Public Value and E-Government

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Acknowledgements

About the author

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Executive Summary

Why should we use the public value concept in relation to e-government?

This paper is written in the belief that improved use of Information and Communication Technology (ICT) is an important element of public service reform and is prompted by growing concern that the momentum of the e-government project is slowing. E-government is too often talked of as if it is only the process of mechanically putting existing services online meaning that many of the benefits of broader ICT use are not taken into consideration. At the same time, much of the evaluation of e-government that is conducted fails to provide the kind of evidence of benefit that is required to make a real impact on mainstream policy debates.

It is for these reasons that the use of the concept of public value in relation to e-government has much to commend it. As an analytical framework referring to the value created for citizens by government, public value can be used to aid decision making, to assess performance and, in the e-government context, to provide a bridge between the technology and wider policy communities.

Public value has three important sources. First, public value is created by the delivery of high quality services. Perceptions of services are driven by a series of factors such as their availability, the satisfaction of users, the perceived importance of the service and the fairness of its provision and finally its cost. The second source of public value is the achievement of outcomes that are seen as desirable by the public such as improvements in health, reduced poverty or environmental improvements. Finally, trust in public institutions is an important source of public value, making citizens more likely both to accept government action and to feel a sense of association with it.

When translated into the context of e-government, this understanding of public value leads to a set of key criteria against which levels of success should be judged:

- The provision of services that are widely used
- Increased levels of user satisfaction with services
- Increased information and choice available to service users
- Greater focus on the services that the public believes are the most important
- Increased focusing of new and innovative services on those most in need
- Reduced costs of service provision
- Improved delivery of outcomes
- A contribution to improved levels of trust between citizens and public institutions

Use of the public value framework in relation to e-government is likely to be useful for two reasons. First, criteria of success such as those listed above are likely to help mainstream the use of ICT in the delivery of public services more effectively than current targets. Second, more complex thinking about the benefits that e-government can deliver should lead to a more effective process of evaluation, and therefore a more coherent body of evidence of the benefits of improved ICT use.

What has been the impact of e-government on service quality?

While evidence of the impact of the use of ICT in the delivery of public services is patchy, it remains worth examining the impact of e-government on six drivers of perceptions of services:

- The improved provision of *information* can be seen as an e-government success story as the government has used its web sites to provide citizens with information on issues as diverse as the performance of local schools and hospitals, job opportunities and pensions and other benefits.

- However, while more information is available online levels of *take up* remain unclear. What evidence there is suggests that take up rates are low, making it unclear whether citizens find e-services valuable.

- While citizens are increasingly able to access services using their PC, television or telephone, wider attempts to increase the level of *choice* available to citizens have stalled. In particular, while the government has stated that it wants to enable the delivery of e-services by intermediary organisations, little progress has been made in practice.

- In terms of citizen *satisfaction*, the picture is also mixed. While two thirds of the population are prepared to use electronic services, this enthusiasm does not translate into actual behaviour. However, there is international evidence suggesting that e-government can lead to improved perceptions of public services.

- Given that there seems to be a link between the *perceived importance* of a service and satisfaction with it, the focus in debates on e-government on web-based transactional services rather than on ICT use in the delivery of core public services such as health and education is a presentational error likely to lead to the undervaluing of e-government activity.

- The *fairness* of service provision is unlikely to have been enhanced as e-government activity has not been focussed on the most excluded or service reliant citizens. Uneven levels of access to the internet may actually make access to services less equal as the use of e-government becomes more widespread.

Though necessarily drawn on the basis of thin evidence, these conclusions suggest that while there have been some successes, such as the increased amount of information available to

citizens, in areas such as take up and fairness, greater use of e-government has yet to deliver convincingly.

Has e-government led to cost reductions?

It is certainly reasonable to expect that increased e-government activity might lead to increases in public value by way of cost reductions. Savings might be made because of reductions in paper or printing costs, in the time spent dealing with enquiries or because transactions might be fully automated for example.

While there is not a huge amount of reliable evidence yet available that demonstrates cost reductions that have arisen from improved use of ICT in specific projects, there are some examples from both the private and public sectors indicating that they are possible. In addition there have been several studies looking at *projected* savings, which have concluded that future savings could be considerable. However, it is important to note that it may take some time before the savings delivered begin to exceed expenditure on e-government.

There are three points that should be borne in mind in relation to the implications of e-government for cost. First, savings will not be automatic and will require effective planning, realistic assessments of likely take up and the closure of old channels where necessary. Second, estimates of savings should take account not only of the savings that are possible within individual organisations but also of those that might result from increased use of shared services or the merging of departments. Finally, it is important not to focus on cost savings to government as the principle aim of e-government to the exclusion of cost savings or wider benefits that might accrue to citizens or businesses.

Is e-government helping achieve core service outcomes?

Again, evidence of the impact of improved ICT use on desired outcomes is patchy. However, in each of the important areas of health, education and transport there is a positive story to tell.

In the case of education there is emerging evidence that ICT is helping the government to achieve some of its key aims. First, in relation to the development of basic skills, it has been found that basic skills learners find the use of ICT motivating and believe that it helps them learn. Second, there is evidence from evaluations of learndirect that the use of new technology has helped to widen participation in education with users of learndirect more likely to be female, older and less qualified in comparison with the overall population of learners. Research commissioned by the Department for Education and Skills has also shown that use of ICT in schools can lead to increased educational achievement.

While many of the projects using ICT in the delivery of healthcare are at too early a stage to provide robust evidence of an impact on outcomes, there are some indications that ICT may play a positive role. This might be by providing clinicians with better information about the patients that they are treating using electronic records or about conditions and treatments using services such as the National electronic Library for Health. Trials where electronic records were shared with patients suggest that this could lead patients to monitor their own health more effectively which might then lead to improved outcomes.

A positive story is also emerging in transport. The London congestion charging scheme, though heavily reliant on technology both in order to capture the details of vehicles entering the zone and to charge users, is not often described as an e-government project. However, while it is still relatively early to judge its wider effects, some clear benefits have been seen as a result of this heavily technology reliant project. Fewer trips are now being made into the charging zone and the average speed of traffic has increased.

These examples constitute a good news story for e-government with ICT beginning to add public value in all these areas. However, it should be noted that failure to properly evaluate ICT related projects means that it remains difficult to make the case convincingly.

What impact has e-government had on trust?

We know very little about the impact of e-government on trust, not least because we know relatively little about what drives trust in institutions at all. What we can say is that it is likely that e-government presents both threats and opportunities in relation to trust. First, issues related to the security and privacy of citizens' information have the potential to undermine trust in government. If these threats are managed properly, however, then e-government may actually increase trust, both through improving the quality of services and the perceived competence of government and by using new tools of e-democracy to enhance democratic processes. Clearly however, there is more research to be done if we are to understand the relationship between e-government and trust.

What barriers are there to the delivery of public value through e-government?

While in some areas it is clear that e-government is adding public value, in many cases the evidence is unconvincing. If the perception that government ICT projects are often a waste of money is to be overcome, we need to understand the barriers which have meant that more public value has not been added. These barriers fall into four groups:

- There are problems with the strategic policy framework that has been set for e-government. For example, the target of making all government services available online is likely to have diverted efforts towards the mechanistic process of putting services online and away from more innovative and possibly effective uses of ICT. Under-resourcing of

change management, an excessive focus on cost reduction rather than a wider set of benefits and the failure to provide appropriate incentives for public servants may also all have acted as barriers to the delivery of public value.

- There has been insufficient effort to reward innovation. Government is not always best placed to spot new opportunities to add public value and it has not been made worthwhile for those outside government to do so.

- There has not been sufficient power at the centre of government to co-ordinate approaches to e-government in order that they should have maximum effect. Not only has there been a lack of power at the centre but responsibility for improving use of ICT has been split between several different organisations.

- Finally, the continued belief that government itself should be the sole provider of public services remains a barrier to progress. The public value that might have been added through the private and voluntary sectors, had a mixed economy in e-services been allowed to operate, has been missed.

How might these barriers be overcome?

In order to overcome these barriers the government should now:

- Replace the target to have all services on line by 2005 with new public value targets for all major ICT investment projects.

- Invest more in the business change processes implied by many major ICT programmes to ensure that it is not only the ICT that is delivered but also the service quality improvements, the efficiency gains, and the improved outcomes which justify the ICT investment in the first place.

- Begin to introduce public service workforce structures that encourage individual civil servants and frontline service workers not only to take responsibility for delivering public value but also reward them for doing so, both financially and in terms of career advancement.

- Make the new Head of e-Government more powerful than the previous e-Envoy and locate it within the Treasury rather than the Cabinet Office.

- Increase the take-up and 'fairness' of e-government services through the increased use of private and voluntary sector intermediaries with good links into hard to reach groups.

- Create an ICT and Public Sector Innovation Fund to reward public service related innovation in the private and voluntary sector.

- Deal with the value measurement problem by improving both current data on costs and by quantifying many of the non-cost benefits that come from ICT and e-service investments to allow sensible cost-benefit and return on investment assessments to be made.

- Collate as much evidence of public value added through e-government as possible and make this available on a best practice website backed up with detailed case study material.

If this overall package of measures is introduced, the chances of increasing the public value evidence base and of changing the climate around public sector ICT will markedly increase. Without such measures, those who wish to see the public services radically scaled back will hold up this genuinely important piece of public service modernisation as a failure.

Chapter 1: Public Value and E-Government: A Long Overdue Introduction

Context

Two features of the e-government landscape currently stand out. On the one hand, there is the prevailing perception that most if not all public sector ICT projects end in disaster. This is not new, but neither is it going away, and it is damaging to the entire e-government enterprise. On the other hand, senior figures associated with the agenda inside government, such as the e-Envoy, are moving on and key target dates, such as that to get all services on line by 2005 will soon be upon us and will need to be replaced. There is, in this context, both a need to do something to change the climate around e-government and an opportunity to debate the required direction of change given that change is happening anyway.

