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Better public services through e-government: academic article in support of better public services through e-government

Report

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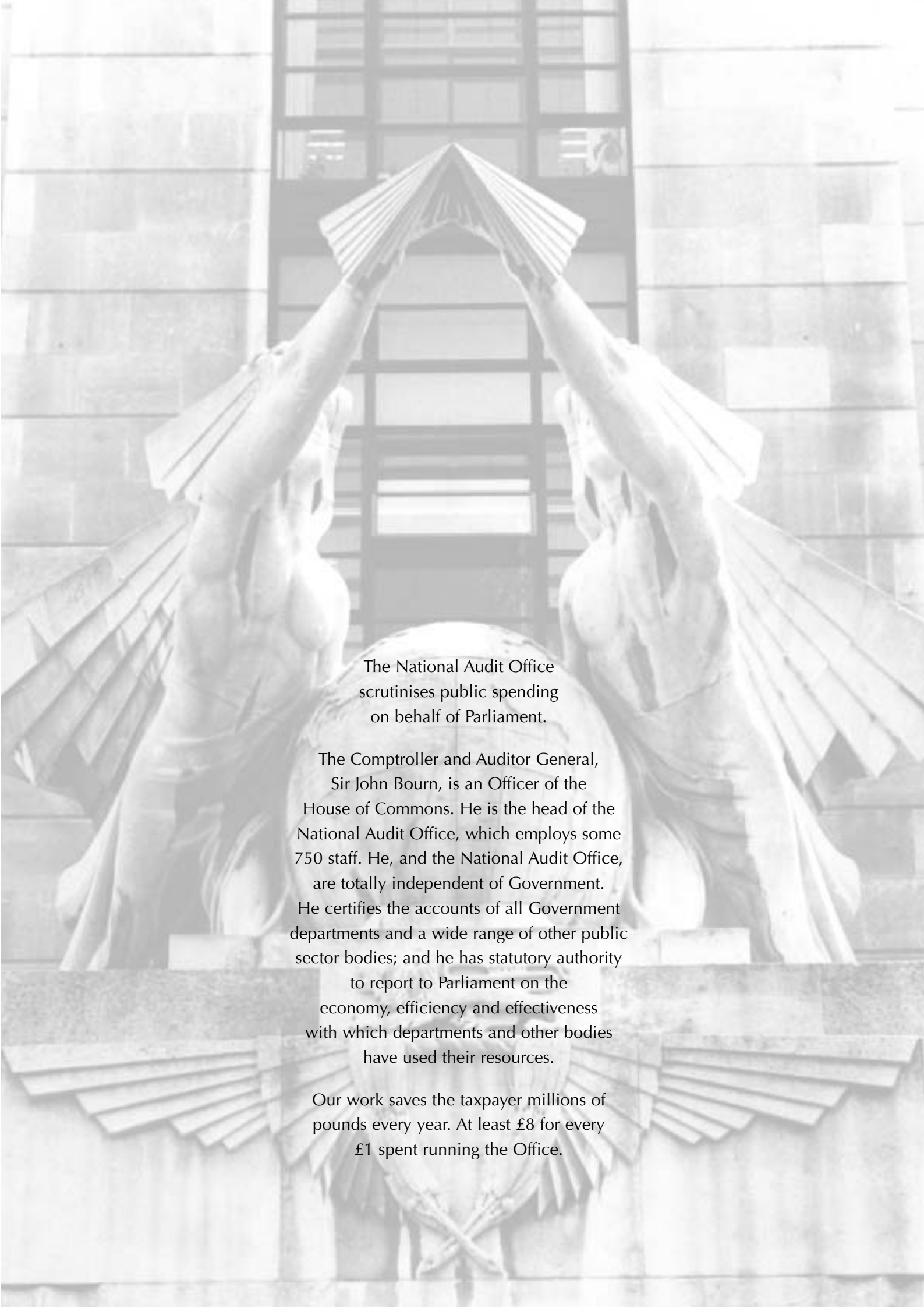
NATIONAL AUDIT OFFICE

Better Public Services through e-government:

Academic Article in support of Better Public Services through e-government

REPORT BY THE COMPTROLLER AND AUDITOR GENERAL
HC 704-III Session 2001-2002: 4 April 2002



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John Bourn
Comptroller and Auditor General

National Audit Office
8 March 2002

The NAO study team comprised Michael Whitehouse, Nick Lacy, Geraldine Barker and Dave Clark. We commissioned a paper on the cultural barriers to e-government from Professor Helen Margetts (University College London) and Professor Patrick Dunleavy (London School of Economics and Political Science). We also convened an expert panel to advise us throughout and it comprised:

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Cultural barriers to e-government

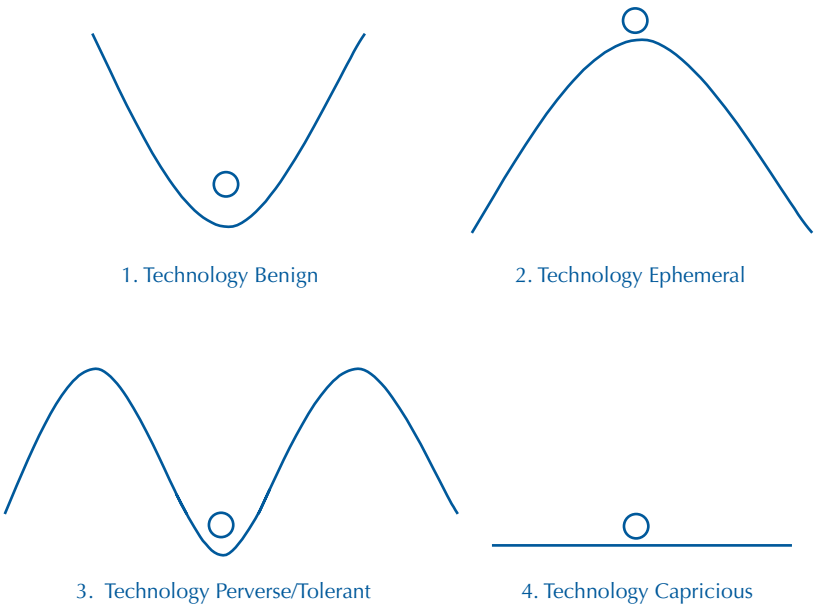
by Professor Helen Margetts (University College London) and Professor Patrick Dunleavy (London School of Economics and Political Science)

Introduction

E-government is about making the full range of government activities - internal processes, the development of policy and services to citizens - available electronically. Despite the bursting of the over-inflated dot com bubble, electronic interactions have rapidly shown astonishing potential for transforming the internal activities of all kinds of organisations and dramatically altering the relationships between organisations and those who use them - in particular, firms and their customers. As a Dutch parliamentary committee put it, 'Information and Communication Technology (ICT) is not a supporting technology, but coincides with the primary process and touches government at its core' (ICT and Government Advisory Committee, 2001: 9). Yet (in the UK in particular) the potential of web-based technologies are taking much longer to be realised in government. Why? What are the obstacles to the development of e-government - do they come from within government organisations themselves, or from society? Are they ingrained in organisational structures and societal interactions - or can they be overcome and if so, how? This short paper reviews and categorises the cultural barriers to e-government, drawing on experiences from overseas and the private sector; cultural theory; social psychological research into societal use of information and communication technologies; and organisational research into the relationship between such technologies and organisational change. It goes on to consider how these barriers can be overcome. Appendix one provides - for the supply side - a short quiz that a civil servant in charge of the development of e-government should consider undertaking to identify the cultural barriers within their own organisational unit.

