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PROGRESS IN IMPLEMENTING E-GOVERNMENT IN BRITAIN:

SUPPORTING EVIDENCE FOR
THE NATIONAL AUDIT OFFICE REPORT
GOVERNMENT ON THE WEB II

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Ruth Callaghan, and Hala Yared**

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FORWARD

This report provides the supporting evidence for the National Audit Office's recent evaluation study *Government on the Web II*, published by The Stationary Office on 25 April 2002 - see references (under Dunleavy, Margetts et al, 2002) for full publication details. This report was commissioned by the National Audit Office (NAO) from LSE Public Policy Group and the School of Public Policy, UCL, and carried out by the authors. It builds on a previous NAO report (the original *Government on the Web*) undertaken by the same team and published in December 1999. The 2001 report relies on a rich wealth of evidence from public Web site censuses which could only be summarized in the published volume, but which is here provided in detail. This report and all the material included here is also available online for free download at our dedicated site: www.GovernmentOnTheWeb.org

We begin with a brief explanation of our methods and then discuss our main empirical findings in more detail than was feasible in the main *Government on the Web II* report. We reproduce all of the questionnaires which we used to code facilities and features on all UK or English central and local authority agencies' main Web sites, and we provide a detailed breakdown of the results for every question. We hope that this information will be useful for both senior and e-government staff in central and local government considering how to progress Web provision and Web-enabling of services in their own agency or authority. During our research we found many people concerned to assess how well their organization is doing compared with others and frustrated by the lack of detailed guidance on what is currently feasible at low cost.

The whole field of e-government in Britain is still in its infancy, with rapid technological, funding and organizational changes occurring every few months, in part sustained by the strong lead given by the Prime Minister and the programmes run by the Office of the e-Envoy. But in our view the most important determinant of effective e-government change is still the transformation of organizational cultures and personal mind-sets which is required for an agency to move towards more digital modes of operating (see Margetts and Dunleavy, 2002). In our conversations with hundreds of staff across the public sector, private companies and overseas governments during our research we were struck by the diversity of experience and innovations being pioneered in

different locations, but also by the lack of a clear idea of what is now 'good practice' for public services Web sites. Our hope is that this report will be prove helpful in taking forward the consolidation of attainable good practice on a broad front.

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1. INTRODUCTION: METHODS FOR RESEARCHING E-GOVERNMENT CHANGE

The development of the Internet and the World Wide Web have posed important challenges for governments across the developed world. Most public sector agencies' administrative processes have developed first around manual and paper-based processes, and then in the post-war period around conventional information and communication technology (ICT) systems (on which see Margetts, 1999). But the lessons learned and the managerial cultures developed for handling either paper systems or pre-Web kinds of ICT systems are not necessarily easily transferable to managing the Web-enabling of government and the transition to 'open book administration', which the current e-government agenda has begun to offer. Instead the experience of a wide range of many different countries now suggests that achieving effective 'government on the Web' will be a process that requires substantial changes in the managerial and organizational cultures of public sector agencies. This transition promises to be as difficult and traumatic in its own way as the convulsive effects which the Internet has had on the organization of private sector companies (Margetts and Dunleavy, 2002).

A small but important aspect in organizations coming to terms with the transformative challenges of the Web and Internet processes is the development of new ways of charting the use and development of Web services. Many public agencies have lagged years behind comparable private sector organizations in closely monitoring how different types of clients or customers are using agency Web sites, or tracking which parts of their Web sites are being well used and which are not. Web managers in many British central government organizations in 2001 often had no consistent over-time picture of trends in their sites' usage in terms of the numbers of page impressions or requests, the number of user sessions or visits, and the average time which users spent on their Web sites (see NAO, 2002, Part 4). It was even rarer to find public sector Web masters regularly and consistently 'playing back' details of usage of different parts of their site to the content providers who originated the materials concerned.

With no or few comparative data available within the government sector, agencies also face problems in establishing how well their Web sites are doing compared with other organizations of their type or operating at the same level of government. For central agencies charged with encouraging or regulating e-government processes the task of cost-effectively gauging progress across a whole raft of agencies for which they are responsible is also a considerable one. Top-level public sector bodies often frame this kind of problem within a paper-based approach to finding information. They see their main option as one of imposing additional monitoring and compliance costs on the agencies, which answer to them, by requiring them to submit information returns about their Web sites. It is a difficult task indeed to envisage providing guidance to several hundred other public sector agencies on how they should provide consistent and useable information about their Web sites, and as a result relatively little information of this kind has been collected, either in Britain or in other advanced liberal democracies.