This paper is offered as one contribution to the wider debate. It is written both in the belief that successful e-government is important to public service reform and in the frustration that the impetus behind it may be weakening because a lot of the progress goes largely unnoticed. The paper argues that much of what is currently wrong derives from the inadequate way in which e-government is defined and evaluated. Too many people discuss e-government as if it meant nothing more than putting services online. Important activity, such as the use of ICT by teachers in the classroom or the use of ICT on the ward or in the GPs surgery escapes their attention. Similarly, much evaluation work on e-government turns up little of relevance for key policy issues and debates. The problem here is not simply that our evaluation frameworks are not good enough or not deployed often enough. It is that the things we choose to measure are not things which demonstrate the relevance of e-government to all those who care passionately about the future of the public services.

It is worth illustrating this point by considering the Booz Allen Hamilton report of November 2002, *International e-Economy Benchmarking: The World's Most Effective Policies for the e-Economy,* which received much attention on publication and provided a wealth of comparative data on the performance of G7 countries on the e-agenda.[i] This report used a broad definition of the e-economy that was inclusive of e-government. The e-economy was defined as 'a dynamic system of interactions between a nation's citizens, businesses and government that capitalises upon online technology to achieve a social or economic good.' Progress was defined by reference to four sets of criteria, namely the general e-commerce and e-government climate, the readiness of firms and citizens to engage with new technology, levels of take up of online services, and impact.[ii] This was all reasonable enough. However, if we look more closely at how impact on government in particular was defined and measured, we see that it was defined as 'the impact of online technology on government itself rather than

impact of government policy on third parties.[iii] In other words, we were asked to accept changed processes of government as the benchmark of success, rather than to look for ICT facilitated improvements in the things that government is there to deliver, such as healthcare, education, reduced social exclusion, and increased trust in and engagement with public institutions. Similarly the UK National Audit Office report, *Better Public Services Through E-Government,* though much better as a result of defining e-government success in terms of choice, convenience, efficiency and speed, also suffered from either an unwillingness or an inability to link e-government activity to the attainment of desired outcomes.[iv] Others still, and perhaps even the majority, have fallen into the same evaluation trap and the problem is a serious and dangerous one. For its effect is to define e-government as something separate from the rest of government on the one hand and to divorce notions of e-government success from the real outcomes we seek as a society on the other. This, in turn, reinforces a sense among wider public policy elites that the real business of government and politics is going on elsewhere and that e-government can be left as a niche debate.

It is a key assumption of this paper that an application of the concept of public value to e-government has much to commend it given this context. As a term, public value refers to the value created for citizens by government and as a fully developed analytical framework it is a set of insights into what it is that citizens value. It can be used both as an aid to judgement by governments when deciding what activities to undertake and as a yardstick against which to assess government performance. In the e-government context, it can also form an all important bridge between the technology community and the wider policy community. To understand how, it is necessary to briefly set out a few of the key ideas associated with public value thinking.

Public Value

In their Strategy Unit paper, *Creating Public Value*, Kelly and Muers identified three important sources of public value.[v] These are high quality services, outcomes and trust and each is dealt with in turn below.

High Quality Services

Perceptions of high quality services are themselves said to be driven and shaped by five underlying factors. These are:

- *Service Availability:* Citizens often derive benefits from the consumption of public services in much the same way as they derive benefits from the consumption of private sector services. This is because some public services, such as programming on public service broadcasting for example, are not inherently different to their private sector equivalent, but also because many services, such as the health service, are experienced individually even in the absence of competition in their delivery. Services obviously have to be

available to add value, but equally a good test of whether users think they add value is the level of take up. After all, accessing public services comes with an opportunity cost, whether that is in the form of time taken to interact with a service or in the form of taxes paid. Consequently, if services have good levels of take up then that is a positive sign that citizens believe they are adding public value.

- *Satisfaction Levels with Services:* Assessments of quality are based on a number of factors but chief among these is user satisfaction with the services they have experienced. We are no longer in a context in which people are simply willing to accept a service largely because they are grateful that it is there at all. Moreover, user satisfaction can be as important as actual outcomes in determining perceptions of service quality and satisfaction is itself driven by factors such as quality of customer service, level of information available and the degree of choice in how to access and make use of a service. The better the customer care, the greater the quantity and quality of information available on a service, and the higher the degree of choice, the higher the satisfaction level with a service is likely to be.[vi] Research published by the Prime Minister's Strategy Unit in 2001 drawn from the banking sector reinforces at least some of this view. Key factors causing satisfaction include attentiveness and helpfulness of staff, friendliness and responsiveness of staff, and general levels of courtesy.[vii]

- *Importance of Services Offered:* More widely, there is thought to be a link between the perceived importance of a service and the satisfaction levels generated for that service. In the UK context, this translates into evidence showing that satisfaction levels are highest in relation to schools, General Practitioner services and hospitals since these are the services which the public see as the most important.[viii] This is a point of some significance since it also suggests that a government keen on increasing user satisfaction levels with public services will need to consider the overall portfolio of services offered, as well as their quality, if it is to be successful.

- *Fairness of Service Provision*: In the UK, '79% of people tend to agree with the statement that 'public services should be targeted at those with greatest need'. This suggests that people are not just interested in their own experience.[ix] At the same time, '77% reject the proposition that services such as the NHS should only be available to the poor'.[x] This suggests that there is public value in fairness and in the progressive universal approach to deciding on the terms of access to services. A failure to keep this in mind when designing and delivering a portfolio of services might lead to the destruction rather than the creation of public value.

- *Cost*: The issue of how much it costs to deliver services is obviously a key factor. Citizens implicitly make judgements on the cost of services as they experience them and it is important to perceptions of value added that costs are felt to be reasonable given the range and quality of services provided.

Outcomes

The second main source of public value identified by Kelly and Muers relates to the achievement of outcomes desired by the public. As well as assessing government through service experiences at the point of use, the public also expects government to deliver a series of socially desirable and important outcomes. These range widely to cover areas such as peace and security, public health, reduced poverty, an improved environment and advancing levels of educational attainment. Services clearly can contribute markedly to the pursuit of such outcomes. However, it is also important to maintain the analytical and policy distinction between services and outcomes. The National Health Service (NHS), for example, can and does contribute to the outcome of improved public health in the UK but improved public health also requires more than NHS activity. It requires wider public health education and changed behaviour and lifestyle choices on the part of citizens. There may, over time, be difficulties of causation over which policy intervention causes which outcome and there may be heated debate over which outcomes are the ones most needed. In general though, these are difficulties related to our understanding of the impact of different policy levers, the appropriate choice of evaluation techniques, and the choice of objective itself rather than a question mark over the central importance of outcomes as a component of public value. Governments that clearly impact upon the outcomes considered important by the public are governments engaged in the delivery of public value added.

Trust

The third and final source of public value is trust in public institutions. Trust is an important source of public value because even where outcome and service targets are met a decline or collapse in trust levels may destroy the capacity to add public value. This is because trust sits at the heart of the citizen-state relationship. If citizens feel they can trust the state and its servants they are more likely to accept government action, more likely to view it as competent, and more likely to feel a sense of belonging and association with it. Trust is particularly important in areas such as policing and healthcare but it is also obviously important in service areas such as education. There is debate over what drives levels of trust in public institutions. Some have argued that there is a connection between general levels of social trust and trust in institutions, some that the behaviour of politicians is crucial, and others still that trust in government is shaped primarily by government competence in the management of the economy and the delivery of services. The evidence is mixed, but in reality trust levels are probably impacted by a combination of all of these factors. Providing the right context of trust so that government can maximise public value added will therefore require a range of different policy responses from improved behaviour on the part of politicians to greater competence in service delivery.

The Application of Public Value to E-Government

When applied to e-government, this understanding of the sources of public value translates into an extended list of policy aims and also into a new set of criteria against which e-government should be judged. A public value through e-government wish list would consist of the following key items:

- The provision of services that are widely used
- Increased levels of user satisfaction with services
- Increased information and choice available to service users
- Greater focus on the services that the public believes are the most important
- Increased focusing of new and innovative services on those most in need
- Reduced costs of service provision
- Improved delivery of outcomes
- A contribution to improved levels of trust between citizens and public institutions

Any attempts to talk of public value added through e-government would need to be backed up by evidence of benefits delivered in these areas.

Consequently, the rest of the material in this paper is presented in such a way as to map on to this public value framework. Chapter 2 concentrates on service quality and the main drivers of it. As a result, it contains commentary on what e-government has achieved in areas like increased information flow, greater choice, and take up. Chapter 3 presents a cross cutting exploration of the potential for efficiency gains through e-government and includes evidence from the United States and Australia as well as from both central and local government in the United Kingdom. Chapter 4, working with our more extended definition of e-government, presents evidence of public value added through ICTs on a sector by sector basis focusing primarily on health and education but also drawing in material relevant to the transport agenda. For the most part, this chapter is where evidence of impact on desired outcomes is presented. From time to time, however, the reader will also find data on cost savings or service satisfaction levels as they relate to the service sector under discussion. These pieces of evidence could equally have been presented in the relevant chapters dealing with cost and satisfaction levels more generally. The decision was taken to present them here simply to allow for all of the evidence of public value added in say, health, to be presented in one place. Chapter 5 briefly examines the relationship between e-government and trust in public institutions. The sixth and final chapter then examines the remaining high level barriers to public value maximisation through e-government and also presents recommendations for government action in response to this situation.

In presenting this analysis at this stage, the ippr has three main objectives. First, it is hoped that discussing e-government in terms of public value added will help to mainstream ICT

facilitated service delivery in a far more effective way than has been possible to date. Public value is, after all, concerned with things that matter to citizens and politicians and if e-government activity can be more convincingly shown to be relevant to these things then the wider policy community is more likely to engage with it.

Second, it is hoped that the very attempt to use a public value framework in relation to e-government will increase the chances of public value becoming the replacement framework for the target to get all services on line by 2005.

Third, but by no means last, it is hoped to use this document as the beginning of an evidence collection process, rather than to offer up the evidence presented here as the final word on the subject. The material presented here is indicative only and it is certain that there are people working on projects up and down the country who will have more evidence to add. This may be evidence from different service sectors to those presented here or evidence from different levels of government or administration. It is also likely to be evidence drawn from the government to business and government to government aspects of the e-government terrain since the present paper focuses almost exclusively on e-government in the government to citizen sense of the term. The ippr would like to here from anyone with additional evidence of public value added through e-government. All correspondence should be sent to Will Davies at w.davies@ippr.org.