The tools of e-government - particularly web-based technologies - have created a new technological environment for both citizens and governments. Different institutions and societal groups - with different organisational cultures - will have different cultural responses to the possibilities that these new technologies provide. As Hood (1998: 199) put it, 'a cultural theory analysis suggests that any given technological change can lend itself to very divergent visions of social modernisation'. Mary Douglas - an anthropologist who, with her followers (see Thompson et al, 1990) has done most to develop cultural theory as a way of describing society and its institutions - suggests that there are four cultural 'myths' which underpin institutional or group responses to certain environments. These myths 'provide the foundation for the essential "unity in diversity" of human experience (Thompson et al, 1990: 25). Here we adapt the four myths - originally applied to eco-systems - to sum up different cultural attitudes to the new technological environment (see Thompson et al, 1990: 26-28) facilitated by web-based technologies. They are illustrated diagrammatically as follows:

1 Four myths of technology



1. Technology Benign

2. Technology Ephemeral

3. Technology Perverse/Tolerant

4. Technology Capricious

The first myth is **Technology Benign** - which tells us that the technological world is forgiving: no matter what knocks we deliver the ball will always return to the bottom of the basin. The managing institution can have a laissez-faire attitude. This myth encourages and justifies trial and error: 'bold experimentation in the face of uncertainty' (Thompson et al, 1990: 27). **Technology Ephemeral** is the opposite - the technological world, it tells us, is a terrifyingly unforgiving place and the least jolt may trigger its complete collapse. The managing institution must treat technology with great care - it only takes a little jolt to push the ball off the peak. This myth is justification for those who would resist technological innovations (particularly large scale inter-related systems) and use technology only in modest, decentralised ways. In the **Technology Perverse/Tolerant** myth, technology is forgiving of most events but is vulnerable to an occasional knocking of the ball over the rim of the 'saucer' shape shown in the diagram. The managing institution must, therefore, regulate against unusual occurrences - neither the 'unbridled experimentation' nor 'tiptoe behaviour' of the other two myths is appropriate: 'everything hinges upon mapping and managing the boundary line between these two states'. Technological experts are vital for this task. In contrast to all the other three, **Technology Capricious** is a random world - where the ball may slide to anywhere. Institutions with this view of technology do not really manage or learn: they just cope with erratic events, suffering the by-products of continual technological innovation.

1 Supply Side Barriers

Government organisations are - to varying extents - different from other types of organisation. While the precise nature of such differences - and the extent to which they have changed with public management reforms of the last twenty years - might be debated - most commentators would concur upon a general list which would include size; the lack of a 'bottom line' in terms of threat of bankruptcy; accountability; separation of policy and administration; public visibility; and the monopoly of some functions. We might expect that these characteristics could lead to distinctive barriers to the 'supply' of e-government - in the same way that they have led to distinct problems for government organisations in developing earlier information technologies (Margetts, 1999). In the 1950s and 1960s, government organisations led the field in information technology (IT) provision - but progressively slipped from that role and have - in general - experienced more problems with large-scale IT systems than other types of organisation. This troubled history has shaped their approach to technology in general and to the development of web-based technologies in particular. Government organisations are more likely to have developed a negative attitude to information and communication technologies, underpinned by the *Technology Ephemeral, Technology Capricious or Technology Perverse* myths outlined above. This section of the paper identifies a number of 'supply-side' barriers to the development of e-government that are particularly applicable to government organisations. First, it identifies barriers deriving from organisational cultures (underpinned by 'negative myths' of technology), second barriers derived from organisational values (which also foster distinctive approaches to technology) and third, two further supply side barriers which seem to offer a particular challenge for government - lack of organisational demand and channel rivalry.

1.1 The history of government information technology has led to a poor IT culture for many government organisations, arising from previous bad experiences with IT projects or procurements. Such a culture can mean that organisations approach web development in a 'fatalist' way, underpinned by the *Technology Capricious* myth outlined above. Previous experience of ICT projects that ran over budget, brought few cost savings or even failed to work altogether can lead to reluctance to invest in web-based technologies. For example, many UK NHS managers were scared off entering into ICT contracts in the 1990s after a series of high profile failures and became increasingly reluctant to spend even budgets already allocated. The poor reputation of NHS computing led to an extremely low Treasury threshold for ICT expenditure in the NHS, further exacerbating the problem. Such a background is unlikely to foster an environment in which managers explore possibilities for innovation via web-based technologies. This barrier to e-government is ironic, because web-based technologies tend to be cheaper and easier to develop than earlier technologies and lend themselves to a 'build and learn' technique quite distinct from the high-risk, big project approach most commonly applied to earlier information and communication technologies. Organisations that can develop a *Technology Benign* approach will be more likely to develop the more appropriate 'trial and error' methods.

1.2 Alternatively, the organisational response to previous bad experiences with IT can be a 'hands-off' approach by all staff outside the IT department, because they do not want to have their careers tainted through association with any more disasters. This response is underpinned by the *Technology Perverse* myth - and will tend to result in almost complete reliance on technical experts to deal with the problems presented by technology. In such an organisation, a traditional style IT department will tend to dominate all the agency's technological developments - including e-government. Widespread private sector experience has shown that traditional IT departments can be the worst unit to lead electronic service initiatives - partly because they have a large amount of intellectual capital invested in earlier technologies and may be resistant to the potential of web-based technologies to render their existing expertise and training obsolete. Dominance of the IT department can result in the kind of techniques used for earlier technologies being applied inappropriately to web-technologies - for example, an attitude that e-government should be delayed until some future 'big bang' release of the organisation's entire IT infrastructure - which is deemed to necessitate the postponing of low-cost developments of the agency Web site and learning about customers' behaviour until very high-cost IT investments have been made.

