

CONSTRUCTING ELECTRONIC GOVERNMENT: THE CASE OF THE UK INLAND REVENUE

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Abstract

The term electronic government (e-Government) generally refers to the use of information and communications technology (ICT) to change the structures and processes of government organisations. Many governments world-wide have invested heavily in this agenda but there is a lack of clear case material which describes the potentialities and pitfalls experienced by organisations at the forefront of this change.

The department of the Inland Revenue has been at the forefront of this electronic government e-Government vision in the UK. The department has undertaken major attempts to re-engineer its interface with the UK citizen and other stakeholders. It has also suffered a number of highly publicised failures in delivering its services electronically.

This paper presents a case study of the process of 'constructing' e-Government experienced by this organisation. We place this organisation's attempts at ICT innovation within the context for e-Government within the UK. We also use a model developed as part of our research - the electronic government organisation - to help explain some of the potentialities and pitfalls in this area. In terms of this analysis we review definitions of e-government and call for a more holistic use of the term in the development of future strategy.

Track: e-Government

'To tax and to please, no more than to love and to be wise, is not given to men' Edmund Burke

1 INTRODUCTION

The UK government has invested heavily in an attempt to change the structures and processes of government through innovation with information and communications technology (ICT). The department of the Inland Revenue has been at the forefront of this electronic government (e-Government) vision. The department has undertaken major attempts to re-engineer its interface with the UK citizen and other stakeholders. It has also suffered a number of highly publicised failures in delivering its services electronically. In this paper we present a case study of this experience based upon published sources and use a model of the electronic government organisation to help explain some of the potentialities and pitfalls in this area. This leads us to review definitions of e-Government and call for a more holistic use of the term in the development of future strategy.

The structure of this paper is as follows. First, we describe some of the background to e-Government in the UK. Second we describe the key characteristics of the Inland Revenue and its development of an e-Government strategy. Third, we use a model of the electronic government organisation to help describe the implementation of the organisation's strategy. Fourth, we conduct an evaluation of the costs and benefits of this strategy. Fifth, we examine some of the difficulties experienced by this organisation in its implementation of e-Government. Finally, we analyse this experience in terms of the future strategy for e-Government in the UK.

2 ELECTRONIC GOVERNMENT

In this section we provide an overview of the background to e-Government in the UK.

Within a proposed national strategy for electronic local government in England, the term electronic government has been recently defined as *exploiting the power of information and communications technology to help transform the accessibility, quality and cost-effectiveness of public services, and to help revitalise the relationship between customers and citizens and public bodies who work on their behalf* (LGA, 2002).

In the words of a recent UK government paper:

The Government is committed to ensuring that the UK is placed to become a world leader in the new electronic age. It is essential that public services play a full part in this digital transformation. All tiers of government must be able to provide services that take advantage of the improved speed and efficiency of new methods of delivery in line with heightened customer expectations (DETR, 2001).

It is clear that policy makers see new technologies as the key both to re-engineering internal business processes and to re-shaping the relationship between citizens and service providers (Silcock, 2001). Ministers believe that ICT can facilitate service improvement by reconfiguring frontline services in ways that match the needs of service users' rather than the organisational convenience of producers. They expect services to become both more 'joined up' (NAO, 2002a) and more accessible – for example enabling them to operate outside of traditional 'office hours' (CabinetOffice, 1999). They also anticipate that electronic voting, combined with new methods of communicating with and consulting local people, will help to reinvigorate local democracy, increasing turnout in local elections and enabling more direct public participation in local decision making (Martin, 2003).

It is useful to distinguish between two dimensions of e-Government: vertically in terms of the level of government (central, regional and local) and horizontally in terms of the internal and external processes of government.