Chapter 2: E-Government and Service Quality

The E-Government Impact on Services

As already stated, citizens perceptions of services are influenced by a number of factors ranging across levels of information, degree of choice, satisfaction with the service experience, relative importance of the services being delivered, and the terms of access to services themselves. In this section the UK e-government performance is assessed in each of these areas. It should be stated at the outset that evidence is patchy and it is not clear whether even government itself knows how well or badly it is performing.

Information

The UK government has clearly used electronic channels to increase the flow of service related information to citizens and this has to be one of the success stories of e-government. Government uses its huge number of websites, for example, to provide information on matters such as new job opportunities, the performance of schools and colleges, arrangements for school admission procedures, pensions, benefits and access to home care. NHS Direct Online, the flagship online health project, further provides a wide range of information on particular health conditions, local healthcare services and self-help and patient support organisations. The Government has even built a portal site, Directgov, through which citizens can access all of this information and much more besides.[xi]

Take Up

However, although more information is available, it is not clear that the number of people accessing it could be called a success. Official and comprehensive data on actual government web-site traffic remains elusive, a point made powerfully in a report commissioned by the National Audit Office in 2002, Government on the Web II.[xii] Actual take up rates for services are low with only around one in ten citizens using an online service at this stage.[xiii] This means that there must remain a question mark over whether citizens really find e-services valuable. The need to drive up take up levels has been recognised by government in its revisions to the 2005 target but progress remains stubbornly difficult to achieve.

Choice

The main area of progress has come in the form of new access channels. The government has a channel strategy in place and increasingly citizens can already interact with government via the internet, interactive digital TV, call centres or face to face. However, the government also set itself the goal over three years ago of allowing e-services to be delivered via a wide range of private and voluntary sector intermediaries so that citizens would be able to choose

from a range of suppliers. Although a framework policy document has been published on this issue, very little if any progress has been made in rolling out the intermediary idea in practice. There is little sign that the government has engaged with this part of the agenda in a politically serious way. The whole issue of private sector involvement in the delivery of public services is a politically explosive one within the UK Labour Party, and the recent policy document provided nothing by way of a politically viable (in centre-left terms) account of where, when and how the use of private sector intermediaries is to be acceptable. Progress has therefore been slow in using e-government to extend choice to service users and is likely to remain so.

Citizen Satisfaction Ratings

It is quite difficult to say anything concrete about e-government and citizen satisfaction levels with the public services. Most of the data which does exist in this area is informative only on attitudes to dealing with government via electronic channels in general rather than being specific to particular e-services experienced. To some extent, this is understandable given the still limited nature of transactional services available online. However, government does not have a systematic or coherent view of what citizens think of electronic services. The relevant research that it has conducted is fragmented and there is huge insecurity in making it available for public attention and debate.

More generic data collected by the KPMG Annual E-Government Survey[xiv] shows that the adult population of the UK can be broken down into three groups. Of these 35% are enthusiasts (willing to use six or more electronic services), 29% are pragmatists (willing to use between one and five electronic services) and 31% are e-reluctants (not willing to use any electronic services).[xv] This three way split also appears to be roughly mirrored in the data on channel preference with 28% saying they would prefer to deal with the government face to face, 30% that they prefer the telephone and 26% digital channels. Levels of enthusiasm for electronic interaction with government, not surprisingly, are also strongly influenced by whether the person asked is already online or not. 'One in four (26%) of those already online were enthusiasts compared with fewer than one in twelve (8%) of those who are digitally excluded. Moreover, 'over half (51%) of those without personal access were e-reluctants compared with just one in seven (15%) of the online respondents.[xvi] In terms of particular services which citizens said they would be most likely to use, the most popular were e-voting (38%), passport renewal (37%), booking an appointment with a GP (37%) and NHS Direct (37%).

While this kind of data gives us some insight into what citizens think, it remains the case that even among the enthusiasts, it is difficult to translate a generally positive view of electronic channels into actual behaviour. When asked which channels they had actually used to contact central or local government agencies in the last 12 months for example, 52% of the

respondents to the KPMG annual survey said they had used the telephone and a further 25% the postal service. When the KPMG researchers asked questions about actual usage of a particular service (acquisition of a TV Licence) they found that just 5% of those with internet access had taken the plunge and either renewed online (2%) or set up a direct debit (3%) online. This bears little resemblance to the 43% of the online population (24% of all respondents to the survey), saying they would be prepared to renew their TV licence or set up a direct debit electronically'.[xvii] There is, in other words, still a job to be done in persuading people to use online services before we can get good data on user satisfaction with electronic services.

Once this is done, it is possible to get positive data, as the National Office of the Information Economy in Australia has demonstrated. It published a review of the demand for and benefits of e-government in Australia in April 2003. This review contained significant survey evidence that e-government was popular with citizens. 'Over 90 per cent of respondents indicated an improvement in overall service delivery as a result of using e-government'.[xviii] For internet users, e-government was also reported as the preferred way in which to access government services in about 80% of cases. High percentages of users of e-services also reported the following specific benefits:

- 80% - a significant improvement in the ease with which they could find information
- 75% - an improvement in service quality
- 75% - a feeling that they were better equipped to make decisions
- 68% - improved access to public records

We need this kind of data in the UK debate and we need it updated regularly.

Transactional E-Government and Priority Services for Citizens

As also noted earlier, there appears to be some link between the perceived importance of a service in the mind of the public and user satisfaction levels with that service. The more important a service, the more likely it is to be valued and to drive up satisfaction levels. Given that we know that health and education services are the most important to the public, it is instructive to assess the current portfolio of transactional e-government services against these priorities for citizens. According to the UK Office of the E-envoy, the government's leading and currently available *transactional* services aimed at citizens include the ability to:

- Purchase a TV licence online
- File a self-assessment tax return
- Make an application for a university place
- Apply for Child Tax Credit and Working Tax Credit.[xix]

While each and every one of these services has the capacity to add value to both the service user (in terms of more accessible, convenient and faster service) and to the government (in terms of efficiency savings), none of them is likely to have a major impact on the prevailing mood about public services because none is sufficiently important as a service in the minds of the public. It may be unrealistic to expect anything else at this stage but it is nonetheless important to understand that focusing upon the 'low hanging fruit' is insufficient to demonstrate the wider value and importance of e-government activity.

Having said that, the picture here is not entirely negative. The government is spending at least £2.3bn of the e-government related budget on projects in health and social care, which are designed to connect all GP surgeries, hospitals and relevant social care professionals to the same integrated network. A key part of this activity is the creation of an integrated care record system which will allow joint ongoing management of single patient or service user records. This should provide the basis for coordinated service delivery and a 'joined-up' service experience for the user. Other key plans include the facilitation of electronic booking of hospital appointments, at times and in places which suit the patient, all from the local GP surgery, and a new electronic prescriptions service. These are developments which, if delivered successfully, could have a major impact on public perceptions of the NHS and which would be a powerful demonstration of e-government delivering on the public's priorities.

Nevertheless there is at the very least a presentational problem here. The Office of the e-Envoy has chosen, for example, not to highlight popular services such as learndirect in its list of e-government achievements despite the fact that this is a web facilitated service providing online courses across a wide range of subject areas for adult learners.[xx] This may betray an underlying assumption that it is transactional services involving payments which are the priority for the e-government programme. If this is the case, then this is an assumption with the potential to limit rather than extend public value added through e-government in the short term.

Fairness of Access to Services

It also is true to say that fairness of access to public services is not the guiding principle of e-government activity in the UK. That is to say, despite the major programmes to put all services online by 2005 and a major roll-out of UK Online public access centres, e-government activity is not targeted primarily at the most socially excluded or the most public service reliant groups of the population.

This may sound harsh, but to some extent it is not surprising. There would be little point in putting services aimed at the poor and the elderly online first when these are precisely the groups of people not yet accessing the Internet in large numbers. One could argue that it

makes more sense to put high transaction volume services and the most popular services online first in order to unlock the public value involved in efficiency gains as quickly as possible. But if, as argued earlier, the public sees value in the fairness of service provision and also in a focus on those in greatest need, then this dimension of e-government cannot be ignored or even diminished as an important one worthy of attention.

Despite government efforts the fact remains that there are huge inequalities in terms of access to the internet in the UK.[xxi] This already creates significant inequality in terms of ease of access to government *information* but as the e-government programme delivers more transactional services online and as more and more citizens migrate to electronic channels, this may expand into a straightforward inequality in the terms of access to government services. These negative effects may then expand to become negative effects on equality of outcomes, particularly in education, as Chapter 4 makes clear. If the government wants to add value by showing its commitment to progressive universalism in service delivery, then this situation needs to be addressed. This is a point picked up in Chapter 6 which recommendations that intermediaries with close links into hard to reach groups should be given the authority to access e-services on the citizens behalf.

Conclusion

This quick thumbnail sketch of evidence of e-government impact on the drivers of service quality has suggested two things. First, e-government policies have been successful at increasing the availability of information to citizens and at focusing at least some of the investment on key priorities like the NHS. However, they have at the same time been less successful at getting decent levels of take up, at expanding choice, and at focusing enough of the e-government effort on opening e-government up to the least well off. Second, these conclusions have necessarily been drawn on thin evidence precisely because further evidence either does not yet exist or because it is difficult to find. This chapter has been written in the expectation that informed readers may be sitting on evidence relevant to the issues raised. But this merely focuses our attention on why government itself is not doing more to pull it together and to present it as part of a wider, more compelling case for what e-government can do to improve service quality. For e-government to be successful, the government must not only use it to deliver service quality improvements but must also demonstrate far more effectively that those improvements are taking place.

Chapter 3: Cost Reductions through e-Government

There are good reasons to expect public value added through cost reductions to flow from increased e-government activity. This is both because paper and printing costs can be reduced, as can the amount of time spent dealing with enquiries or incorrectly completed forms, and also because back end systems integration can result in rules being applied to incoming electronic data to allow for full automated completion of transactions. In short, savings are possible through re-thinking processes, cutting out bureaucracy and reducing the number of staff required to deliver a service.