1.3 The *Technology Perverse* myth can also lead to a different organisational response - again the organisation places complete reliance on experts but this time on a contractual relationship with a private sector computer services provider. This is particularly likely in UK government organisations, most of which have a strong relationship with at least one major supplier after a series of initiatives during the 1980s and 1990s, including market testing and the Private Finance Initiative. These relationships or partnerships shape the context within which departments try to develop e-government. For example, departmental personnel can be unaccustomed to instigating technology-based innovations themselves and they may not know what is possible in terms of electronic services. If the contractor is the dominant party in the relationship, then it can be difficult for the government organisation to demand Internet-ready equipment without incurring huge additional costs. Contracts (particularly large ones) can take years to negotiate by which time the requirements specified in the contract are already out of date. Technological constraints like not being able to access the Internet from the office can in turn shape the culture of the Department with respect to e-government - web-based solutions are less likely to occur to senior managers if the Internet is almost entirely absent from their working life. And there are few incentives for companies to provide up-to-the-minute equipment when it is not requested - particularly in the case of the large global providers undertaking much of the systems integration and development work for the UK government, because these companies have been slow to develop web-based skills.

1.4 Perceptions of client group are also important. If staff in an organisation subscribe to the *Technology Ephemeral* myth, they are likely to view possible e-government developments with extreme suspicion, believing that technology-induced change will be minimal, that benefits at best will be modest and that the safest response is to ignore it. They will be inclined to believe that for example 'our clients don't have access to the Internet' and therefore will be unlikely to think of the Web site when planning how to communicate with them. Likewise, if organisations are not accustomed to value customer contact per se - and in general government organisations do not - then they are unlikely to appreciate the new possibilities for developing government-citizen relationships that web-based technologies provide. In general, government organisations tend to have a rather fatalistic approach to thinking about what their citizens want, partly because they do not think it is possible to find out. In contrast, private sector companies greatly value the potential of the Internet to provide them with information about what

electronic services their customers will and will not use - because the alternative has always been to spend large amounts on advertising, the benefits of which are hard to assess and take a long time to materialise. Changes to web-based services however, can be assessed almost immediately via easily obtainable usage statistics and the e-mail responses of customers. Government's reluctance to institutionalise this method of assessing the value of electronic offerings is a clear cultural barrier to the development of e-government and is illustrated by the (significant) proportion of UK government departments and agencies that do not collect usage statistics.

1.5 In addition to organisational cultures underpinned by alternative myths about technology, organisational **values** may work against the development of electronic services. It has been suggested that government organisations have distinctive administrative values (see Hood, 1991), which have moved throughout the 1980s and 1990s to what Hood calls 'sigma' type values of economy and parsimony, where the priority is the matching of resources to narrowly defined tasks. But much as government organisations have changed over the last twenty years of 'New Public Management', particularly in the UK, it is still possible in most government organisations to discern the values of formality, uniformity, hierarchy and robustness. These values all make it more likely that an organisation will develop a *Technology Perverse* approach, trying to regulate against unusual occurrences. All are threatened by - and can work against - web-based developments. First, with respect to **formality**, widespread use of e-mail in particular challenges formal notions of how government correspondence should be dealt with - seeming to fall somewhere between a telephone call and a letter, but at the same time blurring the distinction between the two. Many government organisations try to treat e-mails as letters, for example by filing all e-mails on paper. There is in any case a widespread sense that for certain matters, communication by e-mail is inappropriate - using e-mail to dismiss a colleague would be considered insensitive (Spears et al, 2001: 24) - and this is a particular problem for government organisations, which tend to see its use for many activities inappropriate. And the informality of e-mail addresses creates another problem - it seems unlikely that government officials will become comfortable with the idea that an e-mail address is 'official' enough to be appropriate for government communications. Yet if e-mail addresses are not seen as official, moves towards proactive service delivery (see below) will be almost impossible to implement. Formality as an administrative value can also lead to lack of willingness to 'have a go' - an attitude to which the 'build and learn' nature of web-based technologies is best suited. This cultural characteristic of civil service organisations seems to be country specific - UK government organisations have a strong tendency to insist that innovations are fully developed before they can be used while Australian civil servants point to their own 'try it and see' approach (perhaps underpinned by the *Technology Benign* myth) to technological innovation.

1.6 **Uniformity** is a second administrative value which is particularly applicable to British government. Differential levels of Internet penetration across different societal groups and the multi-channel approach essential to developing web channels challenge uniformity - the perceived need to communicate with all citizens in the same way. A more flexible approach, which recognises that an initiative that would not work with the elderly might work for students, for example, maximises the potential of web initiatives. Information on the Internet can be more easily individually targeted and personalised than other mass media (Spears et al, 2000: 15; Cooper, 2000). The increasingly sophisticated segmentation, targeting and customisation to which web-based strategies are best suited work against uniformity.

1.7 **Hierarchy** is the most traditional of cultural values of government bureaucracy, its defining feature. In particular, intranets and the sharing of information throughout organisations can challenge hierarchies - and can only really benefit an organisation that develops a more networked approach; ICT is distinguished by its network character' (Dutch ICT and Government Advisory Committee, 2001: 10). Networks - rather than hierarchies - are the defining feature of the Dutch government, which is one reason why e-government is more advanced in the Netherlands than in the UK. A hierarchical approach can lead to a very centralised kind of web development - often underpinned by the *Technology Perverse* myth as outlined at 1.2 above - which works against using existing initiatives outside the control of the government organisation (those already developed by private sector organisations, for example). Thus the UK health site *www.nhs.uk* does not make use of or even link to the numerous useful private sector health sites, such as *www.patient.co.uk* or even the excellent Web site of the British Medical Journal at *www.bmj.org* - yet the whole relationship between doctors and patients is being challenged by citizen use of these and countless other sites. A hierarchical culture can also be particularly threatened by - and develop strategies of resistance against - the more advanced use of web-based technologies by some pressure groups - disabled groups, for example, see the Internet as a major tool for challenging policy-makers. Hierarchical approaches can also work against one of the key benefits to be derived from e-government - its contribution towards 'joined-up' government. In particular, one-stop shops where citizens receive a variety of government services have been advocated since the 1970s - to overcome the disadvantage to both citizens and government of data being held in several places at once and citizens having to deal with several departments. In the Netherlands talk is now of 'zero-stop shops', where customers do not even visit a counter but are reminded of their rights to a particular benefit or service by the appropriate government agency. But cultural resistance within departments can work against joined-up government. In particular, in the post-NPM British government where larger departments have been broken up into agencies, agencies as well as departments can have difficulties working together on technology-based initiatives - in spite of the efforts of central co-ordinating agencies (Margetts, 1999).

