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Community-Centric Virtual Government: Citizen Interaction in the e-Spaces

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Abstract

Virtual Government, exemplified by online service delivery, is a reality. The focus is now shifting towards developing citizen interaction in the web space. This paper provides a new conceptual model, applicable to all levels of government from federal to local, to support this shift. In doing so, it seeks to clarify the roles of e-government and e-governance in implementing the goals of virtual government. The concept of the e-space is introduced and proposed as the basis for assessment of the outcomes and outputs linked to these goals.

Keywords

E-governance; E-government; Community-Centric Virtual Government; Government website assessment; e-space

INTRODUCTION

It has become the norm for government to operate online, using the web as the dominant Information and Communication Technologies (ICT)-enabled interaction space. Considerable resources have been directed towards ensuring services and processes are made available online to citizens, customers and other agencies and that government is present in the web space.

In recent years, many models and tools to benchmark progress in implementing online government have been proposed by consultants, governments and other organisations (*for example* Accenture; Cap Gemini; Ernst & Young; the Bertelsmann Foundation; the Gartner Group; the Cyberspace Policy Group's Website Attribute Evaluation System (WAES) and The Office of the e-Envoy UK through ID&eA, to mention but a few). These models have an e-commerce genesis and present a concept of online government as a multi-staged one with linear, sequential implementation of these stages. Their use develops a competitive mentality in government whereby the focus becomes one of conforming to notions of best practice driven by these models, thereby avoiding headlines such as "*UK slipping in e-government league*" (Clark, 2005).

The criteria used for assessments linked to these models are often not made explicit, or if they are appear to be subjective, constantly changing and often superficially focused on the number of services available or on subjective assessments of depth of the services offered, making benchmarking of results over time impossible. Janssen et al. (2004) analysed and categorised eighteen benchmarking studies in their study funded by the Flemish government. Although all purported to evaluate e-government, the outcomes were found to fall into four different categories depending on the focus and scope of the study. With such variance in benchmarking results, it is easy to see how inappropriate and ineffective policy decisions can be made. It is time perhaps to reconsider whether benchmarking studies of online government are delivering what government needs to know.

It seems clear that the multiplicity of benchmarking models reflects a desire to quantify return on investment (ROI). However an increasingly confused understanding of the nature of online government and its components of e-government and e-governance is becoming apparent, inhibiting accurate assessment of progress. This confusion is accompanied by an assumption that the implementation of virtual government is based on New Public Management (NPM) principles, proceeds in an orderly and linear way and has a single focus. It will be argued in this paper that virtual government should be seen as two complementary areas, i.e. organisation-centric e-government and citizen-centric e-governance, with ICT-enabled use of the web space (categorised in this paper as the 'e-space') as the zone of interaction. While assessments of virtual government implementation remain anchored in business-related performance indicator measurement the extent of e-space interaction between government and its citizens and customers and the shape of these spaces cannot be fully described.

Assessing and benchmarking the implementation of all levels of virtual government, from local to federal, must be linked to a new conceptual model which addresses both the online processes required to yield e-government outputs and the designed e-space interaction required to yield e-governance outcomes. Both aspects are required for accurate assessment of the degree of use of the e-space to interact effectively with citizens and customers. The imperative for government to develop this interaction is encapsulated in the aims of the WA Office of E-government, which also identify the dilemma inherent in using current assessment models to try to benchmark its achievement, i.e. " *The mission of the Office of e-Government... is to transform the operations of Government, using technology as a tool, to improve internal efficiency, service delivery to citizens and community participation.*" (OeG, 2004). Measuring service delivery and efficiency - seeing citizens as customers - has a strong business precedent, whereas measuring participation (not just customer satisfaction or usage/uptake rates) has a social context which appears more difficult to measure.

This paper proposes a new conceptual model for virtual government, applicable to all levels of government. This model incorporates both e-government and e-governance in the context of a citizen-centric viewpoint. It is proposed that in implementing extended e-space interactions with citizens and moving away from an organisation-centric process orientation, governments are transforming to an new, extended form of virtual government. The term Community-Centric Virtual Government (CCVG) is coined in this paper to describe this new form of government.