Horizontally, ICT is being used to re-engineer aspects of governmental processes and the relationship between government and the citizen and government and business – what Holmes (Holmes, 2001)

refers to as administration to citizen (A2C) and administration to business (A2B). The interface between government and citizen in terms of services such as tax collection and benefit payment and the associated use of ICT systems to deliver these services via government agencies seems fundamentally to echo the developments in the business-to-consumer (B2C) e-commerce and business-to-business (B2B) e-commerce areas. This we have referred to elsewhere as external e-Government (Beynon-Davies, Williams et al., 2001). The associated use of ICT to improve the efficiency and effectiveness of internal governmental processes echoes intra-business e-business (Beynon-Davies, 2002). This we have referred to as internal e-Government – what Holmes (Holmes, 2001) refers to as administration to administration e-government (A2A).

The UK Prime Minister announced in 1997 that by 2002, 25% of dealings with government should be able to be carried out by the public electronically. These targets were later revised in the Modernising Government White Paper (CabinetOffice, 1999) that initially set a target of 100% electronic service delivery by 2008. In March 2000 the Prime Minister Tony Blair announced that this target was to be brought forward. The government has now set a target that by 2005 all (100%) of government services that can be delivered electronically will be delivered electronically.

Critical to initiating the e-Government agenda was the creation of the Office of the e-Envoy in September 1999 and the appointment of the e-Envoy himself, Andrew Pinder, in January 2001. The Office has responsibilities across the whole e-agenda, particularly e-Commerce and e-Government.

In April 2000 the e-Government Strategic Framework (CabinetOffice, 2000) was published requiring all central government departments to produce e-Business strategies. These are intended to show how each department plans to implement e-Government and to achieve electronic service delivery targets. The first draft was required in October 2000. From July 2001 departments are required to report progress against e-Business strategies to the Office of the e-Envoy every six months.

A time-line of key events in the UK e-Government agenda is provided in figure 1.

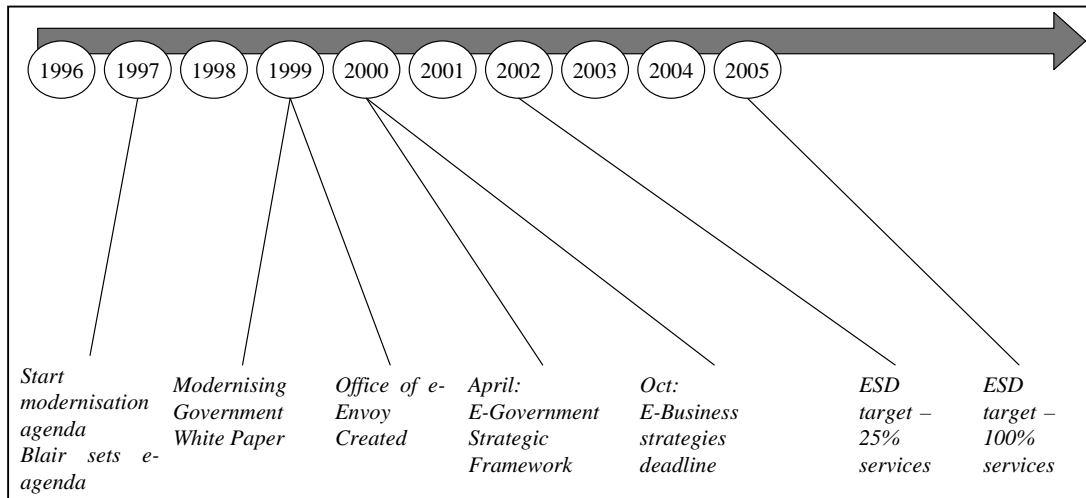


Figure 1: The Electronic Government Agenda

3 THE INLAND REVENUE AND ITS E-GOVERNMENT STRATEGY

In this section we begin to develop a case study of the experience of the Inland Revenue in the construction and implementation of its e-Government strategy. Benbasat et al (Benbasat, Goldstein et al., 1987) discuss the applicability of case study research to those types of problems where research and theory are at their early, formative stages. Case study research is particularly good at answering 'how' and 'why' questions: in our case, how an e-government strategy occurred and why this happened.