That said it is important to note that efficiency gains do not come automatically. The Treasury has itself identified four factors that impact on the *realisation* of efficiency gains. These are:

- The extent to which *potential* savings exist within any particular service. This will be affected by a number of issues such as how inefficient a service delivery process currently is and how capable or willing the service provider is to genuinely transform rather than simply automate an existing process.
- The cost of any new replacement systems. This will need to incorporate the costs of re-training and change management as well the costs of ICT systems.
- The take up of services delivered through a new channel. Take up is not always vital to savings (because some re-engineering of back office processes can save money even when the traditional access channels for citizens remain dominant) but in most cases it will be.
- The extent to which traditional channel activity can be scaled back or closed, including the potential for reducing workspace and numbers of staff employed in such a process.[xxii]

There is not, moreover, a huge amount of hard evidence of cost savings already delivered. In the private sector, some good examples do exist; the most celebrated being that of Oracle. In 1999 the Oracle chairman, Larry Ellison, set the company the target of making $1bn of savings in 2000-01 by harnessing the power of the internet. This target was achieved by:

- Consolidating ICT for a saving of $200m via such measures as reducing the number of e-mail servers worldwide from 100 to just 2.
- Improved sales to the tune of $550m through the availability of self service applications to both customers and internal staff, leading to increases in sales force productivity of between 10 and 20 per cent

- Better procurement savings of $150 million through adoption of electronic procurement applications to automate internal transaction processes, reduce contract leakage, and free up procurement professionals for more strategic sourcing activities.
- Internal efficiencies of $100m through deployment of web-enabled self-service applications for such functions as personnel records, training, travel, expenses and pay'. [xxiii]

The RAC too, was reported by the NAO to have made a 5% improvement in operational productivity. Though cost savings were not fully quantified, according to the NAO the RAC 'introduced new working practices to improve their level of operational efficiency and customer service provision. This involved changes in the terms and conditions of patrol and call centre staff who deal with 2.4 million call outs a year. It has enabled the workforce to be reduced by 100 whilst increasing their productivity and this has led to considerable cost savings'. [xxiv]

Turning to the public sector, there have been isolated examples of identified savings. One often mentioned case is that of The Land Registry, which has been undergoing a period of e-enabled change since the mid 1990s. In the period 1995-96 to 2000-2001 The Land Registry was reported to have seen a reduction in the cost per unit of work from £27.48 to £22.52. Since 1993, there has also been at least a 40% reduction in fees to the end user and further fee reductions are thought likely in the future. [xxv]

Another example is UCAS, the Universities and Colleges Applications Service, which deals with around 400,000 applications per annum. It currently spends around £1.8m a year in postal communications with applicants but is already slowly migrating communications to electronic channels. In the period 2002-2003, around 34,000 applicants used the web based service and market research indicates that this figure will rise to around 70% of the total number of applications within 2 years. UCAS estimates that its electronic *Apply* service is in the process of reducing its postal costs from £1.8 million to £0.5 million per annum.

At local government level, individual local authorities have reported savings on individual service lines, an example being Hertfordshire County Council's library service, which has found that typical transaction costs have reduced from £4 to deal with a query face to face to 10 pence if the query is resolved over the Internet. [xxvi] In general though, as with evidence on service quality improvements, hard evidence of savings already secured through e-government is thin on the ground.

This position stands in contrast to the amount of work done on *projected* e-enabled savings in the public sector both here and overseas. The Chief Secretary to the Treasury, for example,

commissioned work on e-enabled savings from several government departments in July 2001 and received subsequent data submissions in April 2002. The data received from four departments and agencies, namely the Department for Work and Pensions, the Rural Payments Agency, the DVLA and the Inland Revenue, all showed that e-enabling a key service in question meant expected savings as presented in Table 1 below.

Table 1: Projected Savings Reported to the Treasury

Organisation	Service Selected	Transaction Type	Savings Reported or Expected	Key Factors Impacting Savings
Department for Work and Pensions	Retirement Pensions Claims	Government to Citizen Payment	44.6% of total cost of administering the service, producing an expected saving of £7.4 million per annum	Technology facilitated back office restructuring. Limited linkage of savings to service take up levels.
DEFRA, Rural Payments Agency	Payment to Farmers	Business Application for Funding	Expected savings of 24% of total cost of administration of service, amounting to £37.5 million.	Introduction of new and more effective ICT systems, office closures and some staff reduction
DVLA	Driving Licence Applications	Citizen Application for Authorisation	Only £4 million or 7% of total costs expected to be saved over a 10 year period	Savings limited by factored in costs of investing in new equipment and software required to integrate the processing of paper and electronic transactions
Inland Revenue	Self Assessment Tax Returns	Citizen to Government Payment	Expected savings of 3.2% on the total cost of administering self-assessment tax returns (£13.5 million per annum)	Modest savings due to additional costs of providing electronic channel. Savings heavily take-up dependent and not delivered below a take up rate of 25%

This is the kind of projection also presented in the Australian government's National Office of the Information Economy (NOIE) assessment of the benefits of e-government.[xxvii] Precisely because there was an absence of hard data on savings, the NOIE conducted a survey of public agencies in order to generate a subjective assessment of impact on costs. Of 38 agencies surveyed, 24 expected cost reductions within the ranges set out in Table 2 below.

Table 2: Expected Cost Savings Reported in the NOIE Survey

Range of Savings	Midpoint Value (A$)	No. of Programs	Estimated Reduction in Costs Over 5 years (A$)
Less than $50,000	25,000	5	125,000
$50,000 - $99,999	75,000	2	150,000
$100,000 - $249,999	175,000	1	175,000
$250,000 - $499,999	375,000	2	750,000
$500,000 - $749,999	625,000	2	1,250,000
$750,000 - $999,999	875,000	0	0
$1,000,000 - $1,999,999	1,500,000	2	3,000,000
$2,000,000 - $4,999,999	3,500,000	3	10,500,000
$5,000,000 - $7.5 million	6,250,000	1	6,250,000
$7,500,000 - $10 million	8,750,000	2	17,500,000
More than 10 million	15,000,000	4	60,000,000
Total		24	99,700,000

In the United States too, the National Association of State Chief Information Officers (NASCIO) has thrown up a wide range of cases where the business case for ICT investment has been made strongly on the grounds of efficiency gains to come. A list of example services is presented in Table 3 below. Further detail on the awards, on the projects mentioned, and on the business case assumptions made in each case can be found at www.nascio.org/awards/2002awards

Table 3: Sample Project Savings from the US National Association of Chief Information Officers

Project	Service	Savings Projected
MyFlorida.com	A search engine which reduces the number of calls to the state's call centre.	$1.5 million per year
Massachusetts Educator Licensure and Recruitment	Licensing Process for State Educators	$1.6 million per year

Initiative		
Idaho Paperless Online Personnel/Payroll System	Online HR Management System which reduces paper work and cuts staff required to perform the function	$0.5 million per year
California's CAL-Buy Online Procurement System	e-procurement system which saves around $37 per purchase order	$9.7 million per year

While the saving indicated in each case here is relatively small, the number of services that could be listed in such a table is not. The public sector both in the UK and in other countries includes literally hundreds if not thousands of services which need to be delivered to citizens, businesses and indeed to other parts of government. The projected savings drawn from the example services in the UK, Australia and the US mentioned above are only indicative but they do show that savings are possible and indeed expected across the public sector both in the UK and elsewhere.

That said, the projections of future savings do need to be set against a note of caution. Work carried out by Kable in the UK in 2003 for example cautioned against expecting real long term cost savings in either central or local government. Kable estimated that 'between 2001/02 and 2005/06, e-government will cost UK taxpayers £7.4bn. Local government will spend just under £3bn, while central government will spend £4.4bn. On an annual basis, spending will peak in 2003/04 at £1.8bn, falling to £1.2bn in 2005/06' (Kable, 2003:3). This estimate was based on findings extrapolated from 140 Implementing Electronic Government 2 (IEG 2) statements submitted to the ODPM by local authorities. Kable estimated that local authorities and central government combined could expect savings worth 11% of the total e-government investment over the years in question: a saving of around £819 million.[xxviii] However, although the Kable research also expected the savings from e-government to continue to increase after 2003/04 against a backdrop of declining and then stable e-government investment, at no point in between now and 2015 did it expect annual savings from e-government to exceed annual expenditure. This conclusion mirrors some of the findings drawn from the Australian data.

Work conducted as part of the NOIE study cited above also suggested a benefit to cost ratio of less than 100% for many e-government programmes. In Table 4 below, the benefit to cost ratio projections are provided over a five year period and on a cumulative basis for the group of e-enabled federal programs which claimed that financial benefits were expected. As can be seen, the highest benefit to cost ratio expected over that period was 92.5%.

Table 4: Benefit to Cost Ratio for Programs with expected agency financial benefits (A$m)

Details	Pre 2002	2002	2003	2004	Post 2004	Totals
Costs	38.7	61.6	81.1	95.5	108.1	108.1
Agency Financial Benefits	10.8	31.0	58.1	82.1	100.0	100.0
Benefits/Cost Ratio	27.9	50.3	71.6	86.0	92.5	92.5

Three conclusions can be drawn from this. First, it is clearly important that any consideration of efficiency gains through e-government is not simply taken at face value. Savings are possible but extracting them requires sound data upon which to plan, realistic assessments of likely take up of new e-services and a willingness to take difficult decisions in relation to closing down old channels. Even where savings are made, it is important not to underestimate the costs of e-government and to make sober assessments as to the real benefit to cost ratio of e-investment.

Second, it is also important to note the likely underestimation of possible savings through e-enabled change in Kable's research using UK data. The estimates used in this case were based upon the views of those working within individual local authorities. No obvious account was taken of the possible savings which could be made through shared services across local authorities or the merging of central government departments, such as the merger of the Inland Revenue and Customs and Excise as announced by Gordon Brown in his budget speech in March 2004. When analysis of government activity is carried out holistically, rather than being seen simply as a mere aggregation of individual departments and local authority activities, wider savings become possible and this kind of thinking, together with its more optimistic findings, clearly appears to have influenced the work of the efficiency review led by Peter Gershon.