Conceptual models for assessing e-government: a brief overview

Various authors (among them Bannister, 2004; Janssen et al., 2004; Mosse and Whitley, 2004; Peters et al., 2004) have identified the wide variety of benchmarking models and associated assessment criteria and the problems inherent in classifying websites using these tools. The need for more in-depth consideration of what is being benchmarked as well as addressing "*basic conceptual problems in evaluation ... as well as more fundamental problems with scoring*" (Bannister, 2004, p.1) has been expressed.

Most conceptual models of e-government are based on staged models developed by consultants, international organisations and in some cases by governments (*for example* AOEMA, undated; NAO, 2002; Janssen et al., 2004; Capgemini, 2005). These models describe a variety of sequentially implemented stages (ranging from three to five or more depending on the model) culminating in transformative e-government. Various performance measurement criteria, often not made explicit and differing with the model used, are then assigned and used to rank government websites, the most successful being seen as those implementing the greatest number of criteria associated with the model, irrespective of the social context in which these websites exist.

In the push to benchmark and rank e-government "success", the important distinctions between what constitutes e-government and e-governance are being blurred, with the terms often used interchangeably. This lack of clarity has led to a diversity of benchmarking tools being used, often with widely varying assessment criteria and analytical outcomes. Objectivity and repeatability of assessment outcomes and the use of these outcomes in longitudinal analysis is therefore compromised. The question inevitably arises as to whether these tools are really assessing the outcomes of virtual government, or are merely measuring what can easily be measured (Peters et al., 2004). The citizen context is lost, with measurement criteria relating generally to NPM-based performance measures aimed at assessment of superficial features.

An illustration of the problem of using these methods of benchmarking virtual government is provided by Accenture (2001). In its report on the progress made in implementing e-government across the world, the concepts of service maturity breadth (the number of services online) and service maturity depth (a subjective assessment of the level of completeness with which each service was offered) were introduced into the methodology for ranking countries. The report discussed the need for governments to take a citizen-centric intentions based design approach leading to an online presence related to the needs of the citizen, however these metrics measure only volume and complexity without corresponding consideration of the social, political or economic context surrounding each country's virtual government initiatives.

A new conceptual model therefore is required to describe virtual government in more than business-based terms. Previous models are self-limiting, assessing only the e-government aspect of virtual government without consideration of the other ways in which governments interact with citizens in the e-space. In the words of Sir Humphrey Davy (1778-1829): "*Nothing tends so much to the advancement of knowledge as the application of a new instrument.*" The conceptual model proposed in this paper is therefore offered as a contribution to further in-depth consideration of the facets of virtual government. This new model incorporates the concept of designed e-space interaction with the citizen - a growing concept in democracies - but is also applicable to those countries where the form of government or economy does not embrace the democratic, capitalist concept. It is based on

consideration and clarification of the roles of the different facets of virtual government, discussed in the next section.

E-government and e-governance: defining the facets of virtual government

In its 2005 Internet Survey (Dutton et al., 2005), the Oxford Institute found that British citizens use the internet to access e-government services significantly less than other e-services with only 24% of users saying they had used the internet in this way. However, the report finds the potential of the internet to increase civic participation is accepted by almost double the number of users (45%). This suggests government needs to use the web's e-spaces to develop higher quality interaction with citizens to provide mutually satisfactory outcomes, rather than focusing on the provision of government services and processes online as the main goal. One of the definitions of online civic engagement (Smith et al., 2005) is " ... the use of ICTs and other digital tools, resources and spaces through which people can learn about and practice civic engagement". This survey indicates that moving government from the organization-dominated physical mode of operation with little civic engagement towards a network-centric, virtual mode of engagement is seen as a desirable outcome by citizens using the internet.

Various definitions of e-government focus on the provision of processes and services online making explicit the emphasis on services, not interaction. Wang et al. (2005) propose a definition of web-based e-government services as " ... *the information and services provided to the public on government Web sites*". Whilst still viewing e-government as "... *the IT-led reconfiguration of public sector governance*", Paquet (cited in (Riley and Riley, 2003), p.37) describes it as a function of decision-making and service delivery capabilities, suggesting that e-governance is associated with " ... *new processes of coordination made possible or even necessary by the advent of technology – and the spreading of online activities in particular*". In defining e-government as " ... *a rich mixture of IT capabilities, competencies, and organizational administrative practice spanning both business-to-business and business-to-consumer activities*" , Deakins and Dillon (2002) reinforce the organisation-centric business view and focus on the citizen as customer.

