal reporting, resource libraries, learning and development processes were also all recognised as areas that would benefit from the use of electronic communications.

One participant regularly submitted financial claims to another government department for expenses incurred to support disabled staff. Invoices received electronically had to be printed out, manually attached to a paper form and sent off in order to make the claim. There are clearly opportunities where services could be connected so that such time-consuming and inefficient practices could be eliminated.

A university estates service still uses a manual signing-in-and-out sheet for staff, which is then manually transferred to an electronic spreadsheet. Annual leave and flexi-leave are also requested and approved using a paper-based system, which is then input onto a spreadsheet. Clearly, there is great scope to make the whole system an electronic one, thus saving time, creating efficiencies and eliminating duplication of work and the propensity for error.

Cloud-based technology and the internal delivery of study materials were also suggested. Several participants mentioned the potential for greater use of smartphone communications both internally and externally.

In the case of external communications, participants suggested the use of electronic booking applications and other more specific ways in which documents could be delivered electronically to service users rather than using paper copies. Again, better use of social media was suggested as a means of informing and communicating with service users.

Providing useful information via the organisation's website is an opportunity to inform customers, and may lessen the requirement for service users to have to contact helpline support. Organisations commonly list frequently asked questions or 'FAQs', but in order to be effective and useful these must be easy to search, well written and wide enough in scope.

Regarding external services, one interesting and potentially, very practical suggestion was 'Risk assessments at incidents [emergencies]

could be completed electronically, thus securing data and ensuring consistency in completion'. This participant recognised the multiple benefits of e-business methods for efficient data handling and collection and consistency of service.

Also mentioned were shortcomings in the databases of customer details, which hinders effective tracking and data analysis. Such shortcomings can be reduced as services move to e-business platforms, raising the point that e-business pushes organisations towards better and more complete record keeping. Procedures can be built in to the user interface to prompt service users to update their contact details each time they access the system.

E-business also eases the tracking of service-user progress through a system or procedure. One participant from the education sector cited this, although the principle could have much wider application.

When discussion moved to organisational information technology (IT) capacity there were mixed responses from participants associated with the NHS, showing a variety of levels of IT sophistication. The best adoption of e-business practices relate to organisations that use a shared business service provider, such as NHS Shared Business Services. This leads to the conclusion that using an organisation with expertise and economies of scale allows for greater and better exploitation of the advantages available to e-business practices, among other more sophisticated business services.

Two participants mentioned specifically the shortcomings of their organisations' own IT systems as a restriction to the further adoption of e-business. In some cases, strict data-security issues also prevent public servants from sharing data between organisations, particularly NHS organisations, causing inefficiencies and the duplication of work.

In the NHS, external communications to patients from hospitals and GPs could be sent electronically rather than by post, if agreed by the patient, again saving time and money. Such a process appears to be held back by data security and systems issues.

Responses include mentions of processes where paper-based forms and practices are manually transferred onto a central system. Examples included timesheets and the use of electronic methods throughout a whole process (eg the procurement process, as noted by an interviewee from a government department), which would reduce the opportunities to introduce errors into the system, allow for more data analysis, greater efficiencies and reduced administrative time.

2.6 THE JOURNEY TO E-BUSINESS

Question 4:
To what extent do you think that your organisation has embraced the use of the electronic delivery of services?

This question builds on the response to question 1, asking participants to think more about how far their organisation has moved towards e-business services, and the extent of the possibilities for further e-business. The four participants (13%) who felt that their organisation had embraced electronic methods 'only a little' were from several public sector organisations.

It is difficult to draw a theme from these

responses, as these organisations fall within different areas of public service. There are also examples of organisations within similar areas (including other areas of the NHS and local councils), where the electronic delivery of services is rated as having been embraced to a much greater extent.

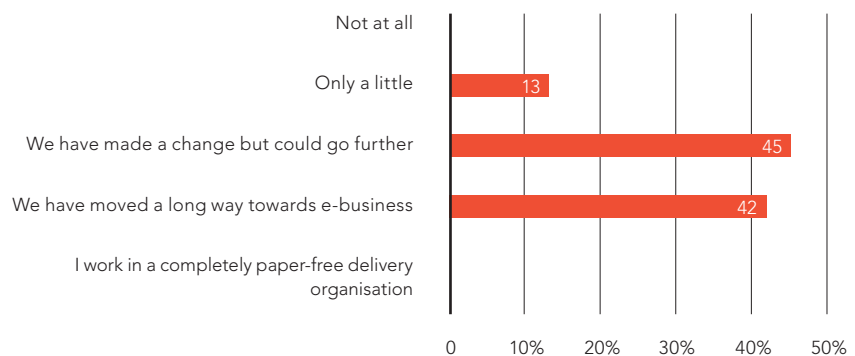
As shown in Figure 2.2, all the answers to this question fall into the middle three categories, with the majority (45%) saying 'we have made a change but could go further'. The other responses show that the organisations represented by these participants are all moving towards e-business service provision and have all embraced e-business processes to an extent, but are still significantly far from the final point of 'completely paper-free delivery'.

Only 12 participants claimed that their organisation had moved a long way towards e-business. Of these, four had answered question 1 by saying that

their organisation interacts with service users by a mixture of electronic and face-to-face/postal/telephone means, but used mainly face-to-face/telephone/postal contact. The term 'a long way' clearly means different things to different people, and will depend on their own expectations of how far the organisation is capable of moving on the path to full e-business. These four worked for the library service, DWP, HMRC and the NHS. These are all organisations that, even with the best possible adoption of e-business practices, will have to retain some face-to-face/telephone/postal service: to issue books, to interview claimants, to investigate tax compliance issues and to treat patients.

The answers show recognition that there is a point at which e-business practices have to stop, and face-to-face, postal or telephone communications remain the only option, which cannot be replaced with an electronic alternative.

Figure 2.2: Summary of responses to question 4



2.7 PERSONAL REFLECTIONS ON E-BUSINESS

Question 5:

From your own, personal point of view, do you recognise ways in which your organisation could benefit from the use of e-business practices? Please add your comments.

