Benchmarking the e-Government Bulldozer: Beyond Measuring the Tread Marks

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Abstract

Benchmarks the e-Government Bulldozer: Beyond Measuring the Tread Marks

Fadi Salem

As electronic government initiatives continue to gain global momentum, interest in benchmarking various aspects of e-government is expanding rapidly. Academic researchers, NGOs and private and public sector organisations have produced numerous benchmarking methodologies for measuring and evaluating e-government development locally, nationally, regionally and globally. This paper investigates the role of international benchmarking as a driver for e-government development. After reviewing 44 e-government benchmarking reports and evaluating their credibility, validity and acceptance in academic and practitioner literature, the paper systematically compares and contrasts ten short-listed established international e-government benchmarking methodologies. The comparative analysis is conducted utilizing a proposed conceptual framework which specifically assesses the context, methodology, type of benchmarking and social paradigmatic tendency of each of the reports studied. The paper argues that this framework provides public administrators with a valuable conceptual lens for understanding the value of e-government benchmarking exercises to better assess their validity and applicability as drivers for development of their e-government initiative. Based on the findings of the comparative analysis and literature review, the paper concludes that -regardless of the methodology adopted- international e-government benchmarking does play a crucial role in driving e-government development, only when the exercise is accompanied with a long-term iterative adaptation and reform mechanism.

Keywords
Electronic Government, e-government, benchmarking, ranking, indicators, performance measurement

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1. Introduction

"After the bulldozer has rolled over us, we can pick ourselves and carefully measure the tread marks" (Winner, 1986).

In an address to the International Congress on Government On Line, Dr. Jerzy Szeremeta – former Chief of Public Policy Analysis and Development Branch in the United Nations Department of Economic and Social Affairs (UNDESA) metaphorically described how governments were rolled over by the "e-government bulldozer" driven by the "warriors" of the new public management "revolution", the business community and ICT vendors, who share the driver's seat of this "godsend" bulldozer (Szeremeta, 2002). Indeed, a global race towards implementing local, national, regional and global e-government initiatives is taking place and gaining increasing support from the different stakeholders. Aiming to "measure the tread marks" and construct a safer road for the "e-government bulldozer", researchers, NGOs, private and public sector organisation are actively engaged in multiple projects for benchmarking e-government progress.

Numerous e-government measurement methods were produced in the form of performance indicators and benchmarking methodologies. This paper explores the methodologies followed by ten widely cited e-government benchmarking reports. After determining credible e-government benchmarking methodologies according to official reports and academic literature, this paper compares, analyzes and evaluates the methodologies of the 10 short listed reports. Based on the results of the comparison the following questions are explored:

- What are the major methodological and paradigmatic differences in established e-government benchmarking reports?
- To what extent are international e-government benchmarking capable of driving e-government development?

The paper draws on the framework proposed to provide analysis and raise further research questions on the developmental impacts of benchmarking e-government initiatives. Finally, based on the comparative analysis and literature review, the paper concludes with suggestions for improving e-government benchmarking methodologies and their impact on e-government development.

2. Benchmarking e-Government

The first book on benchmarking was published by Robert Camp in 1989. He then defined benchmarking as "the search of an industry's best practices which leads to superior performance". The development of benchmarking as a managerial tool goes further back to 1979, when Camp was involved in Xerox Corp's first internal benchmarking project (Kaylor et al., 2001, Misic and Johnson, 1999, Yasin, 2002).

Benchmarking today is a widely celebrated practice in private and public sectors. In 2001, The European Benchmarking Network (EBN, 2005) adopted the definition of benchmarking from the UK's Public Sector Benchmarking Service, which was put simply as "Improving ourselves by learning from others" (PSBS, 2005). PSBS also
states that benchmarking encompasses comparing performance regularly with best practitioners, identifying performance gaps, seeking fresh approaches to improve performance and following up by monitoring progress.