Riley (2003) attempts to clarify the overlap and distinction between e-government and e-governance. He defines e-government in terms of the electronic administration of programs and services, while e-governance introduces the social context, being described as " ... *the outcome of politics, policies and programs*" and incorporating concepts such as consultation, engagement and networks. Indeed, Rhodes (1999) emphasises that networks lie at the heart of e-governance and are expressed through relationships between groups and organisations drawn from public and private sectors. By extension, citizens become part of this network-driven interaction when governments begin to focus on participation and collaboration. To enable this, e-governance requires purpose-designed citizen-interaction spaces, supported to different degrees by the e-government process spaces of information, transaction and interaction, depending on the needs of the citizen and the government. Both are essential, but they are not interchangeable, differing both in focus and deliverables.

Marche and McNiven (2003) emphasise that e-government and e-governance are related to different aspects of the relationship between citizens and government.

" ... e-government is the provision of routine government information and transactions using electronic means, most notably those using Internet technologies ... E-governance is a technology-mediated relationship between citizens and their governments from the perspective of potential electronic deliberation over civic communication, over policy evolution, and in democratic expressions of citizen will."

This notion is reinforced by a definition of e-governance as the "*linking-up of citizens, stakeholders and elected representatives to participate in the governance of communities by electronic means (including e-democracy)*" (IDeA, 2002). E-governance therefore can be viewed as building on the implementation of e-government, with its NPM focus, adding the dimension of citizen interaction in the e-space. It is the manifestation of the third thread of e-government reform proposed by La Porte (2005), enabling the public participation necessary to ensure governments are responsive to citizen requirements. Indeed, what is described as "*holistic e-government*" in the National Audit Office's revised e-government model (NAO, 2002, p.12) is further characterised as "*joined-up e-governance*". Bevir et al. (2003, p.13) see the " ... broader notion of governance as the changing boundary between state and civil society".

The OECD (2003, p.17) summarises this dichotomy thus: "*As the impact of e-government becomes more profound, governments will have to strike equilibrium between protecting citizens' rights and better meeting their needs with more efficient, integrated services and policy engagement processes. What starts as a technical exercise aimed at developing more responsive programs and services becomes an exercise in governance.*"

So, what definition can be derived for these two facets of government? For the purposes of this paper, e-government is defined as *the ICT-enabled organisation-centric, process-dependent output-based service delivery presence of government*. E-governance is defined as *the ICT-enabled network and citizen-centric outcomes-based interaction of government with its citizens*. Governments are starting to design the e-governance space when they include spaces for citizen participation and collaboration on websites along with online processes, services and information.

Whilst e-government enables e-governance to a degree, the development of the two facets of virtual government should not be seen as sequential. This notion of parallel rather than sequential development is touched on in a revised model of e-government included in the Government on the Web II report (NAO, 2002), although the report does not tease out the concept of e-governance. Thus, the two facets may converge and diverge at different times in the life cycle of developing citizen interaction. As Shackleton et al. (2004) pointed out in their consideration of the applicability of e-business maturity models to the assessment of local government websites, such sites often exhibit e-spaces at different degrees of development. They concluded that the use of staged, linear progression models may not adequately describe the maturity of virtual government. They found that, whilst there was little development of e-government on Victorian local government websites beyond the publishing of information, noticeable development was taking place in the e-governance spaces. They suggested this was a consequence of a need to promote the use of the websites. It could equally, however, be a manifestation of the development of interaction spaces driven by citizen requirements at the level of government closest to the citizen. It may be that at this level, citizens are close enough to require more participatory e-spaces, particularly if the UNESCO (undated) assertion that *"It is at the local level that the impact of ICTs on the relationship between governments and citizens, can be most effective."* is correct.

In the past, the implementation of virtual government has generally been measured only in terms of tangibles such as service delivery, not intangibles such as participation, collaboration and consultation. The next section discusses the development of a new conceptual model of virtual government which extends previous business-based models of e-government to include consideration of these intangibles. In so doing, the new model addresses both e-government and e-governance features, providing the basis for future development of an objective assessment system applicable to all levels of government. Such a system would support longitudinal examination of the dynamic emergence of the e-spaces and their linkages in the virtual government environment.

