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Implementing E-Government in the UK: An Analysis of Local-Level Strategies

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ABSTRACT
Since 1997, an array of initiatives - collectively known as the local government modernization agenda - has been launched by the UK Government. This can be viewed as an attempt to transform the structures and performance of UK local authorities. A parallel set of initiatives – the electronic government agenda - has been launched since 2000, and has attempted to extend the use of information and communication technologies within local government. In this paper we present a model facilitating the assessment of e-government progress in local authorities, and report on the results of employing this model to conduct a two-year analysis of the electronic government strategies of the 22 unitary authorities in Wales. Although results obtained indicate slow but steady progress over time, and identify various instances of good practice, there remain a number of key concerns concerning the progress of e-government implementation.

Keywords
Electronic local government, ICT, public services, local authorities

INTRODUCTION
Since 1997, an array of initiatives - collectively known as the local government modernization agenda - has been launched by the UK Government. This can be viewed as an attempt to transform the structures and performance of UK local authorities, and aims to improve local service delivery, enhance community governance, and increase public confidence in local government (Beynon-Davies and Williams, 2003).

This ambitious agenda requires that by 2005, all UK government services that can be delivered electronically should be delivered electronically (Central Office of Information, 1999). The UK therefore has one of the few governments to set explicit objectives for making government services available electronically (Schwartz, 2003). However, Rogers (2002) cites a National Audit Office report in arguing that major cultural and technological issues need to be resolved in order for the 2005 target to be met. Moreover, it is becoming apparent that local authorities in England have made relatively little recent progress, with one in three of the 388 English local authorities expecting to miss the 2005 target (Flinders, 2003). The situation appears to be exacerbated by the apathy of citizens, whose use of electronic services has exhibited little growth over the past two years (Schwartz, 2003). Indeed, commentators such as Zihni (2002) now argue that original expectations for e-government are being replaced by creeping doubt within the public sector. Consequently there appears to be much scope for investigation in this area, with interesting tensions between government targets that were specified at the height of the dot.com boom, and the realities of implementing ambitious large-scale use of information and communication technologies (ICT).

In this paper we present the results of a two-year investigation intended to develop understanding of the electronic local government agenda in the UK. In conducting this study, our focus has been primarily upon Wales, which provides an interesting context for a number of reasons. Firstly, all local authorities in Wales are unitary authorities and therefore they carry out all the functions of local government conducted by County and District Councils in other parts of the UK. Secondly, under the devolved administration of the National Assembly for Wales (NafW), Welsh local authorities are taking a distinctive approach to the electronic local government agenda, which is both informed by, but different to, the English, Scottish and Northern Ireland experiences.

THE LOCAL GOVERNMENT AND ELECTRONIC GOVERNMENT CONTEXT
Within the UK, there are currently three levels of local authority: district, county, and unitary. In Wales, all county and district councils have been replaced with a single-tier system of 22 unitary authorities. Unitary authorities are responsible for a wide range of services including education, environmental health, housing, waste management and disposal, highways,
recreation and libraries. Local authorities in Wales have both a democratically elected set of council members and a permanent administration of officers, and are encouraged to operate a cabinet-style of governance structure under a program to increase the accountability of decision-making.

An array of initiatives - collectively known as the local government modernization agenda - has been launched by the UK Government since 1997. This can be viewed as an attempt to transform the structures and performance of local authorities across the UK. The expressed aims are to improve local service delivery, enhance community governance, and increase public confidence in local government. The Welsh Assembly Government has approached this modernization agenda in a different way to that adopted in England. In Wales the development of policies has been undertaken in consultation with the wide range of partner organizations with an interest in the delivery of high-quality public services.

Electronic service delivery will play a significant part in the reforms, providing 24 hours a day, seven days a week availability and promoting joined-up government, with a single transaction supplied by the citizen being used to notify all relevant government agencies (Griffin and Halpin, 2002). The Modernizing Government White Paper (Cabinet Office, 1999) challenged the government sector to organize and deliver services in ways that suit the citizen rather than the supplier, setting the target of making 25% of government services available electronically by 2002 and all services available electronically by 2008. A year later, the timescale for implementing full electronic service delivery was reduced by three years to 2005 (Silcock, 2001). This 2005 target only applies in England. No similar targets currently exist for Wales, Scotland, or Northern Ireland.