Third, it is important not to fall into the trap of assessing return on e-investment only in terms of the impact on cost of service delivery to government. The wider benefits which e-government brings need to be brought into the picture. In many of the cases mentioned above, citizens and businesses will enjoy improvements in service speed, convenience and accessibility. Moreover, in both the UK and Australia there is evidence that increased use of electronic government services is producing cost savings to both citizens and businesses. Fees to examine the UK Land Register, for example, were reported by the NAO in 2002 to be

£4 to view an office copy compared to only £2 to view the register online. The Australian National Office of the Information Economy for its part, reports that:

> 'E-government also saves customers money in the form of faster, easier and more convenient service, better quality and reduced turnaround times and, in some cases a reduction in the direct cost for the service. At least 45% of those studied said they had saved money by using e-government. Ten per cent of people and 23 percent of businesses and intermediaries said they had saved more than $25 per transaction. Estimates indicate that the 169 e-service programs across 38 agencies saved [citizens and businesses] at least $1.1bn in 2002 (NOIE, 2003:10).[xxix]

Conclusion

There is already some early evidence of savings to the public sector through the adoption of e-government. More savings should be achievable and measurable but cannot simply be taken for granted. Ultimately they depend on the building of reasonable business cases for each service involved and on government taking a holistic view of the possibilities. It is also important not to confuse transaction cost and total service delivery savings with net savings, since e-government requires substantial investment in ICT and in the short term, the costs can outweigh the savings.

Finally, it is precisely because net savings may take a while to come through that the wider e-government benefits to citizens and businesses need to be emphasised. Public value, as has been stressed throughout, is as much about impacting on outcomes and service quality as it is about reductions in cost. Losing sight of this fact will only reinforce the wider and already problematic scepticism that exists about what e-government can deliver.

Chapter 4: E-Government and Core Service Outcomes

Turning to e-government's impact on desired outcomes the evidence is patchy but, in some important respects, there is a positive story to tell. In this section the focus is on a brief selection of evidence as it relates to the important fields of education, health and transport.

Education

Current education policy in the UK has a number of key aims. These include:

- Creating opportunities for *everyone* to develop their learning;
- Raising standards in English, Maths, ICT and Science;
- Raising participation in post 16 learning; and
- Improving basic and adult skills.

ICT facilitated change and innovation is contributing much across this agenda. In relation to basic and adult skills, for example, there is evidence from pre and post course testing that it is having a positive impact on literacy skills at entry level. Survey data also shows both that ICT based learning is attractive to basic skills learners (92% of learners said they found the use of ICT motivating) and that learners themselves believe that ICT helps them to develop their basic skills (64% said ICT helped them to learn and to concentrate). These benefits and perceived benefits have been delivered despite limitations in the quality of provision and the lack of expertise in using ICT for teaching among many basic skills tutors.[xxx]

ICT facilitated services are also playing an important role in widening participation in education. This is particularly true of learndirect. Evidence drawn from evaluations of learndirect show that it 'contributes to lifelong learning by engaging new learners and by widening participation by reaching out to traditionally disadvantaged groups'. According to data from 2003, for example, 'almost two thirds of learndirect learners had not engaged in any training or learning during the last 3 years. Moreover, compared with the overall population of learners, learndirect learners are more likely to be female, older and less qualified. A quarter of learndirect learners were also retired and a further 15% were economically inactive.'[xxxi] This assessment of learndirect's impact on widening participation is further reinforced by survey data showing that 'over half the learndirect learners with no recent learning experience said that they would not have done any learning if they had not registered with learndirect.'[xxxii]

According to further findings from case study interviews, learndirect partly achieves this extension of participation by addressing many of the barriers to learning felt by individual learners. Learndirect is seen as 'affordable and it can overcome psychological blocks to learning because it can be private and learners do not have to reveal their weaknesses to their peers. It also allows people to learn at their own pace.'[xxxiii] The Institute for Employment

Studies research team responsible for evaluating learndirect also found evidence among learndirect learners of a belief that it had led both to further learning progression and to enhanced employability. 'Some 45 per cent of learners, for example, said that they felt they had gained the opportunity to progress onto qualifications while most recent learndirect learners also felt more confident about seeking or keeping their job as a result of their involvement.'[xxxiv] Half of those respondents reporting that they had received a promotion also stated that they believed their learndirect learning had helped to bring it about.'[xxxv]

Turning to the use of ICT in schools, one of the key pieces of evidence here comes in the form of the IMPACT 2 study, commissioned by the Department for Education and Skills and carried out by the British Educational Communications Technology Association (Becta). This study, one of the most comprehensive of its kind, was carried out between 1999 and 2002 and involved 60 schools in England (made up of both primary and secondary schools). These were selected on the basis of varied levels of ICT use, on the availability of suitable baseline data on the pupils involved, and on the basis of demographic factors to ensure that the sample would be representative of the population of schools in the country as a whole.

Samples of approximately 20 pupils were selected from each primary school, representing a range of abilities. Two samples of 20 pupils were selected from each secondary school covering different age cohorts within the same school. All pupils in the sample completed a questionnaire in July 2000 and another in July 2001 answering questions related to ICT use over the preceding 12 months. These concentrated on use in three different settings, namely use in the classroom, use at school but outside of the classroom, and use at home. Another set of questions dealt with the type of computer usage including options relating to word processing, access to the internet, and use of e-mail and allowed for identification of more than one type of use per pupil.

One of the key aims of the study was to analyse the relationship between the pupils' use of ICT and their performance in national tests. The headline finding was that, "in every case except one the study found evidence of a positive relationship between ICT use and educational achievement and in no cases was there a statistically significant advantage to groups with lower ICT use."[xxxvi]

Since the IMPACT 2 study BECTA has published a wider review of the literature on ICT and attainment and this reinforces the general messages of the IMPACT 2 study.[xxxvii] In particular, the review concludes that the most substantial evidence of positive ICT impact on attainment comes in the core subjects of English, Mathematics and Science. The benefits are delivered in a variety of ways such as through word processor use at primary level, allowing children to draft and reflect on compositions while at an early stage of language development, and

through use of subject based software which helps to develop mathematical reasoning or to improve understanding of scientific concepts through sophisticated simulations.

Two further points might also suggest that these positive findings may only be the tip of the iceberg. First, the IMPACT 2 report stated that, 'there is no consistent relationship between average amount of ICT use reported for any subject and its apparent effectiveness in raising standards. It therefore seems likely that the type of use is all important.'[xxxviii] Second, as with the findings of research into ICT impact on the basic skills agenda, the positive results generated so far have come despite the fact that many teachers still lack experience of using ICT. These two points, when taken together, suggest that there is still plenty of scope for teachers to find more effective types of ICT use and that, once they do, this can be expected to drive even more positive impacts on attainment.[xxxix]

It is, though, worth raising one note of caution. The demonstrated links between ICT use and educational attainment also raise serious issues about the equality of access to the ICT which can help to bring these benefits. Government must be careful to ensure that ICT facilitated improvements in outcomes for some pupils do not become new sources of inequality for others. As ICTs demonstrate their value, access to them needs to become universal.

Health

It is not yet possible to provide robust evidence of real improvements in health outcomes caused by better use of ICT. However, ippr research in this area concluded that there are considerable *potential* benefits that could be delivered in terms of improved outcomes as well as better services and greater trust.[xl] While problems with evaluation processes mean that evidence remains thin on the ground, there are some emerging indications that use of ICT could play a positive role.

The Electronic Records Implementation and Development Programme (ERDIP) evaluations, for example, appear to suggest that use of electronic care records will indeed lead to improved health outcomes once in full operation. Some GPs and consultants have stated that they are able to improve the patient care offered on the basis of information available on the electronic record which otherwise was not available on paper. Pilots run in South Staffordshire have indicated that a positive impact on suicide mortality rates could flow from the shared assessments across mental health and social services professionals which electronic care records would allow.[xli] And research into the National Electronic Library for Health (NeLH) has concluded that the accessible and focused provision of information to health professionals is more likely to lead to increased requests for information and more evidence based decisions which should, in turn, improve the quality of decision-making to the benefit of patient outcomes.[xlii]

Moreover, the data from the Walsall ERDIP pilot indicates major potential gains in relation to key policy objectives such as reduced waiting lists. The Walsall ERDIP pilot's Clinical Steering Group noted, on the basis of activity already assessed in the pilot phase, that :

- 'The electronic record system gives GPs access to the details of patients' previous hospital treatment enabling a further two to three unnecessary GP appointments to be avoided each week. With over 100 GPs using the electronic health record this amounts to around 15,000 saved GP appointments per year.

- The chiropody service in Walsall gets fifty new referrals each day, one fifth of which are unnecessary and could be avoided were information about patients available to the chiropody service at the stage when appointments are made.

- And similarly in physiotherapy, one in ten of the thirty to forty referrals made each day could be avoided.[xliii]

The evidence also suggests that wider outcomes such as co-production of desired outcomes through combined patient and health service activity on the one hand, and shared decision-making on treatment strategies on the other, can be facilitated via introduction of electronic health records. Evaluation data from the Hadfield ERDIP pilot showed that some survey respondents who were suffering from diabetes reported increased monitoring of their own blood sugar, weight, blood pressure and diet as a consequence of looking at the record. This finding is particularly significant given the rising incidence of chronic conditions in the general population and the increasing need for patient involvement in response.[xliv]

Turning to other ICT facilitated benefits in health, there is already emerging evidence of a positive impact on costs. The National Electronic Library for Health, for example, is bringing savings in two areas. First, through nationally aggregated procurement of user licences for information resources such as the Cochrane database of health-related information and second through time savings for health professionals engaged in searching for and through that information. In relation to the second of these, evaluations at the pilot stage of the NeLH have indicated projected savings of somewhere between £3.2m and £12.2m over twelve months.[xlv]

Wider evaluation of the government's ERDIP programme also suggests cost savings are possible. In the case of the Walsall ERDIP Pilot alone, the pilot steering group reported that:

> 'The Electronic Health Record system helps avoid the repetition of tests, appointments and examinations. It was estimated that in the cases of stroke or diabetes patients these replications usually occur once per GP per week. With over 100 GPs using the EHR system, this means the avoidance of almost 6,000 tests,

appointments or examinations per year. With each of these estimated to cost an average of £30, this would deliver a yearly saving of £175,000. Further savings were expected because the system also allows district nurses to access patients' records and test results remotely, thus saving travel and administration costs.[xlvi]