1.8 Another traditional defining characteristic of government organisations is '**robustness**' (Hood, 1991). The dangers to government sites from electronic hackers poses a particular barrier to government's image of itself as 'robust'. There is a perception within government that transactions with government must be particularly secure - making the introduction of e-government more technically difficult and expensive than it might otherwise have been. Hence governments all over the world tackle the design and development of a public key infrastructure (PKI) which will guarantee secure transactions between organisations and individuals. The Government Gateway, for example, a business portal for UK government currently under development relies on the notion of digital certificates, which organisations have to purchase in order to undertake electronic transactions with government. The Government Secure Intranet (GSI) provides top-level security for officials within government to communicate -and the fact that security levels are set so high works against some of the potential advantages of e-government - GSI might aid 'joined-up government' more, for example, if local government personnel were able to use it too. Such initiatives can fail to recognise those government transactions that just do not need a level of security higher than non-government transactions; for example, what is the likelihood that individuals or businesses will make tax returns on another's behalf? The perceived need for government to have impenetrable security can struggle against the group dimension to hacking culture whereby kudos is gained by breaking into protected institutions (Spears et al, 2000) with the potential for a spiralling effect as hackers become increasingly innovative.

1.9 Lack of **organisational demand** can also constitute a supply side cultural barrier to innovation - both intra-and inter-organisational. In some governmental organisations, as noted above at 1.3, web development has been hampered by the fact that staff themselves do not have Internet access and cannot see their own web sites while at work. Civil servants in some countries (for example, those countries with higher societal rates of Internet penetration) might find such a situation unthinkable - no Dutch civil servant would put up with not having Internet access (use of the Internet across society in general in the Netherlands is much more widespread than in the UK). Likewise, inter-organisational rivalry can also bring demand that fosters innovation. Competition between departments in the Netherlands seems to provide as great an incentive for internal innovations in electronic service delivery as the centrally imposed targets for electronic service delivery in the UK. Such competitiveness can be fostered: the main government portal site in the Netherlands, www.overheid.nl has a ranking of the best local government web sites and local aldermen are keen to encourage their local governments to rise in the league table.

1.10 **'Channel rivalry'** has been a problem for private sector companies seeking to introduce Web and Internet models of selling and organisation - and it is an especially important potential barrier for government. The key cause of channel rivalry is that people and organisations who make a good living out of doing things one way will be understandably reluctant to imperil their livelihoods. And in some circumstances their resistance may be able to slow down radically or even stop altogether the development of new Internet-based business models. Consider a car manufacturer Zos Cars who currently sells cars to consumers via a network of dealers, each of whom takes 40 per cent of the cost of the new car as their slice of the cake. If Zos could simply set up a Web site selling cars without the dealer mark-up, perhaps they could cut prices to consumers quite radically - offering a 'no frills' sale with only minimal trouble-shooting follow up. But Zos is highly dependent in the current market situation on their dealers to advertise Zos cars locally and to provide accessible showrooms where customers can see and touch Zos cars before they buy. The dealers will be very annoyed to see their prices undercut by Zos itself, and may respond by switching their loyalties to another manufacturer, so that Zos' market share would immediately be damaged. Here then one channel for making car sales, the dealer network, is undercut by attempts to develop another channel, direct sales via the Web. The likely consequence will be that the manufacturer Zos either does not directly develop Web sales at all, or does so very slowly and gradually by not undercutting its dealer network prices, which makes Web sales less attractive for consumers. The same kind of barriers to 'disintermediation' - the Internet's possible promise of cutting costs by getting rid of intermediaries - have arisen in many industries such as package holidays, airline ticket sales, retailers operating via department stores, and so on. In some cases manufacturers have been able to do more to by-pass intermediary organisations, but in all cases 'channel rivalry' has been a critical barrier to progress.

Translated into a government context the most radical way of picturing the channel rivalry problem is to see ministers and government as akin to the manufacturers of policy, trying to make connections ('sales' of a certain kind) to citizens or enterprises. The existing mediating channels for policy delivery are then the government departments and agencies with an established position in that policy sector. Government can ask these established intermediaries to create new Internet-based channels. But how likely is it then that they will have either the interest/incentives to respond or the organisational capabilities for doing so? Of course, while it is perfectly legitimate and understandable for people operating in private sector intermediary bodies to defend their livelihoods as best they can, officials in public service bodies are supposed to respond faithfully to policy imperatives decided by ministers or political

decision-makers. Public officials normally react adversely to any suggestion that they are not full-heartedly implementing all aspects of government policy. And indeed it has historically been one of the great strengths of the British system of public administration and public management that implementation of new policy lines has generally been very predictable and relatively swift. But we do not need to posit conscious opposition ('sabotage') by public officials to envisage a possible channel rivalry problem in asking a non-e-administration to become an e-agency - only a degree of lack of positive enthusiasm allied with a very natural tendency for people to not want to do themselves out of a job and not want to embark on courses of action that are unfamiliar and seem potentially threatening in some aspects. For the channel rivalry problem in government to become so severe that progress on e-government slows to a crawl it may only be necessary for officials to show a degree of reluctance and lack of initiative. Key symptoms of this kind of reaction could be several or all of the following:

- a general reluctance to experiment with e-based methods of delivery, until and unless the agency is conspicuously 'lagging' behind other agencies;
- a tendency to find reasons for inaction and for exaggerated risk-averse behaviour on Internet or Web issues;
- an unwillingness to divert resources from established ways of doing things to developing Internet communications or transactions;
- a tendency to regard putting services on the Internet as something that must be added on to all the activities that the agency does already;
- a related attitude that any progress on e-government demands the commitment of tagged additional resources by the government or by higher-tier agencies, without which nothing can be done;
- an attitude that no e-government innovation at all can be responsibly entered into until the clearest possible financial case for it can be made, including a high rate of return, but without making any effort to map the consequences of not developing Web or Internet-based interactions, to cost the risk of growing obsolescence in the agency's IT infrastructure, or methods of working, or to see that a reluctance to develop e-government can lead to a cumulative lag in the agency's progress;
- a chronic refusal to calculate the marginal costs of dealing with clients via office visits, or via letters and correspondence, or via phone calls and call centres, compared with the marginal costs of Internet or Web-based interactions. This stance is usually justified by the claim that since these other modes of interaction are required by law or are already established they cannot be reduced or run down in any way in favour of Web- or Internet-based interactions - that is, an insistence that there are no opportunities for displacing high marginal cost interactions into low marginal cost interactions;
- an insistence that because of some unique feature of the agency's business its methods of working can become seriously out of line with those used in other agencies or related areas of the private sector; and
- a belief that methods of working in electronic services delivery will soon 'settle down', allowing laggard agencies to catch up with the current leaders in a once-and-for-all and low cost way or that e-government is a 'fashion' that will soon pass, usually buttressed by claims that the 'dot.bomb' experience shows a lack of public demand for Internet interactions.