By studying problems in their natural settings case research allows us to understand something of the complexity of organisational processes and their interaction with ICT. The case study described here was built primarily through analysis of documentation provided by the organisation itself and other government agencies in the UK – so-called ‘grey’ literature. This was supplemented by material collected from the academic literature and the media.

The Inland Revenue is the UK government department responsible for the collection and administration of taxation. In particular it is responsible for:

- income tax
- corporation tax
- capital gains tax
- petroleum revenue tax
- inheritance tax
- national insurance contributions
- stamp duties
- collection of student loan repayments

In recent legislation the organisation has also been given responsibility for the payment of Working Families Tax Credit, Disabled Persons’ Tax Credit and Children’s Tax Credit. The Chancellor of the Exchequer has recently announced that the department will soon merge with the UK Customs and Excise creating a large, single agency for taxation matters.

The Inland Revenue has been involved in ICT innovation for a number of decades. In the 1960s it was involved in the development of a number of information systems in the early days of computer technology. Following problems experienced with its systems during the 1970s it undertook a programme of eliminating manual procedures and re-designing systems. In 1987 for example the department successfully implemented a system for the Computerisation of Pay As You Earn (PAYE). Margetts (Margetts, 1999) describes the Inland Revenue’s adoption of ICT until the mid-1990s as modest but successful.

Perhaps given this prior history it is not surprising to find that the Inland Revenue has attempted to position itself at the forefront of e-Government in the UK. The department is attempting to transform its performance using ICT. This is evident in much of the strategic thinking emanating from the leadership within the organisation. For instance, the current chairman of the board presents four indicators that the organisation will use to benchmark its performance over the next few years (Montague, 2002):

- The receipt of clean data from customers. This will allow the Inland Revenue to remove work activities that add little value to the organisation and consequently release people to work at the front line of customer care
- Increasing the organisation’s capability to deliver services electronically and increasing the take-up of such services by customers. The organisation has undertaken an ambitious programme of ICT innovation, particularly in the area of electronic service delivery
- Increasing use of knowledge management. This is seen as a way for the department to provide better guidance to its staff, which in turn will enhance the organisation’s customer service capabilities
- Better information and data management. This will enable the Inland Revenue to progress towards the "joined up government" vision described above. That is, to develop seamless, quality services and make best use of the data it receives

Electronic government is clearly central to the Inland Revenue’s vision. As an example of this commitment, the organisation has made a major investment in its web-site (www.inlandrevenue.gov.uk) for which the department won an award in 2000. This web-site currently has some 700,000 hits each week.

The Inland Revenue established its electronic service delivery programme (referred to as its e-services programme) in 1999. Overall responsibility for the programme rests with the director of its board. The director essentially has two teams concerned with e-Government issues reporting to him: a project management and delivery team for new developments and an e-business team managing the e-services that have gone live. The project management and delivery team work alongside the Inland Revenue's strategic partners such as Electronic Data Systems (EDS) and Girobank.

The department set out its first e-Government strategy (referred to as its e-business strategy) in 2000 (NAO, 2002b). The key features of this strategy were:

- The development of a number of electronic channels for different customer groups with clear incentives to encourage use of such channels. As part of this strategy the organisation intends to offer improved e-services to the UK taxpayer, thus reducing the burden of compliance on individuals and organisations
- The use of intermediaries such as the National Association of Citizens Advice Bureau, the Post Office and software suppliers to provide bespoke services to the customers of the organisation
- Greater integration of its services with that of other departments and the provision of its services through commercial and government portals
- Transformation of staff roles to focus around support for the customer through the use of electronic tools

In 2001 the Inland Revenue revised its strategy, keeping the fundamental principles described above but making the following additions:

- Transformation of the organisation around a focus on the customer and a philosophy based in customer relationship management
- Creating a technical framework which will deliver e-services in a modular but integrated fashion

The Inland Revenue has established three targets for its e-Government strategy:

- 50% of services will be available electronically by 31st December 2002. By this time the organisation aims to offer basic secure e-services and have developed plans for organisational change based on such services
- 50% take-up of its services by 2005. By 2004 the organisation aims to have significantly increased take-up of its core services and have delivered significant benefits from such services
- All its services will be available electronically by 31st December 2005. By this date the Inland Revenue aims to have achieved significant business transformation with most customer transactions being conducted electronically

4 THE E-GOVERNMENT ORGANISATION

In this section we use a model of the electronic government organisation to help describe the implementation of the Inland Revenue's strategy.