In the spending review of 2000, the UK central government allocated £350M to enable local government in England to meet its 2005 deadline (DETR, 2002). In order to obtain a share of this funding, authorities were required to produce an Implementing Electronic Government (IEG) statement detailing the actions they intended taking in order to meet the 2005 target. In the 2001-2002 financial year, £25M was allocated to pathfinder projects, 25 of which were selected for funding and 13 of which included the development of a web site for the distribution of services and products produced by other agencies. The balance of the funding was allocated to the 398 authorities who had their IEG statements rated satisfactory. The IEG statement has now become an annual return for authorities in England, with the second submitted in October 2002. Central government is using this process to monitor progress made by local government towards the electronic delivery of services. Local authorities annually publish a Best Value Plan showing how they have performed against a standard list of indicators. In Wales there are a number of differences from the approach taken in England. Most differences stem from the fact that in Wales, non-hypothecation of funding to local authorities is the norm. Hence, funding for e-government is not ring-fenced, and consequently the e-government agenda in Wales is centered around local negotiation of targets rather than nationally stipulated arrangements, and the evaluation of IEG statements is not linked to issues of funding.

A MODEL OF ELECTRONIC LOCAL GOVERNMENT

Although e-government is one of the most interesting concepts emerging in the field of public administration in recent years, it has, according to Moon (2002), not been clearly defined and understood among scholars or practitioners. According to the OECD (2003), there is as yet, no generally accepted definition of e-government, and the term itself is not universally used. Many views of e-government tend to emphasize the use of the Internet - see for instance the works of Brannen (2001), Bretschneider (2003), and Jorgensen and Cable (2002) among many others. According to the Local Government Association (2002), e-government may be defined as the exploitation of ICT in order to help transform accessibility, quality and cost-effectiveness of public services, and to help revitalize the relationship between customers and citizens and the public bodies that work on their behalf. We endorse this broader view, that e-government is not exclusively Internet driven, but includes the use of all ICT - from fax machines to wireless palm pilots - to facilitate the administration of government. It is clearly, as described by Deakins and Dillon (2002), a rich mixture of IT capabilities, competencies, and organisational administrative practice spanning both business-to-business and business-to-consumer activities, but it is not restricted to the Internet.

Despite the relatively recent emergence of e-government as a phenomenon and apparent lack of consensus surrounding definitions and models, a commonly-held view is that ICT is an enabler of organizational change focused around the redesign of service delivery to key stakeholders – partners, customers, suppliers and employees. This view that ICT offers the potential for more effective and efficient service delivery clearly links the concept of e-government to that of the value chain (Porter, 1985) – the sequence of major activities within an organization that add utility (usefulness) to the products or services provided to stakeholders.

The value chain approach, which involves "disaggregating operations into strategically relevant activities in order to understand the behavior of costs and potential sources of differentiation," (Porter, 1985, p33) has been utilized and extended – see for instance Partridge and Perren (1994), Shank and Govindarajan (1993) – to the extent that value chain analysis is
nowadays viewed as a powerful management tool for the identification and analysis of the stream of organizational activities through which products and services are created and delivered (Applegate, Austin and McFarlan, 2003). Value chain analysis highlights areas of strategic strength or weakness within an organization, and seeks to assess levels of success within a particular context. In this paper we present and employ a model based upon the concept of value chain analysis – where activities within the value chain are analyzed in order to assess the level of progress of e-government within local authorities in the UK. This model is based upon three sources of data. The first source is a literature review (articles being drawn from both academic and practitioner sources), the second is a series of observations made and interviews conducted within stakeholder agencies at both regional (e.g. Welsh Assembly Government) and national (e.g. Audit Commission) levels. The third source is a series of observations made and interviews conducted in local authorities within Wales. The first two sources were used to construct the e-government model. The third source of data served primarily as a means to test the validity of the model proposed. The model (Figure 1) distinguishes between a number of issues of infrastructure and issues surrounding the major value chains of the e-government organization, the key components being as follows:

**Supply Chain** - enablers for the upstream chain including the existence of any extranets, evidence of tele-working, and plans for, or actual implementation of, e-procurement.

**Internal Value Chain** - the state of the information systems, information technology, and communications architecture for the authority. In terms of information systems architecture the primary concern is with the integration and interoperability of information systems and integration with external standards and systems. In terms of the information technology architecture key areas include critical technology enablers such as knowledge management, document management, content management and intranets.

**Customer Chain** - enablers for supporting the downstream chain - including customer relationship management, the citizen Web-site, whether e-democracy has been considered, and what consideration has been given to the provision of multiple access mechanisms and channels.