There is also evidence that patient satisfaction levels could be driven by e-services. Earlier, in chapter 2, some of the key factors driving perceptions of quality in the public services in general were identified. These included levels of information provision, quality of the service experience, choice and convenience. It is worth noting at this point that ippr has previously published research which identified key issues driving patient satisfaction levels with the health service in particular. Key factors of significance here were:

- Patient concerns about long waiting times for treatment, primarily because of the adverse impact that it has on their health. They also want treatment availability to be more flexible in order to fit into their work and family lives.
- Patient aspirations for a quality relationship with those treating them.
- The importance of patients being well informed, both in terms of general information about the performance of the NHS and in terms of quality information on their own personal condition.[xlvii]

Evidence drawn from e-service pilots is relevant to all aspects of this agenda. In the case of the ERDIP pilot in Hadfield, for example, the majority of patients who completed a log on their use of the electronic record reported that they had benefited from its use. The kinds of benefits reported in patient focus groups and patient completed questionnaires included the ability to use the record as an aide memoir and the fact that it delivered improvements in interactions with doctors. These positive sentiments are supported further by evidence from another ERDIP pilot in Bury and Knowle where eighty five percent of survey respondents believed that it was a good idea to make health records available electronically and sixty one per cent agreed with the statement, 'I would understand my health better if I could see my health records.'[xlviii]

The Department of Health's pilots using interactive Digital Television (iDTV) to provide health-related advice also provided some evidence that use of ICT can have a positive impact on levels of satisfaction and on the patient-professional relationship. Evaluations of the pilot conducted in Birmingham, for example, demonstrated that user satisfaction with the service was high and that the new service may have had a positive impact on satisfaction with other NHS services.[xlix] Eighty one per cent of service users reported that they found the site useful and easy to understand most of the time and sixty six per cent of users said that using the

service had helped them in becoming better informed. Moreover, the data also demonstrates what patients *think* the health effects of the new e-services might be. Over 60% of users of the information and transactional services available through this channel believe there has been a beneficial impact on their health.[l] The fact that over half of users accessed the service prior to visiting their doctor means that the iDTV service has also had an impact on individuals' interactions with the wider NHS. Four in ten users, for example, felt the information that they obtained from the service helped them in their dealings with their doctor.

Transport

A similar positive story can be told in transport. The UK government has a range of technology activities ongoing and under consideration in relation to the transport policy agenda. It is in London rather than at a national level however that the big and early impact of technology has been felt. As a major world city London has been under huge traffic pollution and congestion pressure for many years and, as an approach to the problem, a technology facilitated congestion charging scheme was introduced in central London on 17 February 2003 in the form of a £5 charge for all vehicles entering the central zone between the hours of 7am and 6.30pm. Any vehicles entering the zone without prior payment or an exemption are subject to a financial penalty and this penalty increases over time if it is not paid.

The system works by capturing vehicle number plates on a series of networked cameras. The numbers are then checked against a database to see if payment has been received and where there is no record of pre-payment, penalty notices are issued. The systems of payment themselves also rely heavily on technology to ensure their convenience and accessibility. The majority of the payments made by citizens are made either over the internet, via SMS text messaging, or via a call centre and only 17% of payments are made face to face at retail outlets.[li]

It is too early to conclusively judge the wider social, economic and environmental effects of the scheme but the earliest evaluations show that it has been successful in traffic management terms. The initial 3 month evaluation by Transport for London showed that:

- Traffic levels inside the charging zone had reduced by sixteen per cent.
- The average speed of traffic across the charging day was 17km per hour. This was an increase over the average 13km per hour achieved for the same period in 2002.
- Around 150,000 fewer car trips were being made into the charging zone each day compared to spring 2002 and of these the majority, around 75,000 to 105,000, had transferred to public transport with another 15,000 to 30,000 having dealt with the charge by diverting around the zone. Some 30,000 to 45,000 people had also switched to taxis, motorcycles, pedal cycles or to walking.

- Public transport was coping with the increased numbers adequately and in particular disruption to bus services caused by congestion was down while use of the underground system in the morning peak was estimated to be up by one per cent
- Wider traffic counts indicated that diverted traffic was not causing any major new congestion problems outside the zone.[lii]

In short, and in terms of the impact on traffic and congestion, this technology facilitated transport scheme has been a success, demonstrating that in transport, as in education and health, ICT facilitated service innovation can be used as a policy instrument to deliver improved outcomes. The Department for Transport is now actively considering a range of technology facilitated schemes to manage traffic flows around the country and digitally networked technology is set to play a major role in future transport policy.

Conclusion

There is a positive e-government story to tell in relation to impact on outcomes. E-government is beginning to add clear public value in education, health and transport despite the fact that a general failure to conduct robust evaluations of ongoing projects in terms of impact on outcomes unnecessarily limits the capacity to make the case.

Chapter 5: The Impact of E-Government on Levels of Trust

This is the shortest chapter in this paper because, in truth, we know very little about the relationship between e-government and trust. Much of the government's attention to this agenda has been focused on issues surrounding security and privacy of information. This is an important area and the government is right to seek to manage it since in effect e-government brings with it a whole new series of challenges and threats to trust levels in government in the digital age. Citizens who find that their personal information has been misused or inappropriately accessed are hardly likely to have their trust in government strengthened as a result.

Nevertheless there is another way to think about the relationship between e-government and trust in the new technological circumstances and that is to think not only about whether e-government can be trusted, but also about whether wider levels of trust can be increased *through* e-government. It will be recalled, for example, that earlier in this report general service quality and government competence were identified as possible generators of trust. In these circumstances, and given that electronic services are being built because of their potential to be better services, would it not be sensible to begin monitoring the impact of e-service use on levels of trust? This rarely, if ever, happens at present.

Moreover, since trust is at the heart of the relationship between citizens and state and since that relationship is affected by the wider relationships between citizens, elected representatives, and the executive branch of government, there is also a case for drawing e-democracy and e-participation activities into the e-government and trust debate. Again, this does not currently happen and the limited amount of e-participation activity already underway is not conceived of as being relevant to trust.[liii] Not only then do we currently know very little about the nature of the relationship between e-government and trust, but we are also unlikely to improve our understanding unless we re-conceptualise the nature of the linkage between the two.

Chapter 6: Maximising Public Value

The previous chapters have presented preliminary evidence on public value and e-government. In some areas, the evidence is positive and more should be made of it. In others, however, there is almost no evidence at all and in general the evidence base is too thin because not enough is done to collect the right kind of evidence. If we are to counter the prevailing perception that most or all of the government's ICT investments are an expensive waste of money we must now ask why it is that even more public value has not been added and also what the remaining barriers are to maximising public value added through ICT.

The Remaining Barriers to Public Value Added

There are at least four sets of issues that merit attention in relation to the remaining barriers.

First, there are problems with the strategic policy framework. This breaks down into a number of key issues including, but not limited to:

- The nature of the e-government targets set.
- Patterns of allocation of funding for e-government activity
- The criteria which appear to dominate ICT procurement decisions
- The incentive structures facing civil servants.

To take the issue of the e-government targets first, many still defend the decision to set the target to get all public services online by 2005 on the grounds that it was necessary to get the public sector machine to focus on delivering something concrete. This reasoning may, for a time, have been valid. However it is now long past the time when people should recognise that getting all public services online and adding real public value are not the same thing. When measured in terms of impact on level of service use, measurable improvement in service quality, impact on desired policy and socio-economic outcomes, and more efficient delivery of service, public value is far more demanding as a set of success criteria than is the mere provision of services online. It is also far more relevant to citizens and consequently can be made far more relevant to the politicians and ministers who represent them. For as long as the focus and resource is on getting all services online, there is a danger that attention is being diverted away from more effective and innovative ways of transforming services to add public value. This needs to be kept in mind when replacements for the 2005 targets are being considered.

Second, when it comes to allocating funds to ICT and e-government projects, the government seems not to weight funding with an eye to improving service experiences and outcomes. To be more specific, government consistently funds ICT itself while under-funding the business change required to ensure that ICT is part of a wider strategy of service improvement. This

weakness also consistently leads to a lack of buy-in from over-worked and over-stressed frontline public service workers, the group that citizens most frequently come into contact and have service experiences with.

Third, and despite many protestations to the contrary, decisions on value for money in the procurement process too often come down to assessments of cost rather than assessments of the wider public value which might be delivered from any particular procurement. This position betrays a lack of confidence in quantifying wider value added and means that procurement on cost tends to be the least risky fall back position for the procurement officials involved. This problem is ironic in many ways because government is not in any case good at measuring either existing or future costs. A telling message to emerge from departmental input to a Treasury report on potential e-enabled savings in 2003, for example, was that clearer methodological guidance was needed to encourage departments to produce more considered and comparable cost figures precisely because different departments were using different approaches to costing. Despite the fact that breaking down operating costs is essential for getting a handle on any likely efficiency savings, three out of four departments responding to the Treasury failed even to break down total costs into fixed costs and variable costs. This is a fairly basic weakness in approach and shows that even on the supposedly more familiar territory of cost, departments are inconsistent and do not appear to be aware of or to use the guidance received from the Treasury. When one moves beyond this, to consider the more wide-ranging terrain suggested by a public value framework, effective measurement becomes even more of a challenge and government is, if anything, even less experienced and coherent in gathering relevant data than it is in relation to costs. Conducting value for money procurement is obviously important but it is important that the value in question is considered to be more than a mere issue of cost and that government is equipped to measure and consider non-cost related value.

Finally, in terms of problems with the strategic policy framework, government is not doing enough to make the change to a more public value oriented way of doing business less risky and more attractive to many key civil servants and public service workers. At the moment, the risk adverse culture of the civil service is underpinned by an absence of incentives to individuals to try new ways of working in the hope of delivering wider public value. Civil servants in the main still build careers through compliance with hierarchical, upward looking mechanisms of accountability rather than on the basis of the outward, citizen facing impact of the programmes they manage. For the most part, individual incentive structures therefore work against public value innovation rather than in support of it.