The key message being promoted in the e-Government agenda is that ICT is an enabler for organisational change focused around the re-design of the delivery of services and products to key stakeholders – customers, suppliers, partners and employees. Hence ICT is seen to offer the potential for more effective and efficient delivery of value along supply, customer and internal value-chains (Porter, 1985). What we have called internal e-Government above is mainly an issue concerning the internal value-chain of public sector organisations. In contrast, ICT enablement of the customer and supply chains is an external e-Government issue.

Figure 2 illustrates elements of the technical infrastructure for e-Government.

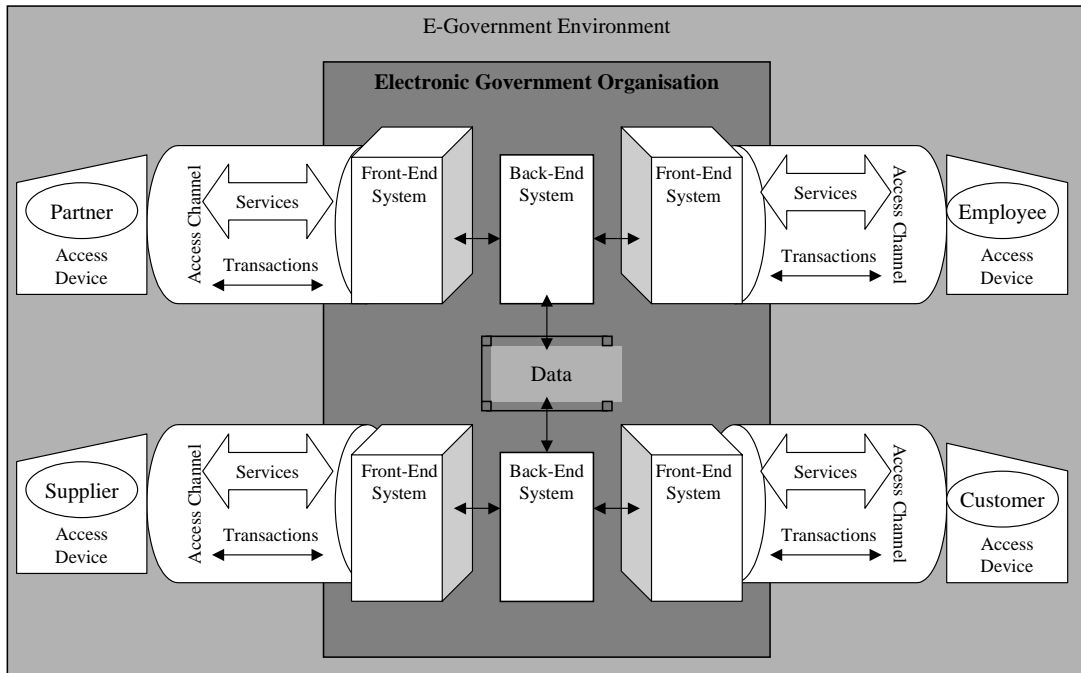


Figure 2: The Technical Infrastructure for E-Government

The objective of re-designing governmental processes around ICT will involve:

4.1 Identifying key areas for Electronic Service Delivery

ICT is being promoted within government circles as a means of improving the performance of service delivery to internal and external stakeholders. A key distinction is essential between services and transactions. Services are end-points of business processes (Hammer, 1996) or human activity systems undertaken by organisations (Checkland, 1987). Information is needed to support most human activity systems particularly in terms of transactional information. Transactions are ways of recording service delivery and hence are the essential raw data for modelling organisational performance. Performance management systems cannot work effectively within organisations without transactional data. Reducing transaction costs is also seen as the typical way of introducing cost savings with ICT.