**Informatics Planning** - critical activities of informatics planning including information audit and standardization, process mapping and design, strategy and modernization, risk assessment and cost/benefit analysis.

**Informatics Management** - issues considered important for implementing the e-government agenda, including e-championing, the form of e-government organization, and the nature of benchmarking exercises conducted or planned.

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**Figure 1. A Model of Electronic Local Government**

Customer Chain - enablers for supporting the downstream chain - including customer relationship management, the citizen Web-site, whether e-democracy has been considered, and what consideration has been given to the provision of multiple access mechanisms and channels.

Informatics Planning - critical activities of informatics planning including information audit and standardization, process mapping and design, strategy and modernization, risk assessment and cost/benefit analysis.

Informatics Management - issues considered important for implementing the e-government agenda, including e-championing, the form of e-government organization, and the nature of benchmarking exercises conducted or planned.
**Informatics Development** - considers the existence of a clear plan for development work, consideration of resource issues, and whether an audit of appropriate skills had been conducted.

**E-Community** - considers the degree to which various stakeholders had been consulted on electronic service delivery, the form of partnership arrangements implemented or planned and the existence of any form of e-community strategy.

**METHOD**

The purpose of this study was to assess progress in implementing e-government at the local level in Wales. As the study sought to explore and analyze a relatively complex and undefined phenomenon across 22 unitary authorities, it was decided that a qualitative approach would prove to be most appropriate.

During the initial phase of the investigation, the 2002 IEG statements from all 22 authorities in Wales were analyzed using a grid of criteria generated from the model of local e-government organization portrayed in summary above. The intention was to focus around enablers of key process change and aspects of infrastructure. Each authority statement was positioned against these seven themes of the model. This enabled the identification of the state of e-government within each authority and the potential for moving forward. It also enabled an effective comparative analysis and aggregation of issues and identification of best practice. Following this initial document analysis phase, semi-structured telephone interviews were conducted with nominated representatives at each authority. This involved a discussion of their IEG statement as well as issues, problems and suggestions arising from the e-government agenda. Typically, each interview took between one and two hours to complete, and resulted in the collection of a significant amount of data that was not present in the IEG statements. Space limitations precludes a detailed presentation of the interview questions in this paper, however an illustration of the seven themes of the model that framed the initial document analysis, along with the associated issues that formed the foci of the follow-up telephone interviews are presented in Table 1.

<table>
<thead>
<tr>
<th>Document Analysis Theme</th>
<th>Related Interview Themes</th>
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<tbody>
<tr>
<td>Supply Chain</td>
<td>Extranet</td>
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<td></td>
<td>E-Procurement</td>
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<tr>
<td>Internal Value Chain</td>
<td>Integration &amp; inter-operability of internal systems</td>
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<td>Integration with external standards/systems</td>
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<td>Knowledge Management/Document Management</td>
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<td>Content Management</td>
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<td>Communications Infrastructure</td>
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<td>Customer Chain</td>
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<td>Access Mechanisms</td>
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<td>e-Community Strategy</td>
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<td>Informatics Planning</td>
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<td>Skills-Base</td>
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**Table 1. Themes – Document Analysis and Interviews**

Briefing sessions were held (in North, Mid, and South Wales) for representatives of local authorities. The first gatherings (prior to the semi-structured interviews) served as informal focus groups in which our views of how the investigation was to
be conducted were presented. Subsequent gatherings served to provide open fora for representatives to reflect upon the results of our 2002 investigation. This baseline information was subsequently supplemented by an analysis of the 2003 IEG statements. Production of IEG statements by Welsh local authorities is a voluntary activity, hence only half of the authorities submitted 2003 statements. The 2003 exercise again involved a document review phase, and as with the 2002 study, the information gained was augmented with semi-structured telephone interviews and informal discussions. The themes framing the 2003 exercise remained as illustrated in Table 1.

RESULTS

Supply Chain
In the private sector, electronic enablement of the supply chain is seen as critical to modernization. However, our 2002 evaluation revealed that the supply chain was the least enabled of our themes within Welsh authorities. Many authorities appeared to be waiting on national guidance and initiatives, and few had a clear strategy in this area. Our recent results show little improvement. Most authorities indicate a commitment to e-procurement but continue to wait for national guidance to provide impetus. Support for remote working is not seen as a priority. Some authorities reference an extranet but it is generally unclear what functionality is embedded in this technology.