Designing the new conceptual model: incorporating e-governance into the e-space

Stamoulis et al. (2001) modelled the online service delivery aspect of government operating on the web in the context of the business-oriented ICDT platform proposed by Angehrn (1997). This platform is based on the concept of interaction spaces in the virtual service space, described from four perspectives:

1. Virtual Information Space (VIS) –displaying and accessing company-, products - & service-related information
2. Virtual Communication Space (VCS) –engaging in relationship-, ideas- and opinion-building activities.
3. Virtual Distribution Space (VDS) –distribution of products and services (including goods and services).
4. Virtual Transaction Space (VTS) –initiating and executing business related transactions (eg orders, payments).

These interaction spaces could be said to correspond to three of the most commonly cited stages in many staged e-government models (with their service maturity aspects identified by Accenture (2001) listed in brackets), i.e.

VIS = Publish (Passive/Passive)

VCS = Interact (Active/Passive); and

VTS = Transact (Active/Active).

The Virtual Distribution space corresponds to the online service delivery space on government websites.

The ICDT platform is designed to permit the development of user-defined interaction spaces in a business environment, based in collaborative knowledge-sharing. It is therefore used in this paper as an appropriate basis to conceptualise e-government features of virtual government. The clear correspondence of the quadrants of Angehrn's model to e-government benchmarking stages proposed in previous models emphasises the business nature of e-government implementation. The potential to interact in random e-spaces outside this organisational space is recognised in the ICDT model, but its organisation-centric view limits the progression to citizen-focused interaction in these spaces.

The term Virtually Extended Enterprise (VEE) is a business-based one, coined by Hammer (2001). It refers to an organisation which seeks to collaborate with other organisations, sharing information outside its boundaries. Stanton (2002) examined development of local government into the e-space and argued that the VEE is the service delivery mechanism for local government effecting the transformation to local e-government. Whilst the VEE multi-organisational collaborative effort is designed to improve business outcomes, it is mainly focused on the "push" aspect of information dissemination and collection, rather than the "pull" aspect of any collaborative decision-making. Indeed in the commercial environment this may well contravene legislation and be detrimental to the businesses concerned. However, conceptualising the operation of e-government as a VEE using Angehrn's ICDT model (*Figure 1 below*) identifies the potential for boundaries to become "leaky", allowing collaboration through consultation and networks and the formation of knowledge. The central focus remains, however, that of the organisation.

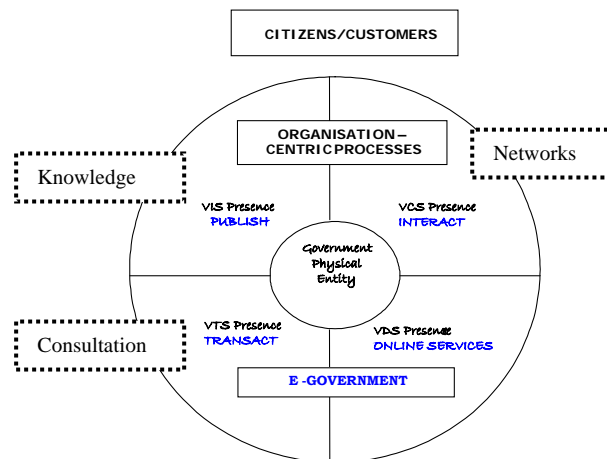


Figure 1 The Virtually Extended Enterprise: A "citizen-as-customer" focus (*Based on Angehrn, 1997*)

While the organisation is the central focus, the VEE adequately describes e-government operation. However, as the organisational focus shifts from one of service delivery online to one of interaction with the citizen, a new conceptual model is required to facilitate information sharing, collaboration (including collaborative decision-making); and full online civic engagement (Smith et al, 2005). This model should build on the VEE model shown (*Figure 1 above*) to establish citizen interactive e-spaces such as those of e-knowledge; e-networks; e-participation and e-consultation. Stanton (2004) argues that this transformative shift in focus is enabled by a new management paradigm, that of cybercentric management. Rather than being the primary function of the government web presence, the online aspects of e-government such as process requirements and service delivery move to become enablers of citizen interaction and development of relationships in the community.

Virtual government is now developing an ICT-enabled citizen-centric focus. The citizen's viewpoint, including provision of channels for interaction and participation in policy and decision-making, is being strongly identified. For example, the Western Australian Office of e-Government's strategy (OeG, 2004) states clearly that by 2010 the role of government agencies is to be reshaped to include a focus on outcomes and a citizen-centric approach based on collaboration with citizens. Evaluation of the outcomes of this shift requires a new conceptual model where the central focus is the citizen, not the organisation.