Much of the effort made by the Inland Revenue has been devoted to re-engineering key aspects of its customer chain. The department's e-Services strategy identifies a number of core customer-facing services that it sees as common to its major customer groups. Table 1 identifies for each generic service the current method of provision and the opportunities afforded by electronic service delivery.

Customer Interaction	Current Provision	E-Services Opportunity
Establishing entitlement of liability	Filing paper returns; Electronic Data Interchange (EDI); Assessment	E-Filing (and EDI); Data Transfer
Registrations and cessations	Complete and submit form	E-filing; E-Mail
Changing personal circumstances	Notification by phone or mail; Changes made to corporate systems	E-mail and e-forms; Direct amendment
Clearances and approvals	Notification by mail	E-mail and e-forms
Case investigation	Face-to-face; Paper files	E-mail; Shared access to documents

Customer-specific enquiries	Phone and mail	E-mail; Access to own records; Shared access to documents
Advice and guidance	Phone and mail publications	Self-serve; E-Mail

Table 1: Key customer-facing services

4.2 Investigating and implementing various access channels for different stakeholders

In terms of interaction with the customer face-to-face contact and telephone conversation are two of the most commonly used channels for accessing the services provided by UK government agencies. However, with an eye on the longer-term, many public sector organisations are either implementing or investigating access channels that allow customers to interact with the organisation remotely. The aim is to provide access to services 24 hours a day, 365 days a year.

Remote access channels consist of access devices and communication channels. Access devices include the Internet-enabled personal computer (PC) and interactive digital television (iDTV). There is a general inter-dependence between access devices and communication channels. Access channels are conduits for the delivery of certain services and the recording of transactions. Hence, most home-based PCs connect to the Internet using the telephone network and a modem.

Clearly, certain access channels can be used in correspondence with traditional face-to-face access by employees, such as in the case of customer contact centres. However, in the medium term government agencies will have to support a number of different access channels, both traditional and remote because of concerns over differential access to electronic service delivery.

The department's e-Services strategy recognises a number of different groups of customers including:

- Large and small businesses
- Individual taxpayers – PAYE and self-employed
- Students/graduates
- Senior citizens

There is a recognition that services need to be tailored to meet the needs of different customer groups. The department is building a customer relationship management (CRM) strategy based around segmentation of customers and services.

4.3 Re-engineering or constructing front-end ICT systems to manage customer interaction.

Front-end ICT systems within organisations are converging on Internet and Web-based standards. Because of the increasing use of such technologies, major investment is currently being undertaken by public sector organisations to increase levels of interactivity on their Web sites. The aim for many organisations is to provide fully transactional Web sites in which customers can undertake a substantial proportion of their interaction with an organisation on-line.

In the e-Services strategy, the department envisages a multi-tiered customer contact framework. The primary contact will be through self-service facilities accessible through the Web or iDTV. This will be supported by successive layers of email, telephone, face-to-face and paper-based support. One of the first innovations in this area is an Internet service for electronic submission of self-assessment returns (see below).

By April 2001 some 30% of the Inland Revenue's services were available electronically. By mid-2002 the organisation had:

- Developed a range of Internet services. These services include providing forms and guidance on-line, allowing individuals to submit their self-assessment tax returns electronically, employers and their agents being able to send their end of year returns electronically, individuals and organisations

- able to pay outstanding tax amounts via the Internet to the department
- Developed a range of EDI services. Such services enable the department to send and receive large quantities of data securely and efficiently. One example of the use of such technology is the transfer of PAYE tax details from organisations to the Inland Revenue
 - Developed a range of support services. These include a customer support help desk and a third party validation service. This latter facility aims to encourage the private sector to develop electronic tax services for customers that are compatible with the Inland Revenue's systems

4.4 Ensuring front-end/back-end ICT systems integration

To enable fully transactional Web sites, the information presented needs to be updated dynamically from back-end databases. Also, the information entered by customers needs to update the organisation's information systems effectively.