This question was included to give an indication of how individuals who are involved in providing services recognise the opportunities that e-business practices could bring to their organisation, and to look at any points of resistance to the move towards e-business methods.

Some participants seemed to indicate distress when they can clearly see areas in which their organisations – by nature large, bureaucratic, fairly conservative institutions – are missing out on efficiencies owing to the slow way in which e-business is being adopted. A very good reflection of this sentiment is:

‘The hospital sends out thousands of these [paper letters] each year...they are mass-produced and, from my understanding, of variable quality. We do offer things such as text reminders, which are a step in the right direction, but a better understanding of how patient communications could be handled electronically would benefit the majority of service users. It’s worth pointing out that a sizeable segment of our users are elderly and may not be comfortable with electronic communications’.

Conversely, there are instances where participants were frustrated that e-business was being adopted, and was changing the nature of their role in ways that they did not like.

The nature of the language used showed that participants viewed their organisations as akin to private sector businesses in their requirement to become ‘much more agile’ and to work in real time, without being hampered by the delays and inefficiencies of data entry. One response stated how much further the organisation could go to ‘get the most out of...e-business tools, such as...Oracle ERP’ rather than

keeping finance records in spreadsheets. There was mention of the offering of standardised services electronically using more efficient processes. Participants appeared to be clear in their understandings of the shortcomings in service provision by their organisations.

One participant mentioned the benefits that would accrue to all areas of the organisation, while others cited specific areas such as procurement, performance measurement, commissioning, tendering, informing and educating the public, sharing learning, capturing and sharing data, making better and more astute use of social media, the interaction between the public and private sectors, sharing health care information between different providers, the replacement of paper-based communications with service users (patients), and accounts payable and receivable.

A number of conclusions can be drawn from the above and other similar comments.

- People working in the provision of public services are often frustrated by the lack of adoption of e-business practices
- There are significant efficiencies to be made that would lead to better, more consistent provision of services.
- E-business practices must be adopted only when it is appropriate to the service user.
- E-business methods would benefit the individuals working within these organisations by eliminating dull, repetitive tasks and freeing their time for higher-level matters.

- Numerous workable ideas on the adoption of e-business practices could be collected from the people working in public service organisations.

A good reflection of the overall belief expressed in responses to this question came from the participant who simply stated that 'all business processes' could benefit from the adoption of e-business practices. This fits well with the answers to the previous question, which reflects the recognition of the extent of the rest of the journey to full e-business of appropriate services.

The responses from five people who are involved in emergency planning highlight the way that these organisations could work together better to benefit homes that are at risk of flooding or other emergencies, to mitigate risk and streamline the activities of their organisations. Such responses suggest that there is a sense of frustration among the participants, who see the value and importance of their service being reduced by a lack of innovation in the use of e-business.

2.8 THE TERM 'DIGITAL BY DEFAULT'

Question 6:
Are you familiar with the term 'Digital by Default'? Please give a further explanation of how/if this practice is used in your organisation.

Seven participants work in UK central government departments, where the phrase 'Digital by Default' is used to embody the Cabinet Office policy to be adopted by all government departments. One participant out of these seven was not familiar with the term, suggesting that it has not completely permeated all areas of the UK civil service. Of the other participants, one was aware of it through the media and another was aware of it in relation to local council activities.

All UK central government participants who were familiar with the term 'Digital by Default' gave an outline or link to their departments' policy in their response.

2.9 CONCLUSIONS

There are worries about the loss of face-to-face contact and the changes in the nature of public service roles. For employees, it may be the customer contact that proves to be the most rewarding and satisfying part of their job. This also came out strongly in the responses from the customer service adviser at a local authority : 'the customer contact is invaluable'. Moves to replace these interactions would clearly change the nature of such jobs in a way that would detract from job satisfaction. For those who work in public services, the need to interact with service users may provide the main motivation for choosing that particular career path.

Public service workers are worried that the full adoption of e-business practices will detract from the value of the services that they provide. The participant from a police force was clearly bothered about losing face-to-face contact to e-business practices. Service providers who are proud of the specialist, customised service that their organisation provides are understandably sceptical about moves to replace this with any alternative.

Participants commented that service users must be trained and assisted in the move to e-business methods. Also, organisations must persuade service users of the benefits of e-business, and offer help, training and support to facilitate the change. DSA, DWP and HMRC all assist service users with 'assisted digital practices' as they move towards achieving 'Digital by Default'.

Responses highlighted the way that e-business methods would assist in data capture and storage. The electronic capture of correspondence and enquiries means that data can be more easily categorised and analysed. Several of the survey participants work in an emergency planning role, so can benefit greatly from the analysis of data that records actions taken as a result of emergencies, so that lessons can be learnt, and services more readily mobilised should similar instances occur.

When organisations hold large amounts of data electronically, they can use this for strategic and operational planning, which facilitates more cost-effective resource planning and operational efficiency.

Although participants implied that austerity measures were part of the modus operandi of their organisation, this was not explicitly stated. The drive to create efficiencies and to reduce costs using e-business practices may also be seen as a means of complying with the drive to reduce the public sector deficit in line with the current austerity measures imposed upon public sector organisations in the UK.

Participants mentioned that e-business methods allow customer feedback to be more easily captured. The completion of satisfaction surveys, for example, can be requested easily and efficiently when service users interact with the organisation electronically, and the results can be immediately captured and collated, without the hold-ups and further work that would be needed from a manual system with paper-based forms.

To exploit the benefits of e-business fully, organisations must also look at the potential for creating internal efficiencies. The survey responses show numerous instances of where e-business practices can create internal efficiencies and save time and money.

One implication was that offering more information to service users and more avenues of communication might increase the demand for public services. E-business creates more opportunities to contact the police service, for example. This may create a further expectation that lower-priority policing issues such as vandalism and anti-social behaviour will be addressed more quickly than is possible, because they are more widely reported using electronic communications.