2 Demand Side Barriers

Not all barriers to the development of e-government come from within government organisations. In society at large there is inevitably a resistance to using the Internet in general and government offerings on the Internet in particular. What some commentators have identified as a 'triple A' vision of the Internet - affordability, access and anonymity (Spears et al, 2000) - is not affordable enough, accessible enough or anonymous enough for everyone. This section of the paper identifies five cultural barriers to citizen use of e-government that can develop within society. Like organisational responses to e-government, individual and group responses to the new technological environment may be underpinned by the cultural myths of *Technology Capricious, Technology Perverse, Technology Benign and Technology Ephemeral*. The choice of myth is shaped by the type of relationship that citizens have with a given government organisation or by previous experiences with technological innovation. This section goes on to identify two further 'demand side' cultural barriers that derive from citizens' rational response to being asked to change their behaviour - a need to see a clear benefit (in terms of time, money or increase in quality) from electronic service delivery; and the possible transaction costs that can result from such a change.

2.1 The most obvious cultural barrier to e-government from the demand side is the problem of **social exclusion** caused by the problem of unequal access to the Internet per se. Even while Internet penetration continues to rise across all social groups, the 'digital divide' between those with Internet access and those without seems to be widening; the latest release of the US Department of Commerce's survey 'Falling Through the Net' (2001) suggest that the digital divide between rich and poor, white and non-white, well-educated and poorly educated, has widened significantly during the last five years. Some have argued that an e-elite (Castells, 1996) is emerging as well as an e-underclass (e-Economist, 24 June 2000) which replicate those of non-Internet society. The e-underclass is likely to subscribe to the *Technology Capricious or Technology Ephemeral* myth - believing either that e-government initiatives will make no difference to them, or that they will have some kind of damaging effect. Until Internet radio becomes a substantive part of government's offering on the web, literacy will remain a bar to e-government just as to earlier transactions with government. And there is evidence that on the web, previously marginal groups may continue to be marginalised when they are connected (Burrows, 2000; Spears et al, 2000; Thomas and Wyatt, 2001). All these characteristics of the Internet society have the potential to work against e-government - particularly as those groups with whom government organisations deal are often the most likely to be excluded.

2.2 E-government initiatives have to be capable of **domestication**. Social psychological research into how people accept technological innovations shows that innovations that cannot be domesticated into personal, everyday routines, are unlikely to be used (Silverstone, Frissen). E-mail, described by many commentators as 'the killer application' is a good example of a technology that has been domesticated and is being used on a widespread basis. In contrast, although many households contain PCs with a wide range of applications, in the majority of households most of these applications

remain unused - and have not been domesticated. Many innovations just do not have this domestication potential - developments that use a 'life-event' approach are examples almost by definition. This potential barrier may be a rational response to previous technological innovations which after initial hype did not emerge as widespread or important, thereby promoting a *Technology Ephemeral* approach.

2.3 Citizens' existing relationship with government organisations will obviously affect their approach to e-government services offered by that organisation. If they have a low **expectancy** of a government organisation - then they will not look for that organisation on the Internet and will continue to use traditional methods to deal with it. Low expectations can be further lowered by early, bad web sites with very limited functionality, fuelling, as above, a *Technology Ephemeral* myth that the phenomenon will die away, which make it even less likely that citizens will look for such services on the web in the future. Likewise, if citizens do not trust government organisations in general, they are less likely to want to transfer information to government electronically and less likely to believe information that the government transmits electronically. In the UK trust in national government is low in comparison with other institutions: in 1999, 41 per cent of respondents said that they trusted the national government when presented to them in a list of institutions, whereas 71 per cent said that they trusted television and 67 per cent that they trusted the radio (*Eurobarometer*, Spring 1999). This level of trust (comparable to levels in France and Germany but 25 per cent lower than the Netherlands) is going to shape the extent to which citizens trust an 'e-government'. Where individuals are accustomed to a conflictual, inflexible relationship with a government organisation on paper, they are likely to expect that an electronic version of the organisation will be the same and are likely to be less willing to divulge information electronically than they would be to their bank, for example.

2.4 **Solemnity** is another characteristic that can pose a problem to web development. In some cultural contexts there is an automatic association of the Internet and web-based technologies with fun or enjoyment. As one marketing consultant put it, Japanese people buy more gadgets than in any other nation because 'technology has been translated into enjoyment in Japan for many years' and WAP mobile telephones are marketed to school girls as fashion jewellry, for example. Officials in the city government of Amsterdam, one of the more advanced of Dutch municipalities in terms of e-government, stressed 'fun' as the most important design element of their web services. But belief in seriousness - rather than fun - runs straight through virtually all UK government organisations' approach to the Web. Government sites are conservatively designed, use bureaucratic language and contain no incentives other than strict functionality for users to explore the site. In some government organisations, the 'sigma' type values of recent public management change, where resources are matched to narrowly defined tasks in a sparing fashion (Hood, 1991) have exacerbated this problem - working against creativity in web site design.

2.5 Imbalances between government and societal use of the Internet mean that sometimes government initiatives will not touch currents of interest and involvement - that a culture will develop that is **exclusionary** to government. Social associations and society in general (particularly in countries where Internet penetration is high) seem to have been more likely than government organisations to subscribe to the *Technology Benign* myth and have been more imaginative in their use of web-based technologies which in turn have had a more transformative effect, leaving less room for government to develop initiatives itself - as niche markets for citizen interest are already covered. Some governments explicitly recognise this threat: a report of a Dutch parliamentary committee tasked with assessing the government's role in the information

society through 2001 noted: 'Government in the Netherlands will face an insidious crisis if it does not quickly take measures to support new democratic processes. Failure to take such actions will result in loss of legitimacy.' (ICT and Government Advisory Committee, 2001: 9). Examples of government exclusion may arise when government organisations initiate a 'chat room' or discussion about issues and find that while their usage levels are low - electronic debates on issues elsewhere may be more vibrant. In the Netherlands for example, the Ministry of Transport initiated a discussion of traffic congestion in Rotterdam, but found that an on-going discussion group entitled the 'pub of the tired cyclists' was far more popular - to influence the debate, the Ministry would have been better joining the other discussion group rather than starting its own. Likewise, if world leaders were to initiate an international electronic debate on climate change, they might find themselves excluded from debates occurring in the NGO environment.