In its own review of services the Inland Revenue has identified that customers want quick and easy fulfilment of tax returns as a priority. For this to occur on-line fulfilment of tax returns is essential. However, on-line fulfilment of electronic forms must be supported with integration to back-end systems. For example, on-line users are frustrated by needing to enter standard details such name and contact details for each interaction with the department. Using the unique identifier of the tax reference number should automatically update key fields from back-office systems. Some progress has been made in this area. For instance, in utilising a standard reference number for accessing a range of government services via the *Government Gateway* – a portal to a limited set of UK government departments.

4.5 Re-engineering or constructing back-end ICT systems

A key focus within the e-Government agenda is on re-engineering service delivery around the customer. Hence, for example, when a customer enters personal details such as their name and address into one system this information should ideally be available to all other systems that need such data.

To support front-end/back-end integration the e-Services strategy of the Inland Revenue recognises the need to produce an infrastructure capable of supporting 'customer-centric' records. This will permit the department to obtain a single view of a customer's overall position with respect to payments and entitlements and also allow them to maintain a full contact history.

4.6 Sharing Data and Services with Partner Organisations

As described above, much emphasis is made in the UK central Government literature of so-called 'joined-up thinking'. In e-Government terms this translates into sharing data with key government partners and providing 'one-stop shops' for key government services. It also refers to the use of intermediaries both in the public and private sector as a means of delegating key aspects of service delivery.

The Inland Revenue has acknowledged that it has a long way to go in terms of sharing data with key partners and providing joined-up services with other agencies. Examples of cross-working include collaboration with the Department of Work and Pensions in the provision of information required for New Tax Credits and discussions with HM Customs, the Department of Trade and Industry and Companies House based around business life events.

The Inland Revenue e-Government strategy also discusses a critical role for intermediaries in providing services on behalf of the department to customers. For instance, the Post Office, Citizen's advice Bureau and banks are envisaged as offering advice and services on a range of taxation issues.

5 THE COSTS AND BENEFITS OF E-GOVERNMENT

In this section we conduct an evaluation of the potential costs and benefits of this strategy while also considering some of the practical issues of implementation.

A number of benefits to the organisation are expected to arise from the take-up of e-services. These may be categorised in terms of efficiency gains and effectiveness gains. Such gains are summarised in table 2 below.

Efficiency Gains
The capture of data using on-line forms may include sophisticated validation of data entry. Hence, many of the typical mistakes made by customers filling out such forms can be corrected at the point of entry
More accurate data collected from customers means that less administrative checking is required. Also, fewer queries to the organisation are to be expected
E-Services are likely to lead to faster processing of tax returns and associated payments
The consequence of less administration is possible savings in staffing. The department estimates that a saving of £3 administration per return is feasible. The organisation also estimates that when take-up of e-Services reaches 50% then savings of some 1300 posts are likely, freeing up staff to be employed in other areas, most notably in the front-line of customer care
Savings are also likely in the cost of transactions such as provision of information to customers. Banks charge electronic transactions at a lower rate. Also, if sufficient numbers of people can be encouraged to use the organisation's Web site for common information significant savings in postage may be made in sending paper-based leaflets
Margetts and Dunleavy (Margetts and Dunleavy, 2002) argue that cost-savings should be passed on to the customer in order to ensure a virtuous cycle of interaction between the e-government organisation and the customer
Effectiveness Gains
The Inland Revenue can offer e-Services 24 hours a day 365 days a year
Customers are able to receive automatic confirmation of the receipt of returns and payments. This is not available to postal returns and payments
The mass take-up of e-Services would enable the Inland Revenue to deploy more people to the front-line in support of the customer. The hope is that this will enable the department to resolve the majority of customer problems at first interaction (Inland_Revenue, 2002)
Eventually the completion of tax forms should prove easier and quicker for customers on-line once the organisation can fill in many fields automatically from back-end systems. On-line forms can also ensure automatic calculation of monetary values
The Inland Revenue has plans to introduce personal portals for taxpayers. This will enable an individual not only to complete and submit their tax return electronically but also to track progress of their tax assessment and to receive automatic notification of entitlements and payments