Information sharing between public service organisations is easier and more efficient if carried out by electronic means. Communications can be quicker, consistent and more accurate, allowing for a faster flow of information with fewer requirements to duplicate work, eg when a patient is moved from one hospital to another, as suggested in a survey response.

Responses showed that the culture and flow of messages around the adoption of e-business must be managed well. Internal advocates and effective internal communications are vital in spreading the messages about the adoption of e-business to all parts of the organisation, so that these benefits can be passed on to service users.

There are many opportunities for local and national government bodies to use electronic communications and data sharing to link up and enhance services. Organisations can also benefit from copying best practice procedures and processes from each other. Although local government participants were largely unaware of the 'Digital by Default' policy, their organisations were already working towards similar goals.

There are significant benefits to be made from the adoption of e-business practices for routine matters. Where the interaction between service user and service provider is a straightforward information exchange (checking opening hours, addresses, etc) or where the service user interacts in a standardised, routine way (booking an appointment, uploading standard documents), e-business can create efficiencies by saving the time that would be taken by the postal or telephone service and by lowering the administrative cost for both parties. It can also reduce the possibility of errors or misunderstandings.

3. E-business case studies

This chapter explores the successes and challenges of adopting e-business methods experienced by three public sector bodies:

- the Driving Standards Agency
- HM Revenue and Customs
- the UK library service.

3.1 CASE STUDY 1

DRIVING STANDARDS AGENCY (DSA) – A LEADING LIGHT IN THE MOVE TO E-BUSINESS

Introduction and background

DSA is an executive agency of the Department for Transport (DSA 2013), a ministerial department within UK government. DSA's main objective is to improve the safety of British roads through standard setting and the education and examination of drivers (DSA 2012). In the UK, anyone taking a driving test, which consists of both a theory and practical test, will have an interaction with DSA.

DSA is examined here to exemplify the potentially transformative effects of e-business.

Adoption of 'Digital by Default'

DSA has consistently sought to embrace technological changes in the quest for greater efficiency. This has included initially moving to call-centres, and then to digital platforms while encouraging and supporting service users to move to digital interactions.

DSA's objective is that over 90% of transactions will be carried out by electronic means by spring 2014. Current peaks in performance show that this should be achieved on a sustainable basis by March 2014.

At present, the use of tablet computers by driving examiners is being piloted. Examiners use these to record test outcomes in real time, to dispense with the requirement for manual completion of a paper form-set which is then posted to DSA offices and scanned.

DSA has placed comprehensive information on its website and social networking sites, which can be accessed by all at no charge. This information includes:

- videos on safe driving
- all sections of the Highway Code
- press releases, and
- other material of interest to drivers.

As a result of the drive towards 'Digital by Default', DSA forecasts efficiency savings of £5 million by 2014 (DSA 2013), which is around 3% of annual expenditure, despite falling demand and static fees for driving tests. (Driving test fees have not changed since 2009.)

The number of administrative staff within DSA in 2012 was 625. This figure fell to 548 in 2013 and is expected to fall again to 500 in 2014 as a result of lower demand, coupled with increased efficiency associated with electronic communications, which reduce both paper handling and the need for customer-facing staff. There are other contributory factors. These include concerted efforts to reduce staff absence using health and well-being initiatives, and management training. Nonetheless, digital (or electronic) communication is taken to be the predominant factor in lowering the number of administrative staff.

On the way to achieving a fully 'Digital by Default' process is the stepping-stone process of 'assisted digital', whereby telephone callers are steered towards and assisted with the use of electronic transactions and communication.

As 'Digital by Default' becomes the way of working within DSA, all new processes and planned processes will be set up for digital (or electronic) methods. CPC, the certificate of professional competence for lorry drivers, is a good example. A new system for administering CPC was built (fully digital) in 2008, so all transactions are now carried out electronically. The trainer uploads the record of the training event and inputs the data electronically. The system is also linked to the Driver and Vehicle Licensing Agency (DVLA). Drivers and their employers can log in to the system electronically.

There are some internal processes that are yet to be fully converted to digital platforms, including the procurement process for sending electronic purchase orders to suppliers. The 2015 'Digital by Default' objective (DSA 2013) includes both internal and external processes.

Issues, barriers and resistance

Civil servants are commonly recognised as being fairly conservative in nature and there is always a natural tendency to stay with tried-and-tested practices rather than moving to electronic services. Change can be daunting, especially within an organisation that is pioneering significant change and cannot look to other similar organisations for reassurance and assistance.

Security issues must be an overriding factor with any move online. High-profile cases such as the HMRC loss of computer discs holding child benefit data in 2007 (BBC 2008) fuel worries about data safety.

The speed of change has meant that DSA is always looking forward to the next change, even while the current change is in progress. This means that managers – with the backing of the board, must constantly drive change, accepting that there will be a continuous evolution of processes.

There will always be a core number of service users who are wary of doing business online, who do not have access to a computer or who lack the skills to use a computer to interact with government departments. Public service providers must ensure that their services are still available to these people, so must work with them to train them, reassure them and accommodate them. A 2013 NAO report (NAO 2013) states that the public trust the UK government with online information more than they do banking and insurance companies, but still only 37% of people are happy to share information with the government online, although only 5% would be completely deterred from such activity by security concerns.

There are still rare instances when paper-based transactions are used by DSA, eg if someone assaults or abuses an examiner, a paper-based report is completed. Such reports must move online if a 'Digital by Default' situation is to be achieved.

Not all the benefits of achieving a 'Digital by Default' status are quantifiable in a way that can be shown easily in a business case. As business cases are made for each investment in digitalisation, there will be benefits such as a rise in confidence levels; shorter and fewer time-lags in the processing of applications; greater service-user satisfaction; and an easier-to-use service,

all of which are difficult to put a cash figure on, but are still discernible benefits.

DSA must continue to maintain a small telephone support service to assist anyone who is having difficulties in using the online processes.