2.6 There must be clear **citizen benefits** for what is being offered electronically - citizens have to need or want it and see clear benefits for using electronic media rather than more traditional means of communication or transacting. Government organisations may interpret low usage figures as sign of low demand for electronic services - but they are more likely to signify lack of demand for the given service in particular (or a badly designed website). During a recent housing shortage in Amsterdam, one of the social housing corporations put all available homes on the Internet - and immediately received 30,000 hits a day. After one week they had to put advertisements on the TV to say the servers were overloaded. When the demographics of users were analysed, there was no difference found between poor/rich, ethnic minorities, low/high education - only in age. Evidence like this suggests that where citizens really want something, they are willing to try electronic communication. If however, services are not available, another barrier to their development might be a lack of proactively 'demanding' citizens. During the foot-and-mouth crisis in the UK, some farmers appeared on television complaining of the lack of information provision on the web - but this was probably the first time that UK government citizens have publicly demanded electronic information. In a country with higher rates of Internet penetration than the UK, government organisations may be under more societal pressure to provide services electronically.

2.7 The **transaction costs** of change, of transition to using an electronic medium, can create a strong initial barrier for citizens to adopt electronic communication with government. For people to change an established way of doing something (such as filing a paper income tax form) and instead to adopt a new technology or channel of communication (such as sending in an electronic tax form) there is a substantial immediate cost - the cost of finding relevant information, the time and possibly frustration costs of learning a new way of doing things, the cost of putting right any mistakes produced by unfamiliarity, and so on. Studies of human behaviour have repeatedly shown that very small, up-front transaction costs like these may stop people from making an investment of time or energy that would pay them back many times over in the slightly longer run. Once electronic services have been introduced and are being used, government agencies also need to look out for possible costs or 'negative incentives' that can result from disparities developing between electronic and non-electronic service delivery - for example in the US electronic filing of taxes actually fell by 3 per cent during 2000-2001, as taxpayers became aware that electronically filed forms were scrutinised more thoroughly than those filed in paper form. Such disparities clearly work against citizen benefits from electronic initiatives and can make citizens more reluctant to enter into electronic transactions.

3 Overcoming Cultural Barriers

Identification of cultural barriers is one step towards e-government - the second is, of course, to overcome them. Overcoming barriers may have to involve tackling the cultural myths at the heart of resistance to e-government - trying, for example, to move away from *Technology Ephemeral and Technology Capricious* attitudes and foster a move towards more positive approaches such as *Technology Benign*. This section includes some suggestions for ways round the cultural obstacles outlined above.

3.1 **Incentives** for change are important for staff, in order to overcome the **channel-rivalry** problem (1.9 above). Where non-electronic means of administration are still predominant then it is important to recognise that existing staff can see their whole future as bound up in the continuation of paper-based systems of administration. Older staff and perhaps staff in the most senior positions can especially feel threatened if large-scale changes of work practices are in prospect, perhaps feeling that they are 'too old to change their ways now', and also finding Web and Internet based models of administration unfamiliar and technically threatening. Even if staff have assurances of job security or any downsizing in staff taking place through voluntary redundancies or natural wastage, it is important to appreciate that an organisation transitioning towards a 'fully digital' model will not be the same. The systems of control, the hierarchy of management roles, the kinds of people who rise to the top - all these may change quite quickly. This may mean improvements in job satisfaction for many - private sector experience has shown that moving to electronic processes can remove routine tasks while allowing staff that remain to become more skilled - but such changes have to be carefully presented.

3.2 Likewise, **citizen benefits** of e-government can be maximised by using incentives to encourage citizen uptake of electronic services. If government can cut costs by delivering services electronically, it must seek to pass on as much of that cost-reduction as feasible to citizens - which in turn may increase take up, and further reduce the cost of government service delivery. To achieve this spiral, government organisations needs not just to look to save money itself but to add incentives that help citizens overcome the considerable change or transition costs of learning how to do something electronically - in the same way that ferry companies, for example, pass on the benefits of customers booking via the website by taking five pounds off the price of a ticket bought on-line, or utility companies have long offered tariff reductions for customers who pay by direct debit. Financial incentives can be offered for citizens to file taxes electronically - in the Netherlands, taxpayers are promised any refund by a certain date if they file via the Internet. Such incentives have to be realistically designed so that they really are incentives - if financial incentives are offset by additional expenses (such as buying appropriate security measures, like digital certificates) then they will obviously not work.

3.3 To overcome the initial barrier of transaction costs (2.7), the introduction of incentives may need to follow private sector business models and practices, recognise explicitly that there are transaction and transition costs and then plan in an active way to overcome them. For instance, when the banks have introduced new technologies they have run special campaigns in which staff take people through in a personal way how to use the new arrangements, whether ATM machines, or phone/correspondence based accounts without counter service, or Internet banking. Another similar example concerns airlines trying to get passengers to use automatic ticketing and check-in machines in order to cut queuing times and also allow them to cut down on staff costs of manning so many check-in desks. Even though passengers who make the transition will be much better off, people may be very reluctant or unsure whether they can switch and need counselling and active help to do so. So agencies may need to go through a higher cost transition phase in the short term, with more personal interactions with customers by staff or more extended average interactions for a time, in order to be able to reap the longer term advantages of electronic interactions, such as the elimination of keying in of paper forms or reducing loads on call centres by displacing interactions to the Web or Internet. Once electronic services are underway, agencies need to look out for possible disparities developing between electronic and non-electronic transactions, also noted at 2.7 above, which can work against incentives. Again, explicit recognition of disparities and even the introduction of matching negative incentives into paper-based transactions may be required.

3.4 With regard to the question of unequal access to the Internet and therefore the possible 'social exclusion' barrier to e-government (2.1), central government has to think hard about ways of widening Internet access in general through centrally sponsored local initiatives. In the Netherlands, the Ministry of the Interior sponsored the 'digital playground' initiative, whereby the 30 largest Dutch cities were given government money to set up public Internet cafes. After the first had been created, cities were encouraged to find private sector sponsors (such as Microsoft) to set up further cafes. The project included an initiative to give homeless persons e-mail addresses, so that at least they have some kind of contact point. Specific initiatives like this one, with concrete investment and obvious incentives for sponsors, seem really to contribute to widening access - but they involve crossing organisational boundaries within government to link the development of e-government with widening Internet access - just as the parent group of easyJet (easyGroup) did when it launched easyEverything, the chain of Internet cafes. Although the cafes are run as a separate business, the original idea was to give people without Internet access the opportunity to buy on-line from easyJet - EasyEverything customers visited the easyJet site for free but paid a nominal rate for other Internet usage. This seemingly evangelical embrace of getting customers on-line has meant that within two years of launching its first transactional site, the company was selling two-thirds of its seats on-line (Lord, 2000).