Sometimes central agencies consider issuing a questionnaire to the bodies which they supervise, asking chief executives or responsible officers to fill in relatively simple or straightforward evaluative questions. Here the standard wording of questions in such a reactive survey may improve the consistency of the data compared with asking for mandatory information or statistical returns (see, for instance, the survey of agency chief executives in Part 1 of the 1999 *Government on the Web* report, NAO, 1999). But the information generated tends also to be rather vague or impressionistic, and susceptible to radically different responses to different question wordings. Ultimately it relies on interpretations or judgements made by respondents about judgemental or evaluative questions asked. And like all organizational surveys it can be difficult to know which person at which rank has actually filled in the questionnaire. These difficulties with creating statistical returns or performance indicators, and with reactive surveys, mean that it has often been seen as too politically difficult or too costly to monitor e-government progress in any extensive way, or too likely to produce unreliable, inconsistent or overly judgemental data.

A third approach sometimes used by central control agencies or outside observers (such as e-government consultancy firms) is to try and reduce the complexity of covering all Web sites of a certain type by looking only at sub-sets of a mass of agencies; and to try and standardize evaluative or coding criteria by getting a small group of experts to 'rate' sites. But progress here has been slow. It has been hard to effectively draw a

sample of Web sites, in the absence of up-to-date and comprehensive databases of public sector Web sites, a field which still represents a constantly changing picture. Because even the most basic information about e-government has been scarce, it has not yet been feasible to develop useful criteria for setting sample requirements or 'quotas' for including different types of agencies in samples or sub-sets of the data. And relying on 'expert' or 'jury' judgements to assess whole Web sites (as many management consultant 'surveys' do) seems a process fraught with difficulties. Even offsetting several 'experts' views' against each other, the subjective and uncodifiable nature of the component assessments is a problem, making it infeasible to ever replicate such 'research'. And the process by which juries of experts move from their views of different aspects of a site to an overall grading or judgement or assessment of it seems equally unstandardised and hard to ever recapture.

However, all these approaches to developing 'government on the Web' performance indicators have now begun to look distinctly old-fashioned. They seem to leave out of account the importance of the Internet itself in making feasible new technologies for studying and recording how large communities of Web sites are developing. It is now feasible for small centrally-placed research teams to generate a mass of more reliable information about Web-site developments across large numbers of agencies using techniques known as 'unobtrusive' or 'non-reactive' approaches and focusing on objective measures which can be more reliably or consistently coded.

This is our approach here. In 1999 and again in October 2001 we recruited a team of post-graduate researchers from the London School of Economics to access the main Web sites of all central government agencies in the UK and England (excluding agencies with a focus on Scotland, Wales and Northern Ireland, which fell outside the scope of our commissioned research). Note that we call this exercise a *census* of Web sites, because we accessed *all* agencies' main Web sites (wherever we could find them) instead of any kind of sample or a sub-set selected on some criteria. We trained the team in understanding the coding frame, and then assigned pilot forms to them. Pilot forms were then assessed and our coding methods fine-tuned. The results from coders cross-checked by the main research team and coders closely monitored to ensure consistency. The coders used LSE computer classrooms with powerful modern PCs using a standard ICT set up and the same browser (Internet Explorer 5.0 in 2001). The full coding frame and basic results for all items used in 2001 are shown in section 4.2 of this report, which also

reports results for 40 data items originally asked in 1999 and re-asked in 2001 using fully consistent question wordings. Our 1999 questionnaire included many more questions, some of which were appropriate at the time but were of lesser value by 2001. The full 1999 coding frame can be downloaded from: www.GovernmentOnTheWeb.org. Both the 1999 and 2001 questionnaires focus on objectively determinable (and checkable) information, essentially the presence or absence of defined items on an organization's main Web site.

In designing the coding frame we benefited in 1999 and 2001 from detailed case study work that we were undertaking in two central government departments (one citizen-facing and one business-facing), plus in-depth analyses of government policy documents and their implementation by key central Whitehall agencies. In addition, we conducted a large number of interviews with other stakeholders, including people in a range of central agencies, private sector comparators, and overseas governments. For the Web census method to work it is important that the coding frame should be reasonably inclusive, not omitting to code for feasible features already implemented on at least some central or local government Web sites. But equally the overall profile of questions must be realistic. It needs to stick closely to what is feasible with current technology and contemporary e-government cultural awareness, not looking for 'science fiction' features which could not realistically form part of an integrated idea of good practice for today's public sector.