The transformative effects of 'Digital by Default'

The move to the provision of electronic services to end-users has created significant cost savings for DSA, to the benefit of the UK public purse. In the 1990s there were 12 DSA area offices, all handling paper-based applications and telephone enquiries. This was rationalised to just five in the early 2000s. Internet bookings were introduced in 2002–3, and the number of offices was cut to only two during the 2007/8 financial year, then to one in the financial year 2011/12 (DSA 2009, 2011, 2012).

Digital processes are easier and quicker to link with other agencies or departments. DSA has a good connection with DVLA, for example, so that when candidates pass their driving test, they can opt for DSA to retain and shred their provisional licence and for DVLA to issue the full licence from test results relayed electronically from DSA to DVLA.

E-business practices can make interactions much more immediate, cutting communication time lags and the related inefficiencies. For driving-test bookings, the use of mobile devices by driving instructors and their clients means that the trainer and the candidate can look together at a test booking slot online. This significantly cuts down on the requirement to re-book because one of the parties

cannot make it (as the process requires three parties to agree on a common time for the test). It was estimated by DSA that before the move to online bookings, 50% of call-centre traffic was for re-bookings.

Once the pilot use of tablet computers by examiners is rolled out, the second phase of e-communications with examiners will see all internal communications with them (routine administration, expenses, holiday bookings, etc) being carried out electronically, eliminating postage costs, reducing administration time and allowing examiners to concentrate on their core work.

Technological advances have also helped DSA to make efficiencies with education material. Candidates were once sent a video, and more recently a DVD, which was then replaced by electronically self-selecting video clips from the YouTube online channel. Each method was cheaper than its predecessor, allowing cost savings and efficiencies to be made with each change.

Successful adoption of 'Digital by Default'

DSA's services may be less complex to transfer to an electronic platform than, say, the more complex services of HM Revenue & Customs or DWP.

The dominant demographic dealing with DSA is 17–24-year-olds. The National Audit Office report '*Digital Britain 2*' (NAO, 2013) gives the 'offline' proportion of the 15–64 year old

age-group to be 9%. It would be reasonable to expect that for the lower end of this age-group who can afford to take driving lessons, the 'offline' percentage would be zero, or very close to zero. This group is almost all likely to either own a smartphone or computer, or to have easy access to one within their household. They are also the most likely age group to embrace the use of social media and mobile-technology – areas of communication that have been adopted by DSA.

There is an obvious enthusiasm and willingness within DSA to promote the benefits of 'Digital by Default', which has set the culture and driven the required changes. The use of internal advocates to champion the use of digital delivery for the shift has been key to its success.

The requirement for DSA operations to be funded by the income generated by the organisation itself is a constant incentive to keep costs down, because it must continue to meet other performance measures, relating to road-safety, while becoming a leaner, more efficient, customer-focused operation.

3.6 CONCLUSIONS

During the years 2009 to 2012, DSA made a very conscious move to introduce a progressive range of e-business practices, with a target of being fully 'Digital by Default' by 2015. These changes have helped to drive an income/expenditure deficit into the two most recent financial years of making a surplus of over £9 million in the year 2011/12 (DSA 2009, 2011, 2012).

E-business take-up has risen steadily, as shown by Figure 3.3, and will be shown in the 2012–13 accounts as over 90%, which is in excess of the target set for the year.

The policy of assisting service users to communicate electronically has led to a significant fall in telephone calls received, as shown by Figure 3.1. This has also led to a decrease in the number of email enquiries, which dropped from 73,000 in 2010/11 to 46,000 in 2011/12 (DSA 2009, 2011, 2012).

A reduction in the number of back offices required and reductions in the numbers of administrative and customer services staff has been achieved, as shown by Figure 3.2, as transactions have been moved online. The embracing of social media started in 2009 with the DSA's YouTube channel, which had over five million views in 2011/12. A steady increase in the number of direct email alert subscribers (rising from 11,000 in 2009/10 to 34,000 in 2011/12) has also helped to increase customer satisfaction and engagement, while cutting costs (DSA 2009, 2011, 2012).

Figure 3.1: The decline in the number of telephone calls received by DSA, as service users move to electronic communications

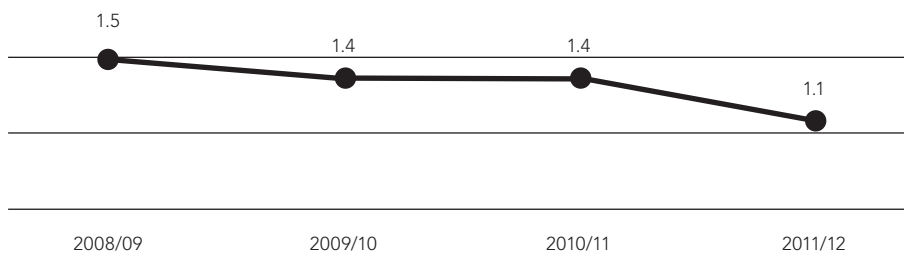


Figure 3.2: The reduction in the number of administrative or support staff required, as service users move to electronic communications

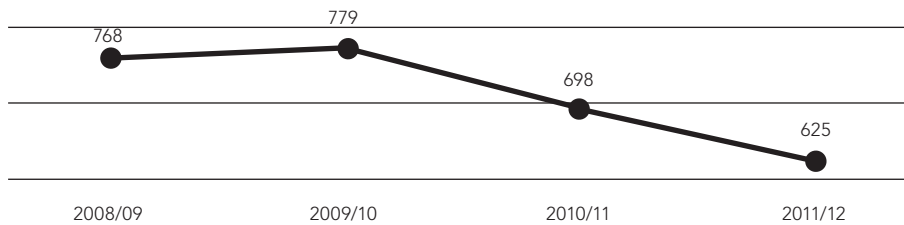
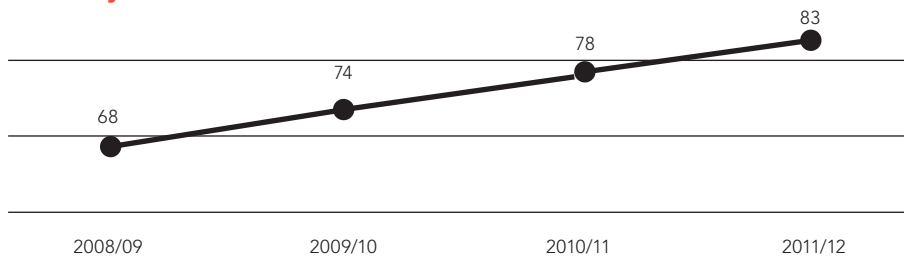


Figure 3.3: The percentage of business carried out electronically for each financial year



3.2 CASE STUDY 2

HOW CAN E-BUSINESS TRANSFORM THE SERVICES OF HM REVENUE & CUSTOMS (HMRC)?