The provision of social context, facilitated by a different management focus, is the driver to develop e-governance-based online citizen engagement. Recognition of the need to provide this context, if governments at all levels are to achieve their goals, is made explicit in e-government strategies worldwide. Goals such as building user trust and confidence and enhancing closer citizen engagement (NOIE, 2002) enabling people to participate in government through inclusive policy development processes (New Zealand, 2001) and citizen engagement and outreach (Canada, 2002) are commonly expressed in these strategies. Indeed, the intention to interact with citizens in providing virtual government is exemplified in the four key objectives of the Western Australian Citizenship Strategy, 2004-2009 (Western Australia, 2004, p.6), i.e. *Knowledge and Understanding; Inclusion; Participation and Democratic Governance*.

David (2004) suggests that in relation to providing a cyberinfrastructure for collaboration in the e-Science space, it is the so-called "socio-institutional elements" to support this collaboration which are the most difficult to engineer. He uses the term *community-centric interactions* to describe collaborations supported by digital networks, bringing communities together for " ... *synchronous or asynchronous information exchanges*." These

collaborations also include real-time interactions between participants to enhance decision-making. It is proposed to use this term for a new conceptual model of virtual government- Community-Centric Virtual Government (CCVG) (Figure 2, below). This form of virtual government involves the development of e-spaces to enable full online civic engagement.

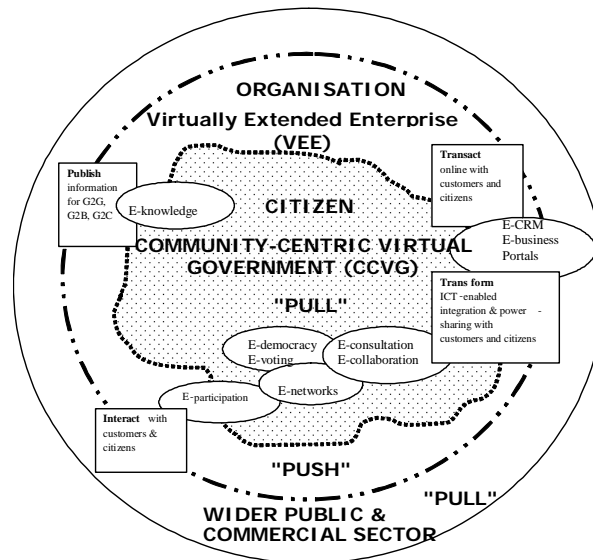


Figure 2 Community-Centric Virtual Government: An online civic engagement focus

The CCVG model of government is dynamic, with e-spaces (such as publish, e-consultation and e-participation) co-existing at different stages of development. It proposes that the organisation-focused VEE moves out from the central focus of previous staged models to take an intermediary position between its citizens and the wider public and commercial sector customers of government. Boundaries in this model between the VEE, the citizen and the wider public and commercial sector become "leaky". This allows a two-way exchange of information and ideas and the development of relationships as push and pull effects balance in the creation of e-spaces enabling interaction between the various layers of the model. In contrast to government operating as a business enterprise, the activities undertaken in a community-centric modality, including information exchange and the use of interactive applications for decision-making, provide the best opportunity to realise the goals of collaboration with citizens through virtual channels.

In implementing e-governance the government must be flexible, outwardly focused on the citizen, and actively interacting in the virtual spaces chosen by the citizen. Community-Centric Virtual Government (CCVG) describes governments which are moving towards developing these various e-governance spaces. The essence of this new paradigm of government interaction is the recognition that collaboration, information-sharing and consultation are required to achieve citizen-based outcomes. Government transforms to the CCVG when it moves away from the organization-centred focus of delivering online processes and services towards an interactive citizen-centric model of citizen collaboration to achieve citizen-focused outcomes.

The two facets of virtual government operation in the CCVG model are not mutually exclusive. What is designed in the e-space is based on what citizens require and given the wide variation in geographic and demographic categorisation of each level of government, this should not be remarkable. However, the trigger for developing the e-governance spaces can perhaps be seen as a change to a practical, rather than rhetorical focus. This change leads to recognition of the need to develop past the boundaries of the VEE to enable interaction with citizens in decision-making, policy-making and ultimately the democratic process.