The Web census method has a number of limitations, which need to be borne in mind. It is inherently a conservative approach, giving agencies the benefit of the doubt wherever feasible. Our coders spent around 50 minutes to an hour on each central government site, and were well trained in typical public sector Web site features and layouts. They searched comprehensively for well-defined features which they knew in advance how to recognize, and they did not stop or give up until they had either found them or confirmed their non-presence using multiple checks. In addition, of course, all our coders had a high level of education and were thoroughly familiar with Web sites and Internet use in general. Thus in no sense was their search behaviour 'typical' or representative of most public sector Web site users or of citizens in general. Average user session lengths on commercial sites are often quite short, around or even below 5 to 8 minutes. People accessing public sector sites often spend longer looking for information, around 10 to 15 minutes being common, with a minority spending perhaps

twice as long. But it would be a very rare user indeed who looked at any Web site for as long and as comprehensively as our coders. In addition, of course, our coders' behaviour was monitored and cross-checked for consistency with other coders and with the stipulations of the research team, and we updated our guidance throughout the census exercise whenever new problems or coding issues arose. Thus we would expect that most citizens and most Web visiting a site using their normal behaviours would actually be able to find only a small proportion of the site facilities which we code as being present. In this sense our census gives perhaps the most optimistic picture possible of what facilities are present on government sites.

A second significant but much less important limitation of the Web census approach is that we focused on only on the 'main' site for each central government agency, that is the site bearing its name and formal homepage. Normally this approach will give by far the best picture of agencies' Web presence. Our agency lists were constructed from a wide range of official sources and carefully checked for duplications and mis-labelling. The 2001 list is shown at the end of section 4.2, and the 1999 list is included in the original *Government on the Web* report (HC 87 Session, 1999-2000 session, pp. 76-82 – see references under Dunleavy, Margetts et al (1999) for full publication details). We covered 310 agencies with Web sites in 2001 and 175 in 1999, and we surveyed in all 376 central agencies in 2001 and 272 in 1999. Our local authority Website census (discussed below) also covered 388 English local authorities. There are indications from an Office of e-Envoy survey in 2000 that there were around 1,000 gov.uk sites then, so in 2001 our two censuses covered a large majority of all sites in the overall domain.

We did not try to survey all the Web sites within the gov.uk domain, because it includes many sites outside our target range, including sites for all English local authorities (covered in a separate survey), sites for agencies and councils in countries outside our research remit (Scotland, Wales and Northern Ireland), and sites for non-executive or advisory bodies (again beyond our remit). None the less our selection of sites did miss a range of sites established by some central agencies and departments under other names than their main organizational URL (universal resources locator). Most of these sites do a discrete, single-purpose task. For example, the Ministry of Defence has sites which promote the armed services, mainly for recruitment purposes, and the Lord Chancellor's Department has a separate courts services site. There has been a

proliferation of site names, however, and many of these new sites either do not last very long, or are visited only when specific publicity campaigns are being run. It is not usually feasible to find them reliably even from the UK public sector portal site (www.UKonline.gov.uk) and nor would a survey of the complete gov.uk domain pull in them all because it is very common for special purpose sites to use .org or .com or .net endings in their site names. Thus in our view the regular public visibility of central government agencies still depends essentially on their main organizational Web sites.

Our 2001 report, *Government on the Web II*, covered a programme for encouraging e-government change in local councils run by the Department of Transport, Local Government and the Regions (DTLR) in Whitehall. Although a valuable set of data about local government Web sites had been created by the Society of IT Management (SOCITM), using an expert jury survey method, there was no data on local government comparable to that from our 1999 and 2001 surveys. Our study therefore sought to provide a benchmark of progress across local authorities to inform current and future policy evaluation. We replicated the Web census method for all 388 local authorities in England in essentially the same way as for central government. Because local authorities are multi-issue organizations (compared with mostly single-function central departments and agencies) the local Web census coding frame was considerably more extensive. It is shown in section 4.2 below together with the basic pattern of results for each question. Again we drew up the local sites questions after undertaking in-depth research visits to seven local authorities of different types, sampling a large number of local authority Web sites, interviewing people in national organizations for local government, and discussing issues with officials in DTLR. We also looked at overseas comparators in research visits, especially in the Netherlands and Australia, and talked to relevant private sector organizations. Again the focus of the coding frame is on facilities which are already available on at least some local authority Web sites, were easily implementable within available technology and administrative arrangements, and for which there was evidence of public demand or professional or central government support for their provision as part of good practice.