Introduction and background

HMRC is a prime example of the 'paper factories' (The Economist 2013) referred to by Francis Maude – Minister for the Cabinet office, speaking about the need for government to move to a policy of 'Digital by Default' for its transactions. Of the self-assessment returns due by 31 January 2013, 17.5% were made on paper and submitted by post, which meant that HMRC offices received 1.7m paper forms, each at least six pages long (HMRC 2013).

HMRC has the highest number of transactions of any government department (Cabinet Office 2013), with 977,870,260 transactions recorded in the financial year ending 5 April 2012. Of these, 45% were stamp duty reserve tax transactions (SDRT), paperless share transactions that incur tax, at a reported cost of £0.05 per transaction. Even excluding SRDTs, HMRC still handles more individual transactions than any other government department.

This section is an attempt to quantify the impact of e-business on two example HMRC transactions, to show how e-business mechanisms could produce significant cost savings.

HMRC is working towards 'Digital by Default' and posts a host of well-ordered and categorised information on its website, to inform and assist taxpayers and their agents. The website includes online tax calculators, news, campaigns and announcements, and links to YouTube advice and guidance videos.

In 2012, HMRC published the findings of a consultation on the adoption of 'Digital by Default' (HMRC 2012), which took into account the views of professional bodies, individuals and businesses. One of the main conclusions of the consultation was that '...no matter what level of support was offered, there would always be some for whom using online services would never be possible'. It was agreed that HMRC should encourage the use of online services, making these easy to use and attractive. Service users should also believe that their data would be kept secure. The importance of an 'assisted into digital' approach was recognised, so that taxpayers are coached and assisted to move from paper to electronic/digital transactions.

Transaction Explorer data issued by the UK government in January 2013 (Cabinet Office 2013) states that 88.6% of HMRC's 16 most high-volume transactions are now performed online. The percentage of transactions other than SDRTs that are completed digitally is 79%.

Self-assessment returns, which are largely submitted by the self-employed or higher-rate taxpayers, for the tax year 2011/12 were due in by 31 January 2013. HMRC reported that of 10.34 million returns due, 9.61 million (93%) were made by the deadline, and of these, 7.93 million (82.5%) were submitted online. The figure given in the government's Transaction Explorer data for the previous tax year was only 63.9% for self-assessment, so in just one year there was a 46% increase in the proportion of online submissions.

HMRC's response to a Freedom of Information (FOI) Act request (Ripley 2013a) showed that HMRC estimate that the cost of processing a self-assessment tax return is 'around £12' for a paper return, and 'less than £1' for an online

submission. Thus for every 1% of self-assessment taxpayers (103,400) who move from paper to online, a cost saving of £1,137,400 will be made (£11 per taxpayer).

The following areas of operation are presented here to show how operations can be moved to an electronic format, with no investment beyond a procedural change.

Example 1: FOI requests

In March 2013, the author submitted an FOI request for information on paper-based transactions (Ripley 2013a) through HMRC's website, but this was answered by letter, signed by hand and posted in a handwritten envelope. On this one, simple transaction, had HMRC responded by email to the original email request, they would not have had the expense of printing the letter; signing it and writing the envelope by hand, postage costs, and the cost of archiving a physical copy of the letter. An estimation of these extra costs incurred owing to the policy of not responding by email is shown in Table 3.1.

Table 3.1: Estimated cost savings for FOI requests

Item	Cost (£)
Printing costs – 2 sheets	0.10
Extra admin – signing letter, writing envelope, posting letter	1.00
Postage costs	0.33 (business rate) (Royal Mail 2013)
Cost of paper and envelope	0.12
Total estimated extra cost	1.55

HMRC responded to 1,953 FOI requests in the year to 31 March 2012 (Ripley 2013b). A saving of £1.55 administration costs for each one would generate cost-savings of £3,027.

Example 2: Self-assessment tax returns

Following changes in the child benefit payment system, a further group of taxpayers now have to fill out a self-assessment form for HMRC. An initial letter was sent out to these taxpayers to explain this, followed by a subsequent letter, then a pack of forms and guidance. The forms may either be completed manually and posted, or completed online.

HMRC could have asked the affected taxpayers to communicate with them by electronic means in their initial letter. If this had happened, only that one initial letter would have been required, and taxpayers would have been guided to email contact, would have received the second communication and the forms and guidance electronically. The extra costs of not taking this action are estimated in Table 3.2.

The child benefit changes are estimated (by the Office of Budget Responsibility), to affect 1.5 million households (Guardian 2010). Of these households, a reasonable assumption is that at least 50% will have now to complete self-assessment forms. Even if these taxpayers complete and submit these returns electronically, the preceding paper-based communications as outlined above, at £ 2.67 for each of the households affected, is a £ 2,002,500 extra cost, which could have been avoided had the affected taxpayers been steered to electronic communication.

Table 3.2: Estimated costs incurred for communications related to self-assessment for new child-benefit rulings

Item	Cost (£)
Cost of sending out second letter (1 sheet, envelope, admin and postage at £0.08+£0.10+£0.33)	0.51
Cost of printing a personalised 6-page tax return form, 4-page additional information form, 8-page 'brief notes' booklet and return envelope, and posting out the above in a polythene package (88grammes) (£0.40+£0.16+£0.32+£0.40+£0.10+£0.58)	2.16
Total costs which could be avoided had the taxpayer, been steered to electronic communications by the first letter	£ 2.67
Assumptions:	
<ul style="list-style-type: none"> • £0.10 per posted item admin costs • Royal Mail franked item postage costs assumed (Royal Mail 2013) • Cost of £0.05 per printed page and £0.08 per page for the personalised form-set • All people who have to complete self-assessment forms as a result of the above policy are willing and able to complete assessments online. Given that all these people receive an income of above £50,000 and are of working age, this should be a safe assumption. 	