The second major set of barriers to public value added builds on this and concerns a failure to reward innovation. In short, the problem of individual incentives also exists at the systemic

level. While it is commonplace today to hear people talk of the need to transform services rather than simply to automate them, it remains the case that the processes through which good ideas can be generated and turned into new ways of doing business in the public services are inadequate. The problem in the public sector ICT space, in essence, is that government is not always best placed to spot the new possibilities of emerging technology but equally, there is very little incentive for those in industry to bring forward new ideas. Often, the reward for doing so is to succeed in persuading government of the validity of an idea and then to lose out in a subsequent tender process to implement it. This situation is almost designed to ensure that good ideas remain unheard and unseen and, as a result, opportunities to add public value through the innovative transformation of services are being missed.

The third set of barriers concerns insufficient power at the centre. Given that the success of public sector use of ICT is affected by the wider policy and institutional frameworks described above, a further key problem has been the lack of power at the centre of government, and therefore a lack of capacity to co-ordinate approaches across these issues to maximum effect. On the one hand, responsibility for the ICT and e-services agenda has been split between the Office of Government Commerce, the Office of the e-Envoy (now the e-Government Unit) and the DTI. On the other hand, the most senior civil service post attached to this agenda, namely that of the e-Envoy, has been lacking in formal authority. The consequence has been insufficient linkage between target setting, investment appraisal, benefits realisation, procurement and innovation processes and, if this position is allowed to continue, it is bound to limit public value added rather than to strengthen it.

Finally, a persistence in thinking that government itself should be the service provider has also remained a stubborn barrier to progress. There are many times when direct service delivery by government is most appropriate. However there are also times when other private and voluntary bodies might be best placed to interact with the citizen on behalf of government. As already noted, although the government has been talking for over three years about the need to develop a mixed economy in e-service delivery in which private and voluntary sector bodies would be allowed and encouraged to compete with one another to deliver e-services to the public, very little progress has been made in turning words into action. Opportunities to add further public value are being missed, not only because the marketing and customer focused practices of the private sector are being under utilised, but also because the closeness of relationships with hard to reach target groups enjoyed by many voluntary organisations are also being wasted. The result is not only missed opportunities to add public value through increased service take up, but also missed opportunities to deliver beneficial e-services to those least well off in society, since few from poorer backgrounds are likely to become large users of transactional government services without the help of more community based intermediaries.

Recommendations

In response to this situation and to the wider material presented in this report, and in order to give the best chance to maximise public value added through ICT investment, the government should now:

- *Replace the target to have all services on line by 2005 with new, public value targets for all major ICT investment projects.* This focus on specific public value targets for each project should replace any tendency to create yet more vague overview targets. Any benefits that come from such high level 'aspirational' targets are outweighed by the lack of focus on core service improvement and associated public value added in key areas which come with them.

- *Invest more in the business change processes implied by many major ICT programmes to ensure that it is not only the ICT that is delivered but also the service quality improvements, the efficiency gains, and the improved outcomes which justify the ICT investment in the first place.* More specifically, the government should also conduct major, forward looking reviews of the character and type of professional roles which public sector workers will increasingly be asked to fulfil in the digital age. ippr has conducted one review of this kind in relation to The Future Health Worker but much more of this kind of work needs to be done to re-assure public sector workers that ICT enabled change can mean not only better services for citizens but also new, better and even more fulfilling roles for them in the public service.[liv]

- *Begin to introduce public service workforce structures that encourage individual civil servants and frontline service workers not only to take responsibility for delivering public value but also reward them for doing so, both financially and in terms of career advancement.* This needs to apply as much to central government civil servants as it does to the teacher intent on exploring ICT use to drive up pupil achievement.

- *Make the new Head of e-Government more powerful than the previous e-Envoy and locate it within the Treasury rather than the Cabinet Office.* This change is not about asking a single individual to be given day-to-day involvement in all ICT related decisions. This would not be practicable. However, it is about ensuring that the most senior official has the capacity to influence and shape the policy frameworks within which those day-to-day decisions are taken by others. The Head of e-Government needs to be able to ensure that ICT and e-government related targets and approaches to investment appraisal and procurement and to the use of e-service intermediaries are not only in place but reflect the overall strategic commitment to use ICT and e-government to contribute to public value added. Naturally, in reality, the new Head of e-Government will

need to achieve much of this through persuasion and influence on others across government departments. However, the position also needs to be backed up with the power to intervene where departments or others seem to lack to commitment to ICT-enabled change or where there is a failure to embed ICT investments more centrally into the government's overall mission.

The appointment of Ian Watmore as the new Head of e-Government has coincided with a rethink of the locations of functions and organisational units within the Cabinet Office. In many cases this has involved moving these functions between departments. For instance, the e-Envoy e-Delivery team is likely to be moved to be part of OGC Buying Solutions, while the e-Envoy's focus on trade and investment returns to its previous home within the Foreign Office and British Trade International. Policy on digital inclusion is also under review with the creation of an industry-led Digital Inclusion Panel and the policy area is unlikely to remain within the Cabinet Office. However, the location of the Head of e-Government's office has remained unchanged. We believe there is a strong case for the e-Government Unit and the Head of e-Government to be moved from the Cabinet Office to the Treasury. Many of the countries which have been most successful in using e-government, particularly Canada, have created a powerful central ICT strategy body within their finance or commerce ministry. We recommend that a similar approach be taken here and that this power would be best exercised from the Treasury. Within the Treasury the e-Government Unit could exploit linkages to PSA targets, departmental funding allocations, and closer ties to the Office of Government Commerce.

- *Increase the take-up and 'fairness' of e-government services through the increased use of private and voluntary sector intermediaries with good links into hard to reach groups.* This move to use more intermediaries can be justified on wider service take-up grounds as well, but it is on the issue of the digital divide that more activity here might have the greatest impact. The Citizens Advice Bureaux for example has been active in exposing the barriers which currently prevent it from accessing housing and other benefits more quickly and conveniently for hundreds of thousands of its clients.[iv] Without clearing the path to greater intermediary use such as this, government continues to run the risk of focusing much of its e-service investment only on improved services for those already well off.

- *Create an ICT and Public Sector Innovation Fund* to reward public service related innovation in the private and voluntary sector. This Fund should come with a list of priority policy problems that the government would like help with. Private and voluntary sector organisations that invest in ICT-enabled pilot schemes relevant to these areas and that can show public value delivered through such pilots should be guaranteed a certain level

of public funding to scale up those activities. This kind of fund would go some way to providing some guaranteed financial reward for those with good ideas and would also call the bluff of many outside of government who frequently claim they know of far better ways of delivering services. A fund of a sufficient scale would also make awards from it a real source of potential prestige for those bodies wishing to be most closely associated with thought leadership and innovation.

- *Deal with the value measurement problem by improving both current data on costs and by quantifying many of the non-cost benefits that come from ICT and e-service investments to allow sensible cost-benefit and return on investment assessments to be made.* In terms of getting a handle on current costs, government departments need to focus on the costs of processing a transaction in the traditional manner and where baseline data are not available, assumptions need to be made based on similar service or organisational data from outside of government. It is not acceptable for government departments to simply not know what a service currently costs.

When it comes to measuring possible cost reductions for government, this needs to be sensitive to a number of factors including the fact that some costs will fall smoothly as transaction numbers fall (e.g. postage), while others will fall in chunks (such as reduction in staff one person at a time rather than one transaction at a time). Indirect support costs will also need to be considered such as in reduced personnel services as the number of staff declines. Over the longer term, physical resource release may need to be factored in. Clearly, and most sensitively in political terms, there will also be an ongoing need to estimate staff savings.[lvi] According to the Treasury, the best way into this is 'to identify steps in the transaction process, identify e-time savings for each step in the process, then total the time saving up and convert it into staff savings-for each assumed level of take up'.[lvii]

Finally, there will also be a need to 'understand on a transaction by transaction basis what level of take up over time is realistic and the extent to which efficiency savings generated by a service will be dependent upon levels of take up'.[lviii] There are several requirements for effective analysis here. These include assessments of the quality and attractiveness of the service available, the effectiveness of any marketing or communications strategy around a service, and the socio-economic characteristics and internet penetration levels of target client groups. The issues here are pretty straightforward: if a service is easier or more attractive, or brings other benefits to the customer, then the service is more likely to be used. If customers do not know that a service is there or what its benefits might be, then it is less likely to be used. Moreover, 'understanding the breadth and depth of channel penetration and usage in an electronic service's customer population, and understanding how this is expected to grow over

time, can further aid in the analysis of a plausible take up path'.[lix] 'By conducting similar calculations for traditional and electronic costs at a number of different take up levels, the overall impact on costs, and hence the overall efficiency saving to be expected by e-delivery, can be calculated'.[lx] Moreover, the analysis and planning process can be strengthened further by use of both sensitivity and breakeven analysis.[lxi]

In terms of benefits unrelated to cost that might come from ICT and e-service investments, these need to be broken down into monetary and non-monetary form. Monetary benefits consist of things like the reduced travel and postage costs involved in e-transactions. Non-monetary benefits include things like greater choice and more functionality, greater accessibility, more convenience and faster service delivery or transaction completion. Straightforward techniques exist for dealing with monetary costs and benefits but the non-monetary or non-exchequer costs and benefits are a little more complex. These come in one of two forms: time savings and value added. As an aid to decision-making, government departments and other public bodies now need to use techniques which allow for the translation of these qualitative factors into quantitative, monetary values. A brief description of approaches to doing this is provided in the footnotes. [lxii]

Turning to the issue of measuring the impact of ICT investment on wider outcomes and attainment of policy objectives, the mistake in the past has often been to attempt to isolate the impact of ICT from other factors. Even in the case of much of the material presented earlier in relation to education, where links have been demonstrated between ICT use and educational attainment, the evaluations have shown that it is how the ICT is used, and in what pedagogic context, that matters in terms of impact. While ICT programmes will need their own operational objectives and targets as a matter of sound project management, ICT needs to be primarily seen as a facilitator of a new service or as a new way of providing an old service, and needs to be evaluated as such. The indicators that need to be used to assess impact are therefore those indicators that are central to the performance measurement framework of any given service rather than indicators associated with the performance of ICT in particular. If, for example, mobile ICT devices are used by the police in the hope of limiting desk time and maximising time spent fighting and preventing crime in the community, then it is in terms of public perceptions of community safety and the impact on crime levels in that area that such an ICT project would need to be evaluated.