Development as a VEE lays the groundwork for development as a CCVG. However, implementation of these modalities should not be viewed as sequential, as their virtual components may develop at different rates. For example, the development of e-governance features such as e-consultation and collaboration need not rely on the sequential implementation of all e-government stages from Publish to Transform before it is commenced. Levels of government with little demand from citizens for transactional capacity (such as local government) may on the other hand have a well-developed e-consultation presence, but little development of e-democracy. The driver or trigger is the "pull" from citizens to use the webspace for more focused interaction and participation, which forces the development of the VEE towards the CCVG mode.

The components of the e-space

Using various sources of current knowledge and extending current government website classification models, the primary and secondary components of the e-government and e-governance spaces of virtual government can be identified. These components are identified in Table 1 (*below*). This provides the flexibility required for the various e-space areas and their degree of development to be identified. The E-participation space, for example, can be defined in terms of the presence or absence of one primary component (a mechanism for online sharing of information and ideas) and six secondary components (e-mail, chat, privacy statements, web discussion spaces, E-news and online surveys or polls). Evaluation of these components produces a rich picture of this e-space.

<i>E-Space</i>	<i>Sub-space</i>	<i>Primary E-components</i>	<i>Secondary E-components</i>
E-government Online process implementation Organisation-centric "Push" Conceptual Model: Government focused V E E	Publish Providing Information – "data in context" [1], [3], [4], [7],	Static and strategic information available for download [4], [11], [12]	Information documents Strategic documents
	Interact Two-way communication with the citizen. Citizen feedback [4], [5], [12]	Common entry points. Access to information to do business with government	Downloadable forms / documents Site search Email to officers Employment Tenders Information portal
	Transact Citizens can conduct and complete transactions online ^[1] . [4], [11], [12]	Access to transactions online or in person Seeking feedback	Payment online Email to officers
	Transform Seamless/integrated virtual government [1], [3], [4], [11], [12]	Submission tracking End-to-end process integration E-business opportunities	E-CRM Central government portals for all services & links ¹ Integrated supply chain Business Portals
E-governance Online transformation to "representative e-government" ^[6] Citizen-centric / "Pull" ^[10] Conceptual Model: Governance-focused C C V G	E-consultation and collaboration (including e-policy) ^[8] Seeking citizen feedback to contribute to initial stages of policy-making and strategic planning. [6], [7], [10], [12]	Mechanism available to provide formal feedback on projects and policies At least one defined method to undertake specific consultation exercises [6], [7], [8], [9]	Consultation module "Have your say" Public message board Web-casting public meetings Online surveys / questionnaires Email to officers Real-time forums
	E-participation ^[2] " ... the use of ICT to open new channels for participation in the democratic process between elections" (cited in 9) Associating information with purpose and experience to develop e-knowledge. [4], [6] [10], [12]	Mechanism available for online sharing of information and ideas [2], [7], [8], [12]	Email Chat Privacy statement Web discussion spaces E-newsletters/E-news Online surveys/polls
	E-networks " ... the strategic use of ICTs to better implement established public policy goals and programs through direct and diverse stakeholder involvement online." [6] Networked societal guidance [8] Online Communities of Practice [6], [7]	Mechanism for full online civic engagement including online public deliberation and debate. Mechanism available for those with relevant expertise to participate in projects with government officers (eg voluntary sector-local government partnerships)	Privacy statement Web discussion spaces E-newsletter/E-news Email Chat Online Communities of Practice E-petitions Online surveys/polls Topic portal
	E-democracy Transformative e-democracy " ... the use of ICTs in support of citizen-centred democratic processes" [2] [9].	Mechanism for full online democratic engagement ^[2] , [7], [8]	E-voting At least one online polling or surveying method

[Sources: ¹OECD (2001); ²Kearns (2002); ³Windley (2002); ⁴NAO (2002); ⁵IDEA (2002); ⁶Clift (2003); ⁷Marche & McNiven (2003); ⁸Riley (2003); ⁹Riley & Riley (2003); ¹⁰Smith et al. (2005); ¹¹Zhou (2005); ¹²AOEMA (undated)]

Table 1 Components of the E-government and E-governance spaces

Once the e-spaces and their level of development have been identified, governments at all levels are able to benchmark against other governments with similar goals and e-spaces, examining the depth of features in those spaces and applying or deleting features if it believes this will add value to citizen services or interaction. The focus on interaction in the e-spaces rather than implementation of services removes the competitive focus of previous types of benchmarking, centring attention on achieving citizen-related outcomes.