Conclusions

It is not just the central transaction, ie the payment, submission, return that should be steered to an electronic format, but all related communications. For new self-assessment taxpayers, the cost of not doing this is £2.67 for each submission, even if the final submission is made by electronic means.

Taxpayers should not just be given the option of electronic submission, but should be told to submit electronically, unless they are unable to do so. In the case of self-assessment, this would save £11 administrative costs for each submission.

Non-core activities such as responses to FOI requests should be made electronically unless there are exceptional circumstances. Responding to an electronically submitted request by posted letter costs an extra £1.55 (author's estimate) for each request.

HMRC's high volumes of some categories of transaction mean that small savings made for each category create significantly large overall savings, as shown in the above examples.

Some of the savings that can be made by moving to electronic communications are available by making procedural changes, without significant infrastructure or systems investment.

3.3 CASE STUDY 3

THE UK LIBRARY SERVICE AND THE EFFECT OF E-BUSINESS PRACTICES

Introduction and e-business practices in the library service

An interesting example of how e-business can transform the way that a public service operates is the UK library service. The wider ramifications and impact of the change in the nature of library services show how e-business is transforming the nature of this service.

E-business mechanisms allow library users to:

- replace their actual visits to the library with e-business practices such as downloading e-books, searching local archives or accessing information online
- enhance their usual library activity with electronic transactions and communications, eg accessing information about services (opening times, computer availability and the like); searching library catalogues; renewing loans; ordering inter-library loans; smart phones; and accessing local information.

The evolution of the library service due to e-business

Press reports issued in 2011 (Guardian 2011a) show that the replacement of library visits with e-business practices has caused concern, adding to the libraries' worries about the 'loss of footfall'

The lending of e-books, for instance, has pushed libraries towards the provision of a different sort of service. The 'Race Online 2012' campaign

(National Housing Federation 2013), led by the UK government's digital champion Martha Lane Fox, highlighted the importance of libraries in giving computer access to people who would otherwise lack it, allowing them to gain digital access to all manner of public services, including library services.

The change in the nature of the library service has become entwined in the debate calling for libraries to offer more freely available computer access for groups who do not have such access themselves. The over-65 age group and social housing tenants (70% of which are reported as never having been online) are specifically mentioned groups (BBC 2010).

In May 2012, the UK government introduced the 'future library programme' (Department for Culture, Media and Sport 2012) which, among other innovations, calls on libraries to 'take advantage of digital opportunities'. One of the areas seeking support from the DCMS is the initiative: 'Going Digital, Going Local; transforming libraries in Northumberland and Durham', which aims to link library resources with other council services to widen the services offered by libraries (Department for Culture, Media and Sport 2012). Libraries will be used to improve the IT skills of the community and to test 'how on-line borrowing challenges can be overcome'.

The library service has thus become both a potential victim of the e-business movement (as fewer people visit libraries because they can access books electronically), and a vehicle for widening online access to public services.

As a public service, libraries fall into the category of 'public goods' (Mankiw and Taylor 2006) by virtue of their social,

welfare-enhancing nature. Library services are freely available to all, as set out by the 1964 Museums and Public Libraries Act (Guardian 2011a). As public goods, libraries are provided by the state (via local councils), because they are deemed necessary for the welfare of the nation but would not be provided by the private sector. Library services must therefore be appropriate and available to benefit as many users as possible. Under the provisions of the Act, the secretary of state 'has a requirement to superintend libraries, ensuring that local authorities offer a "comprehensive and efficient library service to their residents"'.

Following concerns about a fall in the use of libraries (both visit numbers and books borrowed) in 2008/9, there was a parliamentary discussion on allowing free internet access in libraries in England and Wales by 2011 (BBC 2010), and a stated intention by ministers to 'impose a statutory ban on library charges for e-book rental'. At present, there is limited free access to the internet in libraries (commonly, the first half hour of access is free) and an increasing number of libraries offer e-book loans, with some also offering e-magazine rentals. The same debate also called for libraries to open for longer (including Sundays), and to be made more attractive to visitors, for example, by selling refreshments.

As an example of how e-book loans work, North Yorkshire libraries (North Yorkshire County Council 2013) allow library users to download up to 10 e-books at any one time, and then transfer them to various electronic devices. After the loan period, books are simply 'returned' to the library by the software used. The whole electronic process can be completed without readers ever having to set foot inside a library.

The benefits of e-business to libraries

The benefits of lending e-books for the effectiveness and efficiency of library services include:

- automatic return of books – the library does not have to chase for books to be returned or renewed, or suffer a loss due to theft or damage of books
- the transaction cost of lending e-books is lower than that of lending physical books – there is no requirement to bind the books, shelve them, stamp them, store them, or transport them physically between libraries
- inter-library loans are much easier to carry out and far less costly as books do not have to be posted; journal articles do not require copying and posting
- use of e-books allows a library with comparatively small premises to stock a wider range of books in a range of languages
- as more people own smartphones and tablet-computers from which they access e-books, by offering e-book loans the library service is simply reflecting the requirements of society.

E-book and e-journal lending has already had a big impact in academia, allowing students and academics to connect with university libraries, borrow and return books from a location to suit them, without the requirement for an actual visit.

Issues to be addressed

- The library service is concerned about the 'loss of footfall' in libraries. Services such as remote e-book lending can only exacerbate this problem.
- There is a perceived risk that e-books will be illegally copied. This may deter publishers from allowing their books to be lent as e-books in libraries (Neil 2013).
- Many books are still not available in electronic format, so the physical copies must be scanned if they are to be offered in this way.
- Although the move towards e-book lending may lead to a loss of footfall within libraries, it may mean that libraries reach a wider population, which accesses services virtually, out-of-hours. This may then lead these service users to access further public services remotely and digitally.