3.5 Solemnity (2.4) of government web sites might be overcome by lightening the attitude to the Internet within organisations. Many government organisations (particularly in the UK) insist that their employees do not use the Internet for any kind of non-government use, which in the case of some departments can apply to almost all sites (one department, for example, prohibits its employees from using sites connected with travel, leisure, sport, entertainment of any kind and indeed the overwhelming majority of non-government sites). Yet creativity can be required to develop web-based solutions to government problems - and it may be that organisations full of staff actively using the Internet may be better

placed to think in this way. For this reason, when the intranet of the Australian social security organisation, Centrepoint, crashed after a significant proportion of employees were checking cricket scores on the ABC network during a crucial match, it was interpreted as a positive indication that staff were using the intranet. Such a positive attitude to Internet use by staff might actually encourage a more *Technology Benign* attitude and contribute to development of e-government. To successfully develop Internet services, the Internet has to 'embedded' into everything the organisation does: as one commentator observed of the successful on-line company Dell: 'There are separate, dedicated Internet teams, but the Internet is also a part of everyone's job across the company' (Lord, 2000: 118).

3.6 Finally, in order to overcome the 'government exclusion' barrier (see 2.5), government organisations have to think creatively about increasing their 'nodality' - the extent to which they are at the centre of social and informational networks (Hood, 1983). This may actually require a substantive change to thinking about web development - rather than focussing on their own Web site, organisations might have to think in a 'de-centred way' about the extent to which their services are offered on the sites of other organisations. So an environmental agency that gives advice on sustainable products might need to liaise with a variety of retailers to ensure that their information is presented. Such an approach requires government organisations to tackle the *Technology Perverse* myth that has developed internally and to foster a more decentralised approach to technology - rather than leaving it entirely to a centralised band of experts. In the same way, to make innovations acceptable to citizens, government organisations have to develop ways of understanding how citizens use the Internet, what they use it for, what underpins societal myths about technology - and what innovations could be 'domesticated' (see 2.2). EasyJet's successful move towards on-line provision involved working out which of the determining factors in customers' choice of flight could be conveyed more efficiently on a screen. This led to realising that many customers are not sure that they want to go - only that they want to go somewhere, for a long weekend or whatever. For the first time, the company worked out that for this type of potential customers, ringing up an airline and saying 'Hello, I want to go somewhere please' felt ridiculous whereas exploring the range of possible destinations on a web site was acceptable (Lord, 2000). This kind of thinking about web development can mean overcoming the barriers of hierarchy and formality and accepting that a centralised and controlling strategy may not make the most of what the Internet has to offer.

Appendix 1 Quiz for government organisations implementing e-government

How easy or difficult will it be for your organisation to move towards a digital future? Take this self-test to find out!

The focus here is on cultural barriers to change and acceptance of e-government ways of doing things. But the questions range more broadly, over variables which in our experience are important for understanding how far along an organisation is in adapting to an e-government and an Internet/Web-based system of administration.

Organisational technology access levels

All the questions in this section ask for percentage answers, but convert them into scores as follows:

Under 10%	Score 0
10 to 25%	1
25 to 50%	2
50 to 75%	3
75 to 90%	4
Over 90%	5

1 What proportion of the agency's staff work with PCs or computers on their desks (or use portable PCs in their work)?

2 What proportion of staff work with PCs or computers that can show Web pages or Intranet pages to Web standards?

3 What proportion of staff have current access to an Intranet from their desk if they want to?

4 What proportion of staff have access to the Internet and the Web from their desk?

Quality of Web site Intranet

5 Which of these statements best described the nature and quality of your organisation's existing main Web site?

- The organisation has no Web site (or no significant pages on a wider corporate Web site) [-2]
- The organisation has a basic site with some static materials, infrequently changed [1]
- The organisation does extensive electronic publishing, makes a great deal of its information available to citizens and provides forms for downloading [2]

- The organisation regularly publishes information in interactive ways, allowing users to tailor or personalise their use of the Web site, and allows forms to be submitted on-line [3]
- The Web site combines some electronic publishing with the ability for users to complete some scattered dealings or transactions on-line [3]
- The Web site allows users to gather information in interactive ways and to undertake most of its substantial, useful transactions on-line [5]

6 How would you describe the condition of your Intranet?

- We have no Intranet as such, only a common desktop and some template files for common forms etc [Score 0]
- We have a partial Intranet, with a few common facilities and some relatively standard or unchanging information [1]
- We have a reasonable modern Intranet, with a good range of facilities that is kept well up to date [2]
- We have a full Intranet which plays a central role in a sophisticated knowledge management system designed to pool information available inside our organisation as much as possible [4]

Staff usage of Intranet/Web

7 Of the staff who could look at an Intranet, guesstimate how many of them actually do so on a daily basis? [Score 0 if you have no intranet]

Hardly any (under 10%)	Score 0
A few (11 to 33%)	1
Some (34 to 50%)	2
Most(51 to 80%)	3
Vast majority (over 80%)	4

8 Of the staff who could use Web pages or other Internet information in their work, guesstimate how many do so in any week?

Hardly any (under 10%)	Score 0
A few (11 to 33%)	1
Some (34 to 50%)	2
Most(51 to 80%)	3
Vast majority (over 80%)	4

Top Managers' views of the Internet and the Web

9 Which of the following statements best sums up (comes closest to) top management attitudes towards employees' use of the Internet or Web?

- Employees cannot be trusted to use the Internet responsibly, and so only those with a particular need to access the Internet are allowed access [0]
- Use of the Internet is only allowed for business purposes, so that access is restricted to fairly senior white-collar jobs only [1]
- All use of the Internet in the workplace must be strictly for business purposes. Employees are generally given access but no personal uses of the Internet are allowable [1]
- All use of the Internet in the workplace during business hours must be strictly for business purposes, but employees are generally given access. Managers also allow employees to make personal use of the Internet, but only during lunchbreaks or before and after working hours, and so long as only acceptable sites are accessed (eg for e-mail, e-shopping, looking up timetables, accessing the media or other legitimate information sites etc) [2]
- All employees have access. They are told that using work PCs to access 'dark side' sites (such as pornography or gambling sites) is banned, but are essentially trusted otherwise to behave responsibly during working hours [4]

10 Which of the following statements best captures top management's attitude to the importance of Internet developments and the agency's Web sites for the overall development of your organisation?

- They appear somewhat hostile to Web developments or electronic services. They seem to see these issues as a diversion from the agency's main activities [-1]
- They give no real indication of their views on Web developments or e-government, and seem little involved with these topics one way or the other [0]
- They recognise a need to develop e-services and Web facilities, but only if extra money is available to fund them and so long as there is central pressure for agencies to meet e-government targets [1]
- They give a positive response to initiatives from elsewhere, but top management attention to the issue is otherwise a bit irregular [2]
- They give a strong positive lead encouraging Web and e-services developments, which is consistently present [4]

Management arrangements

11 Which of these statements comes closest to describing the funding arrangements for Web site developments and other Internet-based e-government aspects in your organisation?