Internal Value Chain
Our 2002 study revealed that the enablement of the internal value chain of authorities was at a more advanced stage than that of the customer and supply chains. However, there was little description of the state of the back-end infrastructure and the integration and inter-operability of back-end systems in the IEG statements. There was also little reference to plans for front-end/back-end systems integration. Most authorities appeared to be using basic technologies such as electronic mail to good effect internally, many had intranets, and many had upgraded their internal communications infrastructure. The 2002 study also revealed that use of technologies such as content, document and knowledge management was variable, with concerns expressed over costs and unclear benefits of document management systems. The 2003 results confirmed this position, with continued references to the upgrading of infrastructure elements such as telephony, or the proposed purchase of a content management system. However, there continues to be little reference to front-end/back-end integration except where driven by front-end investment. There is now increased discussion of the need for document management systems. Knowledge management is also being highlighted by some authorities, but no authority is yet actively pursuing this aspect, perhaps due to financial reasons.

Customer Chain
Most authorities continue to express the wish to re-engineer access to government services using multi-channel contact centers supported by CRM systems. However, this option is seen to be prohibitively expensive by the majority, with only one authority being well advanced in this respect. This is not surprising as resourcing of this innovation is seen as particularly difficult for the smaller authorities. The 2002 study revealed most authority Web-sites to be content or content-plus in terms of the Society of Information Technology Manager’s (SOCITM) four-point scale of categories (promotional, content, content-plus, transactional). The aspiration amongst most authorities is for fully transactional Web-sites, and most authorities have made efforts to upgrade their sites — many by appointing new staff. Indeed, the 2003 study reveals the site of one authority to be listed by SOCITM in the UK’s top-10. Some authorities continue to use technology to facilitate interaction between councilor, officer, and citizen. However, consultation on access channel preference tends to support the view that telephone and face-to-face contact remain priorities for all authorities. There continues to be little apparent interest or work in the area of e-democracy.

Informatics Planning
In 2002, most authorities made some connection between their e-government strategy and aspects of their modernization agenda. However, this was rarely elaborated in detail. In 2003 this aspect is much improved, with references to improvement plans and national strategies such as Cymru Ar-lein and Broadband Wales. Apart from the general claim in 2002 that e-government change is organizational change, there was little evidence of process mapping and re-design besides the general consideration of process changes required at the customer interface. There continues to be surprisingly little evidence of the re-engineering of current processes.

Most authorities acknowledge the importance of information audit but not much actual progress seems to have occurred. Most have attempted an initial cost/benefit analysis but the majority of authorities are yet to conduct a thorough assessment. In terms of the financial analyses that have been conducted, the majority conclude that cost savings are unlikely in the short
term, and cost neutrality is the medium-term goal. They also suggest that most of the benefits of e-government are likely to be intangible (for example providing greater access to services and providing more joined-up service provision). Most authorities have now conducted some form of risk assessment and placed the issues of inadequate resources, internal culture change, and low-uptake of services as priority issues to be addressed.

Informatics Management.
A significant proportion of authorities have appointed the Council Leader and the Chief Executive as authority e-champions. In 2002 there was a variable level of support for the e-government agenda among elected members of authorities. However, championing of e-Government now appears to be taken for granted and little reference is now made to resistance to the e-Government agenda within authorities. In 2002, a minority of authorities created specific structures to implement the electronic agenda and had appointed e-government officers specifically to oversee this strategy. The remainder were re-using existing structures to implement e-government. Most authorities now appear to have consolidated on bespoke structures such as e-government officer appointments and task and finish groups.

Informatics Development.
Most authorities created development plans that evolved from their existing informatics infrastructure, with adequate resourcing continuing to be seen as a critical issue. Some authorities are now considering more radical and aspirational solutions for the longer-term based on early piloting of key technologies. CRM is now emerging as the most popular enabler, with several authorities either seriously considering implementation or already having implemented a system. In the 2002 study, an important aspect that was poorly addressed in most IEG statements was the degree to which authorities believed they had sufficient internal skills available to implement the e-government agenda effectively over the long-term. Most authorities claim they are now satisfactorily addressing the issue of skills.

E-Community
Commitment to the issue of the e-community continues to vary between authorities. The 2002 study revealed a minority of authorities developing their entire e-government strategy around the idea of partnerships with the community. In such authorities the community information plan was the e-government plan. However, in the majority of authorities, e-community was placed as one but not the only issue on their e-government strategy. Apart from one exception, our recent work reveals generally little progress in this area, with little mention of integration of e-government with community strategies. There is however, increased reference to partnership working with other authorities/organizations.