Conclusions

The prospect of a library without physical books, or even without actual premises is one that parts of the population are unwilling to accept. The move to the lending of e-books is a step towards this situation. E-book lending has radically changed the role of the library and the nature of the lending transaction. The demand for the use of publicly available computers to allow internet access for all presaged the change in the nature of library use.

E-business has significantly changed the library service, both in the way that demands are made, and in the nature of the service that is demanded. Both the library service and service users have greatly changed their respective habits of lending and borrowing books, and the role of the library and the use of library buildings have changed. These changes are still in progress.

4. Conclusions: how does e-business change the delivery of public sector services?

This chapter is split into four sections, each examining the provision of public services through electronic platforms (e-business) from the different viewpoints of online service users; offline service users; public service providers and the public sector as a whole.

4.1 SERVICE USERS WHO HAVE ACCESS TO THE APPROPRIATE TECHNOLOGY

The category of service users who have the means and the capability to access electronic services are referred to here as 'online users'.

Online users have easy access to information with which they can make a more informed choice of service provider, eg for health care, where service users can compare surgeons, hospitals and GPs on their clinical performance and choose the one they prefer (Guardian 2013). Such information is freely available on the internet.

E-business gives service users more control over how to carry out transactions with public service organisations, such as statutory returns and applications for benefits, at a time to suit themselves. The transaction costs of paying a council tax bill online, for example, compared with incurring travel costs and losing working time during the working day to pay at a bank or council offices, are therefore much lower for the service user.

E-business gives easier access and easier engagement with local issues and service provision. It allows the use of smarter options for service users wishing to submit complaints, ask questions or give feedback to service providers. Such communications, if

carried out electronically, are also usually cheaper and easier than when carried out by post, telephone or face to face.

Online service users can share ideas and experiences with each other using social networking and Web-based discussion groups. It is easier and quicker to lobby or to contact public service organisations electronically than it is to write letters, or organise written (rather than electronic) petitions.

There is scepticism among service users over issues of data security and safety following the much-publicised loss of child benefit data in 2007 (BBC 2008). Even though in this case the data was stored on computer discs that were lost in the post, it still posed questions of electronic data security, and what could happen if the data fell into the hands of criminals

Service users may be more likely to interact with public service organisations if to do so is quick, cheap and easy, as it is with e-business. Commenting on public services is also less confrontational when carried out by email, SMS or a social media channel, which may prompt more interaction. This gives public sector organisations more and better information about service users' requirements, as well as the potential for addressing a wider range of issues and receiving more questions and complaints.

For the service user, electronic communications also have the advantage over telephone calls and face-to-face discussions of leaving an electronic record, which can be referred back to if required. Notifications of appointments can also be transferred to electronic diaries.

The advent of e-business has meant that the opportunity to interact with public service organisations face to face is becoming more limited. HM Revenue & Customs, for example, closed several local tax offices in the year 2010/11 (HMRC 2010), as users have moved to 'Digital by Default' interactions with that department.

Service users' perceptions and expectations are likely to change in line with a greater use of e-business. Public sector organisations presenting a professional, slick, accessible online presence may create an image among service users that they are responsive and business-like, with services tailored specifically to user requirements.

In summary: e-business interactions with public service organisations have transformed service users' experience of accessing public services by cutting transaction costs, increasing flexibility, enabling a greater flow of information, giving greater choice in some cases, and allowing for better engagement with the organisations that provide the services. E-business may also raise service users' expectations and demands.

4.2 SERVICE USERS WHO DO NOT HAVE ACCESS TO THE APPROPRIATE TECHNOLOGY

Service users who cannot have online access are referred to here as 'offline users'. These service users may believe they have been disenfranchised or left behind by the organisations with which they need to interact, as these organisations encourage their service users to move to digital interactions through an 'assisted digital' programme.

After local office closures, offline users may have to search harder or travel more widely to find face-to-face opportunities for dealing with public sector organisations. Thus the transaction cost for this category of service user may rise as an effect of the move to e-business.

The offline user may be forced to ask friends, family or others to assist them with their interactions with public sector organisations, which will again increase their transaction costs. They may experience frustration as they see public services such as libraries and council offices changing to provide more for online users. Thus as the online community becomes more engaged, the offline community may become less so. Consumer groups such as Age Concern have programmes of training and lobbying to address these issues (Age Concern (2012).

The collection of customer feedback, made easier by the use of digital channels, may mean that online users' experiences are represented more than those of offline users, from whom it is more difficult to collect feedback. It is much easier to encourage service users to complete a short online survey following the completion of an e-business transaction than it is to encourage an offline user to complete a similar paper-based feedback survey following a face-to-face or telephone transaction.

At the time of writing, in libraries and other public buildings councils still provide large amounts of paper-based information such as pamphlets covering local events, services and local education provision. There is no obvious evidence to suggest that this will not continue although some

organisations, such as the Post Office, HM Passport Office and the Driving Standards Agency, are moving towards a policy of giving out paper-based forms and information only on request, rather than providing piles of these documents in public areas for service users to take away. This move away from paper-based information and a 'by exception' policy of paper-based provision of documentation may make the offline user believe they have been marginalised and may disengage them from public service organisations.

In summary, the offline user is still well provided for, but consumer groups and public service providers are working to persuade service users to use e-business services where possible.

Offline users are increasingly likely to be faced with the use of a call-centre as the only option for addressing their needs. As public services move to outsource their call centre services to private sector organisations, frequently using more mechanisation and keypad options, callers are likely to experience higher levels of frustration and longer transaction times for completing these transactions, losing the reassurance and personal contact of a manned local office.

4.3 PUBLIC SERVICE PROVIDERS

All public sector organisations face budgetary pressures, and austerity measures prevail throughout the sector. 'Digital by Default' is not presented as a means of making cost savings, but as a vehicle for making services more effective, efficient and fit for purpose.