Table 2: Efficiency and Effectiveness Gains

The cost of implementing the Inland Revenue's e-Government strategy is less easy to determine and is crucially tied-up with the outsourcing of ICT expertise undertaken by the department.

Prior to 1994 the Inland Revenue maintained an internal informatics service (the Information Technology Office - ITO) employing some 2,600 staff, a budget of £250 million per annum and operated out of 13 regional computer centres (Margetts, 1999). On 23rd May 1994 the department signed a contract with EDS for the delivery of ICT services. Since that date all computers and information systems used by the ITO are owned by the outsourcing supplier. Most of the ITO staff transferred over to EDS.

Tyndale (Tyndale, 2002) reports that the Inland Revenue undertook the biggest outsourcing contact in UK government with EDS in 1994. Worth £2.8 billion over ten years the contract is directed at upgrading the internal e-Government infrastructure of the department. As part of this programme EDS has installed 55,000 workstations running Microsoft office and other software at a cost of £200M. It is reported elsewhere (NAO, 2002b) that the department expects to spend some £200 million between April 2001 and March 2004 developing its electronic service delivery capability. However, because of problems of implementation (which we discuss below) questions have been raised over the cost-effectiveness of current electronic service delivery. For instance, in terms of current investment and take-up, the cost of submitting a tax return electronically for each individual in 2002 was £212. The cost of submitting a self-assessment return to the department via the conventional postal route was £60 (Tyndale, 2002).

6 DIFFICULTIES OF IMPLEMENTING ITS STRATEGY FOR ELECTRONIC SERVICE DELIVERY

The Inland Revenue has experienced a number of difficulties in implementing its e-Government strategy. These difficulties may be divided into those difficulties experienced in relation to technical implementation of its infrastructure for electronic service delivery and those relating to the take-up of electronic service delivery by the organisation's stakeholders, particularly taxpayers in the UK.

In April 2000 an Internet Service for Self Assessment was released on time by the development team at the department. However, the organisation suffered adverse publicity when many customers expressed difficulty in using the service and particularly problems in submitting completed returns. Therefore in November 2000 the Inland Revenue commissioned a review of this service by an independent consultancy. Key issues from the report of this consultancy included:

- During the initial rollout of the system many potential customers found it difficult to register to use the service because they did not know their tax reference number
- On average four out of five attempts to submit completed tax forms electronically failed
- The software required to complete the tax return was initially distributed by CD-ROM through the post. This made it difficult to update the software when fixes or additional features were required

As a result of findings such as these the Inland Revenue overhauled the Internet Service for Self-Assessment system and produced a service based on on-line forms for the 2001-2002 assessment period. Consequently, the rate for successful completion of such forms increased to 70% by December 2001. However, the Inland Revenue decided to suspend this service in May 2002 after a security breach. Users had told the organisation that after logging on they had access to other people's tax details. The service was eventually restored at the end of June 2002 and now appears fully operational.

Other facets of electronic service delivery at the department have also experienced problems. For instance:

- Tax Credits. In October 2002 the Inland Revenue sent material through the post to taxpayers requesting them to fill out a form to claim tax credits. The letter accompanying this form indicated that information requested could be provided on-line. However, the Web-site for tax credits advised people that on-line capture was not available and that they should use the paper form instead. The system was also later blamed for a situation in which thousands of customers experienced delays to their tax credit payments.
- Electronic Mail. Besides electronic submission of forms, the Inland Revenue has investigated the

provision of email communication to its customers. However, it has currently suspended provision of such a service because of 'security' issues. In piloting such a service difficulties were experienced in linking all the emails for a particular customer. Also, it proved difficult to authenticate the details of individuals and organisations wishing to email the organisation. Margetts and Dunleavy (Margetts and Dunleavy, 2002) argue that widespread use of email challenges formal notions of how government correspondence should be dealt with. 'It seems unlikely that government officials will become comfortable with the idea that an email address is 'official' enough to be appropriate for government communications'