Development of the e-space is seen as dynamic, situated as it is in the CCVG concept and depending as it does on citizen requirements. This therefore requires a more flexible assessment method than those based on existing staged models. The variability and subjectivity of assessment criteria linked to the current methods also inhibits longitudinal comparison within and across levels of government and different countries. For example governments in democratic countries may aim to fully implement all components of virtual government and will be able to assess their progress accordingly. However, countries not supporting democracy, or where the democratic system is still rudimentary and the citizen focus is not yet strong can also use the e-space concept to assess progress in implementing virtual government in the areas required. Similarly, the concept could be used by federal, state and local government levels to assess the degree of citizen interaction consistent with their requirement for this.

In their discussion of classification and benchmarking, Mosse & Whitley (2004) suggest that current private sector benchmarking methods for assessing UK e-government websites create of themselves a particular government view of citizens solely as customers. They posit that such a view is not comprehensive, but becomes embedded and then acts as the driving force in future best practice benchmarking. The conceptual framework for the selection of criteria in current assessment tools has thus become firmly rooted in the private sector and the model of government as business. Thus any current classification towards some ideal of best practice is not undertaken from first principles, but from a set of criteria containing within them an implicit assumption that the roles of online government are that of organisation and customer.

The use of private sector website assessment tools such as WebQual (Barnes and Vidgen, 2000), even though these are well researched, is not appropriate for the assessment of CCVG outcomes. Similarly, the use of a tool such as the Website Assessment Evaluation System (WAES) (Cyber.state.org, 2001), relying as it does to a great extent on measurement of NPM characteristics of openness and transparency, whilst appropriate for the VEE will not reveal the full classification of web interaction as e-governance is developed. Rather, assessment needs to be based on identifying the level of interaction present between the government and the citizen.

To adequately assess the outputs and outcomes of virtual government, a new assessment method must be developed which balances the view of the citizen-as-customer with the introduction of the view of the citizen as partner. If, as this paper proposes, the transformative driver which moves virtual government from the VEE to the CCVG is citizen focus, then assessment of outcomes should be based on analysis of the e-spaces for both e-government and e-governance evident on the government's website, not on e-government outputs alone.

The e-space concept makes no assumptions concerning the sequence of implementation of the various spaces and their relative degree of development as this would constrain the outcome. Rather it will allow all e-spaces and their stage of development to be analysed in the process of assessment of an individual website. The degree of dynamic development of the e-space, with spaces growing or shrinking according to the individual citizen interaction goals of each CCVG, can thus be identified.

CONCLUSIONS

There has been discussion in the literature for some time recognizing a shift towards citizen interaction in virtual government. However, clarity of definition of e-government and e-governance, conceptual models to describe virtual government incorporating both these components and related assessment methods to evaluate this interaction with citizens, at any level, appear to be lacking.

A new conceptual model of Community-Centric Virtual Government is proposed, the trigger for which is the decision of the government entity to develop citizen-interaction spaces in the virtual environment. Key features in implementing this decision are flexibility in the use of resources in responding to citizen participation requirements and the development of two-way connections between government and citizen, supported by a new management paradigm. This new model reintroduces the social context of government, mitigating the organisation-centric NPM focus on performance measurement. It also removes the "citizen-as-customer" focus inherent in the underlying assumptions and criteria of current business website-based assessment models.

The concept of the e-space has been described and argued as the basis of new evaluation methods for virtual government outcomes. This concept, developed within the framework of the CCVG conceptual model, addresses the rising emphasis on using ICTs to better interact with citizens and on evaluating the outcomes of this interaction. It enables evaluation of all areas of virtual government from online processes and service delivery to designed citizen interaction spaces. It is applicable to the online presence of all levels of government within the context of their interaction objectives, irrespective of the form of government or economy within which the interaction exists.

FURTHER RESEARCH

A website assessment tool for government sites based on the e-space concept, its components and their linkages is being developed. This objective tool will be used to examine the e-space orientation of local e-government in Western Australia to investigate the degree of web-based citizen interaction evident between 2003 and 2005, identifying changes in the dynamics of government e-spaces. Further research is also required into the issues associated with equity of access and the digital divide and strategies to overcome any disenfranchisement of citizens from equal participation in e-government.

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