The move to e-business practices has initially involved routine transactions and information provision. The final

changes required for full 'Digital by Default', or a completely digital access to services, requires all services, even the more complicated and bespoke transactions such as answering FOI requests, exceptional visa applications and complicated library requests, to move to digital platforms. This will require further investment in IT systems and the development of the required staff skills.

Public service organisations must work hard to manage change well, to be prepared to make significant cultural shifts and to persuade the more reluctant workers to support the move to e-business practices. This requires an investment in developing new staff skills, recruiting specialist staff in some cases, and good and effective communication of change across the organisation.

Public sector organisations may choose to recruit from the private sector to bridge the skills gap required for the move to e-business (Lyon 2012). They may also choose to work in partnership with private sector organisations in some way (such as outsourcing, use of shared-service centres) to provide the necessary expertise for e-business services.

All the changes mentioned above amount to the need for a significant shift in the skills required by those who work in the provision of public services. Business partnering, commercial skills and more sophisticated IT skills have all been mentioned in Cabinet Office papers and discussions (Cabinet Office 2012, 2013). When austerity measures, leading to budget cuts and staff cuts, are being implemented, skills training and talent management become a lower priority as organisations fight to

preserve frontline services (Lyon 2012).

Public service organisations will have at their disposal large amounts of electronically captured data. The implications of this, for data security and civil liberties, as well as the potential for using this data intelligently, are huge. Data can be analysed to look at trends, to predict future service requirements and to link with other public service providers. These changes are already happening within some UK government organisations, as mentioned in Chapter 3. Ultimately, the UK public sector could sell data to the private sector. For example, health data could prove to be of great interest to, say, insurance or pharmaceutical companies. The ethical and civil liberties implications here are enormous and outside of the scope of this study, but the possibility of this happening will almost certainly be debated.

E-business adoption by public services has involved rapid change, especially the move to smartphone use. Public service organisations must continue to invest in order to keep up with such changes, for example in the provision of electronic data to smartphone users.

Transaction costs can fall drastically with the move to e-business, as shown in section 4. This enables public sector organisations to create surpluses, or to rely less on central government funding, as in the case of the Driving Standards Agency.

Public service organisations must continue to provide for the offline user and to ensure that transactions costs for their services to these users do not become prohibitively costly.

Where private sector organisations offer 'frequently asked questions' or 'FAQ's' on their websites, public service providers will probably be required to maintain a manned telephone helpline. Service users' questions will, in some cases, be very specific, rather than the generic FAQs that may be posed to a private sector organisation such as an online retailer. There may also be cases when the service user does not even know what their question is, and will need specialist advice and guidance. This may have to be provided by a human interaction rather than a website.

In summary, public sector organisations are all at varying stages of the adoption of e-business processes and a policy of 'Digital by Default'. Investment in effective change management, and in IT and staff skills development will be required on a continually evolving basis throughout and following the transition period. Public sector organisations may also choose to work more closely with private sector organisations to make the required changes. The benefits of the move to e-business are wide ranging, including cost savings, service development, greater efficiencies, better customer relations and more dynamic, responsive services. The benefits of easier linkage of services and better use of customer data are also to be earned.

4.4 THE PUBLIC SECTOR AS A WHOLE

The adoption of e-business methods has brought, and will continue to bring, efficiencies and financial savings as well as social benefits through greater and easier user engagement and the provision of quicker and more effective information to service users.

Lower transaction costs may be passed on to the service user in lower overall costs or, as in the case of the Driving Standards Agency, by freezing annual fees, or the savings may be merely contributed back to the public purse and lower the public sector borrowing requirement.

There are clear generational differences in the adoption of electronic access to services, with older generations, who have not experienced e-business in their workplace, adopting both private and public sector online services at a lower rate than 'baby boomers' and younger people (NAO 2013).

The rise in the use of smartphones and tablet computers to access online services and to communicate with public service organisations has been significant, with organisations that had previously assumed that service users would interact with them via their personal computers, adapting their e-business systems to cater for smartphone users instead.

E-business has generally meant that service delivery and communications have all become quicker, and often can be carried out in real time. The time lags associated with the handling of cheques, posting and receiving forms and letters, waiting until offices are open rather than sending a communication over the weekend or in the evening, can all be dispensed with. This has an implication for the efficiency and speed with which services can be both accessed and provided, but also creates an expectation that questions and demands for services made in this way will be responded to at similar speed. Such expectations must be managed appropriately by public service organisations.

E-business and the provision of huge amounts of information electronically have enabled service users to scrutinise more easily the organisations that provide public services. FOI requests, social media and the sharing of electronic information makes studies such as this project much quicker and more straightforward than they would be if only hard-copy information were used. E-business of services and information must surely, therefore, push public sector organisations to becoming more open and accountable to service users. It is difficult to separate the demand for greater accountability in public services from the availability of a greater amount of electronically available information.

4.5 FINAL CONCLUSIONS

The move towards e-business by the UK public sector, which has run at a differing pace between organisations, has led to a more sophisticated means of interacting with service users. It has increased accountability and transparency, and allowed for a better connection between government and the citizen, shifting power and control in the relationship towards the citizen.

E-business practices have great potential for reducing transaction costs even further, and bringing savings and efficiencies to services. The cost of doing this is the investment required in IT infrastructure, the development of new skills, and the required shift in organisational cultures to allow such changes to take effect. As technological changes continue, so does the potential for further exploitation of the benefits of e-business. This means that organisations must constantly look forward to the next change. E-business also brings new opportunities to save,

use and analyse data to benefit the organisation and the provision of future services.

Although public service providers will see the changes mentioned above, the service user, particularly the online service user, will see significant benefits. The transaction costs of dealing with public sector organisations will be lowered and the service user will have access to a wider range of information, presented in a flexible way, at a time, and in a way of their own choosing. This will enable the user to make more informed choices, to exercise greater control over their interactions with these organisations, and to be more engaged with and knowledgeable about them.

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