DISCUSSION
Following our analysis of the 2002 IEG statements, we described the 22 unitary authorities in Wales as being at one of the following three stages of development in terms of their approach to, and practical application of, e-government.

Advanced – those authorities that demonstrate substantial development in implementing most aspects of e-government.
Developing – those with an e-government strategy in place and a coherent implementation plan for moving forward on e-government. In order to assess the utility of key aspects of electronic service delivery, such authorities are piloting strategic systems, standards and technologies.
Not Fully Engaged - exhibiting little evidence of progress on any of the aspects of e-government, and may be viewed as appearing not to be treating e-government seriously.

Our 2002 analysis placed 10% of Welsh authorities in the advanced category, 80% in the developing category, and viewed the remaining 10% as not being fully engaged. Figure 2 presents a Kiviat diagram of a typical profile of activity in each category. Clearly, the key challenge was to move a substantial number of authorities from the developing category into the advanced category, while at the same time reducing the number of authorities in the not fully engaged category to zero.

There was clear evidence at this time that the level of implementation of and commitment toward e-government appeared variable between authorities. According to the work of McNeal, Tolbert, Mossberger and Dotterweich (2003), this situation mirrored that found at state-level in the USA, with some states appearing to embrace e-government far more readily than others. McNeal et al (2003) suggest that e-government implementation is generally driven by legislative professionalism (i.e. from the top down) rather than by citizen demand. Indeed, most authorities in Wales have consulted on electronic service delivery, and as a result, predict low uptake of such services in the short to medium term. These results are clearly aligned with the views of Van Thiel and Leeuw (2002), who argue that in recent years the public sector has been subject to an increasing regime of performance assessment, and one of the consequences of this is that public sector organizations often
adjust their structures and processes purely to meet the demands of performance assessment. This characteristic may be seen in the case of e-government implementation in the UK, as local authorities have responded to central government regulations and targets by directing their short-term plans and strategies at improving visible (front-end) processes and systems rather than responding to any obvious level of citizen demand. This “front-end” focus is unsurprising, given that the initial guidance on e-government in both England and Wales was focused around key performance indicators for electronic service delivery.

Moreover, an Audit Commission review (2002) of the first year of e-government implementation in England queried the long-term value of this narrow vision to the customer of local government. This review also raised key questions regarding the sustainability of the e-government agenda in terms of both the physical (people, finance, technical infrastructure) and non-physical resources (skill, plans, strategies) available to authorities. In addition to these concerns regarding progress and sustainability, a view is also developing that the case for blanket implementation of e-government services is far from proven, and that the provision of services that people actually want to use is emerging as a far more realistic and achievable solution (Zihni, 2002).

However, regardless of the merits of (or lack of) blanket implementation of e-government, part of the challenge in Wales has now been met. Our 2003 results indicate that there are no longer any authorities in the not fully engaged category. Although there has been less movement from the developing to the advanced category, we now take the view that 10% of authorities are firmly in the advanced category, with a further 10% almost in that category. As would be expected, all authorities have exhibited some progress. The overall trend is therefore slow but sure movement toward the advanced category.

CONCLUSIONS

It is clear that the UK government has set out an ambitious agenda for modernizing public services, although in Wales, the e-government agenda at local-level is based upon local negotiation of targets rather than these nationally stipulated arrangements. Our analysis of the 2002 data suggested that this approach appeared to be achieving limited success, with only two of the 22 Welsh unitary authorities having made substantial progress in implementing e-government, and with two authorities demonstrably lagging behind. However, results presented in this paper indicate that gradual progress is being made, and despite the lack of funding, an overall improvement over time may be observed.

The electronic local government agenda is just beginning in the UK, and there are no signs that interest in ICT enablement of government processes will diminish in the near future. However, given the apparent tensions between government targets and citizen demand for the resulting services, it is appropriate that we conclude with the views of Al-Kibsi, de Boer, Moursesh, and Rea (2001), who argue that three lessons are important when considering the development of e-government services; e-
government services don't justify investment if citizens and businesses don't use them; access to services is important – without access, a service cannot be used; incentives to use electronic services are important.

Given its increasing importance there is a key need to study the process of implementing electronic local government amongst a range of UK authorities over the period up to and immediately beyond 2005. Such a study will enable an assessment of the impact that the electronic agenda has made to organizational change within the local government sector, particularly its effect on service delivery. We have plans to extend our activity to include such a study in the near future.

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