The Inland Revenue's E-Business strategy is clearly founded on large numbers of people utilising e-services to interact with the government department. The actual against planned take-up of such services currently is disappointing. For example:

- Some 39,000 individuals used the Internet service for self-assessment in 2000-2001 to file their tax return for the 1999-2000 period. This compares to a planned take-up of 315,000
- The projection for submission of the 2000-2001 tax return was 200,000 by 5th April 2002. As of 4th January 2002 only 50,125 people had submitted their returns electronically with some 80,000 people having used the service in some form in this tax year

7 CONCLUSION

The Inland Revenue is frequently cited as being at the forefront of the UK government's e-Government agenda. Much of the future efficiency savings announced by the Chancellor of the Exchequer (10,500 jobs to be lost in merger with customs and excise) is predicated on e-Government change. However, like most government organisations in the UK the focus of its initial e-government strategy has been on electronic service delivery to mass customers. This is clearly in reaction to national targets established by UK central government with the aim of improving the status of the nation as an information society.

This focus on enabling the department's customer chain and creating key aspects of electronic service delivery is only part of e-Government. In presenting a model of the electronic government organisation we have attempted to present a holistic view of e-Government. Hence, of equal relevance to fulfilling the e-Government agenda is back-end integration of information systems, customer-centred information systems, back-end/front-end integration of systems to provide added-value interaction and electronic service delivery to other stakeholders such as suppliers, partners and employees

Each of these facets of e-Government is echoed in a recent key report published by the National Audit Office (NAO, 2002b) on the e-Strategy of the Inland Revenue:

- Back-end integration of systems around customers. E-government change is not just technology change but organisational change. It particularly demands a greater customer-oriented focus from government agencies. E-government plans are clearly tied to performance improvement. Efficiency gains such as estimated savings of 1300 posts over the long-term as well as effectiveness gains from e-revenue services (greater accuracy of data, less need for checking, less customer queries) are clearly critical to the organisational strategy of the Inland Revenue
- Back-end/front-end integration of systems to provide added-value interaction. A number of pre-conditions remain to be satisfied for successful electronic service delivery. Critically, interest in participating in such electronic services remains questionable among key stakeholder groups. The expectation is that e-services will not be taken up unless they provide added value to the customer in terms of such things as simplified forms where much of the customer information is filled automatically. Access amongst different interest groups is also a concern and there is little current evidence of impact from electronic service delivery
- Prioritising Service delivery and considering other stakeholders such as partners and employees. The initial target set for the Inland Revenue of 50% of business being done electronically by 2005

is now seen as unrealistic. Planning within the department now appears to consider prioritisation of systems in terms of greatest benefit and take-up such as EDI PAYE from large firms

The implementation of new technologies within government not only presents new challenges for policy makers and practitioners, it also provides an important new, and as yet underdeveloped, research agenda. In spite of its centrality to the current drive for public service improvement in the UK, the adoption of new technologies has not attracted a level of attention from researchers, which matches its significance. This is a significant gap because while some of the lessons of research on impact of new technologies in the private sector are likely to apply to the public sector there are important differences between government and business. There is therefore a need for an understanding of the dynamics of change and challenges specifically associated with e-Government and its likely impacts on the internal and external processes of government. This implies longitudinal tracking of departments' e-government strategies and the links between these and other elements of the 'modernisation agenda' involving in-depth investigation of the ways in which strategies are implemented and the enablers and barriers to the wider adoption of ICTs. This must be achieved from a variety of different perspectives including politicians and the public as well as service managers and ICT specialists.

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