- There is no distinct or integrated budget for Web or Internet developments and changes have to be financed irregularly from odds and ends of monies put up by several different divisions or sections [0]
- Special funding for Web or Internet developments is available episodically for major projects, but maintenance and continuous development is sometimes a problem [2]
- Web site and electronic service developments are accepted as a regular part of the budgeting process, with regular capital amounts and planned revenue funding [4]

12 Which of these statements comes closest to describing the arrangements for evaluating Web site and other Internet-based methods of delivering services against conventional methods of delivering services in your organisation (such as office visits, phone calls, and surface mail)?

- E-services are not normally considered as relevant in determining the agency's main pattern of services provision [-1]
- E-services are seen as appropriate only to some of the organisation's main services provision activities and to meet some needs [0]
- E-services are often (but not always) considered as possible alternatives to existing services that are not working well or as alternatives to new conventional forms of provision [2]
- E-services are always considered whenever the agency is examining changes to existing services, and when possible new service provision is being examined [3]
- E-service alternatives are used to survey all the agency's current activities and to review systematically what can be done on-line [5]

13 Which of these statements comes closest to describing your organisation's strategy for electronic services provision and e-government?

- There is no e-business strategy or plan [-1]
- There is an e-business strategy document, but it is chiefly seen as window dressing necessary for getting external funding [0]
- There is a genuine e-business strategy but it is undemanding and envisages modest and slow change [1]
- The e-business strategy commands strong support and entails real substantive changes [3]
- The organisation is committed to maximising its use of e-business approaches, or becoming a fully digital agency [5]

14 Which of these statements comes closest to describing the importance of the Internet/Web and e-services for your organisation's communications and marketing strategies?

- The Web site and Internet access play no important role in our communications or marketing strategies [-1]
- The Web site and Internet access play a static role in advertising how people can contact us only and providing some mainly unchanging background materials [0]
- The Web site and Internet access play a minor role in supplementing other communications and marketing strategies, for instance providing an archive of press releases [1]
- The Web site and Internet access play a substantial and dynamic role in communications and marketing strategies, but they are subsidiary to more conventional PR and marketing activities [3]
- Web communications and new media play a key role in all aspects of the organisation's communication and marketing strategies, and they are evaluated for cost effectiveness on level terms against conventional PR and marketing for all agency campaigns and initiatives [5]

15 Which of these statements comes closest to describing the organisational background for supporting Web and Internet developments and e-government policy-making in your agency?

- No one is responsible for e-government policy in the agency [-1]
- Several or many different units play a role in promoting e-government policy and it is not clear which if any has overall charge [-1]
- E-government is mainly an IT issue, and so the IT section has primary responsibility for promoting Web or Internet developments [0]
- Web development is undertaken by one section and Intranet provision by a different section [1]
- Web and Intranet developments are both the responsibility of the Library or Research division [2]
- Web and Intranet developments are both the responsibility of the Communications division [3]
- Web and Intranet developments are coordinated by a dedicated e-government section, with involvement from others and a clear overall management line [4]

Nature of the agency's role and clientele

16 Is your agency's main role and function

- collecting taxes [4]
- regulating or providing service to firms, financed by a charge [5]
- regulating firms, financed by general government revenues [3]
- providing licenses or a service to citizens, financed by a charge [4]
- making transfer payments or grants to firms or other corporate bodies [3]
- making transfer payments or grants to individuals [1]
- physically delivering a service to individuals or firms [1]
- providing services to other government agencies [2]
- making government policy [1]

Please answer 'True' or 'False' or 'Don't Know' to each of the following questions:

17 Our client group has lower than average access to PCs with Internet access [T = -2, DK = 0, F = 4]

18 In our area of business if we are to appear as a modern organisation we must handle operations over the Web [T = 2, DK = -1, F = -3]

19 Our clients interact with us only very episodically and cannot be expected to know how our organisation or its procedures work [T = -3, DK = -1, F = 2]

20 We rarely need to authenticate in any detail who the customers we are dealing with really are (e.g does it really matter who pays a given parking fine?) [T = 4, DK = -1, F = -3]

21 If an operation can be done more cheaply over the Web rather than by conventional means, then we can offer our Web customers a price discount or cash incentive to interact with us this way [T = 4, DK = 0, F = -2]

22 In crisis situations for our organisation the Web and Internet can provide a key means of communicating to our clients [T = 3, DK = 0, F = -2]

23 Privacy issues arise in all aspects of our agency's work [T = -2, DK = 0, F = 4]

24 Our business processes require only normal commercial confidentiality in handling clients' details [T = 4, DK = 1, F = -2]

25 We could provide a better, more convenient service for most of our customers over the Web and meet the needs of customers not on the Internet by outreach workers with portable PCs [T = 5, DK = 1, F = -3]

26 We spend a significant amount of money each year re-keying information from paper forms into our databases [T = 3, DK = 0, F = -2]

27 Our client group includes many people who will want to use Web and e-mail services [T = 3, DK = -1, F = -4]

Diagnostic

Add up your scores across all the 25 questions above, and here's the verdict on your organisation:

You scored 76 or more: Congratulations. Either your agency is going digital at a great rate and in a thoroughly benign environment. Or are you perhaps the PM's e-Envoy? It is important not to over-believe your organisation's spin.

You scored 50 to 75: Things look reasonably good. Your agency is taking e-government seriously but you are realistic and recognise that there are still important thresholds and problems to surmount. Look back through the areas which attracted negative marks for you and try to think through how they are connected and what kinds of strategies might work in combating them. Look also at any other areas where you answered Don't know or secured a zero score. Why do these areas of uncertainty still exist in a well-run organisation?

You scored 25 to 49: Your agency is now around or somewhat below the public sector average, with more negatives or don't knows than positives at this time. You will face an uphill struggle in helping to promote any e-government progress. Analyse the answers where you scored positive marks and see if there is anything that connects them together and which might form a basis for creating a bridgehead for more modern ways of doing business and organising your external relations with clients. Think also about the areas where you scored zeros or answered Don't Know. Can these be linked to the bridgehead areas to begin enlarging the scope for positive changes? Finally think about the answers where you attracted negative marks. Are any of these alterable, and are any set in stone?

You scored 24 or less: These results are bad news. Your organisation is lagging seriously behind the modernisation path for government set by the Prime Minister and government policy. It looks likely that you will need extensive external assistance or a radical change of heart by top decision-makers in your organisation to get back into the e-government process in a viable way. Perhaps you should try to get your top managers to complete this quiz also?

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