- *Government should collate as much evidence of public value added through e-government as possible and make this available on a best practice website backed up with detailed case study material.*

If this overall package of measures is introduced, the chances of increasing the public value evidence base and of changing the climate around public sector ICT will markedly increase. Without such measures, those who wish to see the public services radically scaled back will hold up this genuinely important piece of public service modernisation as a failure.

References

[i] Booz Allen Hamilton, *International e-Economy Benchmarking: The World's Most Effective Policies For The e-Economy*, London, November 2002.

[ii] Booz Allen Hamilton, p.8

[iii] Booz Allen Hamilton, p.18

[iv] National Audit Office, *Better Public Services Through E-Government*, HC 704-1, April 2002

[v] Kelly and Muers, Creating Public Value, Strategy Unit

[vi] Kelly and Muers, Creating Public Value, Strategy Unit, p.11

[vii] See Nick Donovan, Joanna Brown and Lisa Bellulo, *Satisfaction With Public Services*, November 2001, available at www.strategy.gov.uk

[viii] Kelly and Muers, Creating Public Value, p.12

[ix] The Public Management Foundation, *The Glue That Binds-Public Value of Public Services*, 1996, p.15

[x] Kelly and Muers, Creating Public Value, p.15

[xi] The Directgov portal can be viewed at www.direct.gov.uk

[xii] *Government on the Web II*, is published by the National Audit Office and is available at www.nao.gov.uk

[xiii] The exact figure, presented in the Booz Allen Hamilton report, is 11%. Take up figures have been rising slowly since but they have yet to take off in a major way.

[xiv] KPMG Annual E-Government Survey, 2002

[xv] KPMG Annual E-Government Survey, 2002, p.1

[xvi] KPMG Annual E-Government Survey, p.5

[xvii] KPMG, Annual E-Government Survey, p.10

[xviii] Australian National Office of the Information Economy (NOIE), The Benefits of E-Government, 2003, p.9

[xix] Office of the Envoy, *UK Online Annual Report*, 2002

[xx] LearnDirect can be viewed at www.learndirect.co.uk

[xxi] For the most recent figures on patterns of internet access see the Office of National Statistics Website at www.statistics.gov.uk

[xxii] HM Treasury, Measuring the Benefits of E-Government, unpublished.

[xxiii] see National Audit Office, Better Public Services Through e-Government, p.36

[xxiv] National Audit Office, Better Public Services Through e-Government, p.33

[xxv] National Audit Office, Better Public Services Through e-Government, p.2/3

[xxvi] National Audit Office, Better Public Services Through e-Government, p.31

[xxvii] Australian National Office of the Information Economy, The Benefits of E-Government, 2003

xxviii The Kable researchers found that around 25% of the IEG statements examined came with a quantified amount of savings expected. They then took the average savings amount identified (11% of e-government spend) and assumed that most authorities would make similar savings to reach a grand total for all local authorities. They went on moreover, to argue that; 'As there are no publicly available figures for savings from central government e-investment, Kable has assumed a similar achievement for central government as for local government. This is because they have a similar profile both in terms of the types of technologies they buy and the total amount they spend annually on ICT (not just on their e-government spend) (Kable, 2003 : 11).

xxix This figure is based upon an assumed number of outputs (as provided by the agencies themselves) and user provided estimates of economic benefit per transaction. It assumes that agency supplied outputs are accurate, and that at least one in four interactions have value to users. It is important to note that the NOIE did not independently validate these assumptions and the figures should therefore be treated with caution.

xxx Institute for Employment Studies, ICT and Basic Skills

xxxi New Learners, New Learning: A Strategic Evaluation of Ufi, Department for Education and Skills and Institute for Employment Studies, 2003, p.viii

xxxii New Learners, New Learning, p.viii

xxxiii New Learners, New Learning, p.viii

xxxiv New Learners, New Learning, p.ix

xxxv New Learners, New Learning, p.x

xxxvi See BECTA, IMPACT 2 : The Impact of Information and Communication Technologies on Pupil Learning and Attainment, available at www.becta.org.uk/research/impact2 , p.2

xxxvii ICT and Attainment: A Review of the Research Literature, DfES/BECTA, 2004

xxxviii BECTA, IMPACT 2, p.2

xxxix There has been considerable debate in the ICT and education literature on the validity of various types of methodology for researching the links between the two. This has led some to be more sceptical of the research findings. Others however, argue that the positive impacts of ICT are probably being understated because methodological frameworks are tied to old ways of thinking about learning and they therefore fail to capture the benefits of new forms and styles of learning. Underpinning this dispute is a much wider debate on what insights ICT is producing into our understanding of how people learn. BECTA is aware of the methodological debates and has come to the firm conclusions on ICT and attainment presented here even after giving them careful consideration.

xl Bend (2003), Public Value and e-Health, ippr

xli See Foord, Mathiesen, Kolind and Owens (PCC Consulting) (2003), Core National Evaluation of the Electronic Records Development and Implementation Sites Final Report, available at

http://www.nhsia.nhs.uk/erdip/pages/docs_egif/evaluation/technical/erdipcoreevaluationfinalreport.pdf

[xlii] Urquhart, Yeoman, Cooper and Wailoo (2001), NeLH Pilot Evaluation Project Final Report, available at http://www.nhsia.nhs.uk/nelh/pages/documents/aber.doc

[xliii] Foord, Mathisen, Kolind & Owens (2003), Core National Evaluation of the Electronic Records Development and Implementation Sites Final Report (N2/P4), NHSIA http://www.nhsia.nhs.uk/erdip/pages/docs_egif/evaluation/technical/erdipcoreevaluationfinalreport.pdf

[xliv] Harris & Boaden (2003), *Patient Held Electronic Medical Records at the Hadfield Medical Medical Centre*, HORC http://www.nhsia.nhs.uk/erdip/pages/demonstrator/hadf/hadfield_(12).pdf

[xlv] Urquhart et al 2001

[xlvi] Foord et al, 2003

[xlvii] Kendall (2001), The future patient, ippr

[xlviii] Pyper et al. (2001), *Survey of Patient and Primary Health Care Team Perceptions and Attitudes on Electronic Health Records*, NHSIA http://www.nhsia.nhs.uk/erdip/pages/demonstrator/bury/bury_(13).pdf

[xlix] See Nicholas, Huntingdon, Williams and Gunter (City University) (2002), First steps towards providing the nation with health care information and advice via their television sets. Available at http://www.soi.city.ac.uk/organisation/is/research/dhrg/reports/ditv-final-full.pdf

[l] Nicholas et al, 2002

[li] Transport for London, The Central London Congestion Charge Scheme, available at www.tfl.gov.uk

[lii] Transport for London, The Central London Congestion Charge Scheme.

[liii] See Ian Kearns, Jamie Bend and Beatrice Stern, *E-Participation in Local Government*, Institute for Public Policy Research, London, 2002 for an account of the ongoing e-participation activity in English and Welsh local government. Available at www.ippr.org/digitalsociety

[liv] Kendall & Lissauer (2003), *The future health worker*, ippr

[lv] Citizens Advice & SOCITM (2003), Better connected: Advice to citizens

[lvi] Recent announcements on the merger of the Inland Revenue and Customs and Excise, with their associated job losses, have illustrated this already but more such instances of job reductions, at least partly driven through ICT enabled change, can be expected.

[lvii] HM Treasury, Measuring the Benefits of E-Government, unpublished, p.15

[lviii] HM Treasury, Measuring the Benefits of E-Government, unpublished, p.16

[lix] HM Treasury, Measuring the Benefits of E-Government, unpublished, p.16

[lx] HM Treasury, Measuring the Benefits of E-Government, unpublished, p.18

lxi In sensitivity analyses, particular assumptions are varied to assess the impact on a project as a whole. In the e-government space varying assumptions about the level of take up could be used to assess impacts on the overall business case and this in turn might allow for some minimum and maximum calculations. Breakeven analysis is designed to show the point at which investing in a new e-enabled service actually produces overall savings. Once the break-even take up level has been estimated, it is possible to assess how likely it is that that take up level will be reached. On a slightly wider note, it will be interesting to see how much methodological detail is presented publicly in support of the Gershon Efficiency Review once figures from this review are included and made public in the 2004 Spending Review.

lxii When allocating a monetary value to time savings, the time savings themselves first need to be identified and quantified and only then can a monetary value be assigned to them. In the e-government space, the time-savings we are most likely to be talking about include things like time saved filling in forms which are pre-populated and travel time saved through being able to interact and transact with a service online. For time savings related to travel time, 'it will be necessary to obtain or derive an estimate of the average distance between customers place of residence and delivery outlet' and this analysis in turn requires an understanding of demographics and the characteristics of the customer group for a service. Standard approaches to assigning monetary values to time savings make an important distinction between working and non-working time. (see Annex 3 of Green Book) Working time, or employees' time, can be valued as the opportunity cost of that time to the employer or, put simply, as gross wage rate plus employer overheads (roughly an additional 24%). Something of a standard has been set here by work in the transport field which assesses the value of time to users of different modes of transport. According to internal work on this in HM Treasury, 'Standard rates derived are £17.44 per hour for car drivers and £25.17/hour for rail passengers. HMT suggests to departments that where carrying out an independent estimate may be difficult or costly, a conservative estimate of £20 per hour at 2002 prices could be used. Estimates of the value of non-work time savings are generally obtained by using stated preference techniques. These are based upon evidence from observed behaviour and survey data and again, work in the transport field offers up some ways forward. The evidence shows that people place a higher value on saving walking time or waiting time than time spent in a vehicle. Non work time has been valued at a standard rate of £3.74 per hour per person (1998 values) and for waiting for public transport, walking and cycling at double that. Since walking (to post offices etc.) and waiting time (in queues) is likely to be important in relation to e-government time savings, one could use a rate of around £7.50 per hour for e-government savings. The precise figures used though, may be open to some debate and of course, common sense needs to be used in terms of the time and effort put into these assessments: for small and not very costly programmes this may be overkill. The point here, is that

techniques do exist which allow values to be placed on the non-monetary benefits delivered to citizens.