It was a matter of time before e-government advocates utilized the concept of benchmarking, aiming to improve the performance of their initiatives. Since the turn of the century, an ever-increasing number of local, national, regional and global e-government benchmarking reports have been published world-wide. Despite the wide interest in public sector benchmarking in general and e-government benchmarking in particular, the number of academic papers evaluating or comparing the e-government benchmarking methodologies is relatively small (Melitski et al., 2005, Moon et al., 2005, Sciadas, 2004). Moreover, most of the available published research lack consistent and comprehensive empirical and analytical approaches and frameworks for assessing e-government benchmarking methods (Carbo and Williams, 2004, Melitski et al., 2005, Sciadas, 2004). Furthermore, Melitski et al. argued that previous academic studies were limited to few characteristics of e-government services and that the comparisons were narrowed down only to few areas of the public sector.

A more in depth look reveals that this lack of methodological frameworks and models exists even in general benchmarking literature. Through a literature review of theory and practice of benchmarking, Yasin concluded that the reasons for dearth of such frameworks in the public domain could be attributed to the uniqueness of public organisations or the unwillingness of public management to adopt innovative approaches. The reviewed benchmarking literature also falls short of discussing the costs and benefits of benchmarking approaches (Yasin, 2002). Clearly, e-government benchmarking followed the same trend.

However, some academic papers have proposed theoretical frameworks for evaluating e-government progress. In the context of developing countries, Madon used Sen's notion of capabilities to evaluate e-government projects in India (Madon, 2004). Studying benchmarking of municipal websites, Moon proposed a five-stage framework for analyzing e-government performance (Moon, 2002): 1. Information dissemination/catalogue. 2. Two-way communication. 3. Service and financial transactions. 4. Vertical and horizontal integration. 5. Political (citizen) participation. This framework was followed and built upon by many in their e-government benchmarking projects. For example, based on Moon's framework, Melitski et al. developed an alternative theoretical framework to try to find out what drives e-government adoption (Melitski et al., 2005). Trying to develop a conceptual framework for benchmarking e-government based on this scarcity of relevant research led Irani et al. to propose a new framework by following the methodological framework of structured case approach (Irani et al., 2005). This practice-driven approach (rather than science driven) merges the rigidity of the positivist perspective in modelling and documentation with the interpretive one in analysis and interpretation, which is arguably more appropriate for benchmarking e-government (Plummer, 2001). Considering the apparent lack of research in this area, Yasin argued that all of the available know-how on benchmarking is the result of "practitioners' efforts" rather than actual research (Yasin, 2002). This is also prevalent in the younger e-government research field.
Despite the relative scarcity, available studies on e-government benchmarking have often revealed interesting results related to public management. For example, in a benchmarking study of 84 e-government municipal websites world-wide, the study found that one of the reasons public managers take on e-government strategies is to enforce their own managerial policies and practices in the process (Melitski et al., 2005). As the EU e-government benchmarking model is the most established one globally (the sixth benchmarking report of EU's online public services was released in June 2006), it had the largest share of discussion in the literature. In the earlier stages of the EU government benchmarking project, the emphasis was on proposing standards for e-government services rather than benchmarking the performance of e-government (Kaylor et al., 2001). Some political science literature questioned the "new modes of governance" incorporated in benchmarking EU government services that are based on "voluntary performance" standards rather than "compulsory regulations" (Eberlein and Kerwer, 2002) and questioned how compulsory regulations can coexist with a voluntary mode of governance. In another interesting example, Zängle critique of the EU benchmarking experience warned from a "fatigue" of benchmarking that might strengthen the neo-liberal branch in the EU (Zängle, 2004).

Two major tracks in measuring e-government have been introduced by recent e-government benchmarking studies. The first signifies the sophistication of online government services. The other evaluates the driving factors behind e-government, including societal utilization and readiness (Moon et al., 2005). Such e-government driving factors include availability and sophistication of ICT infrastructure and online penetration. A widely used and closely-related term in e-government benchmarking reports is "e-readiness", which is generally defined in many e-government benchmarking documents as: “The preparedness of a government to engage and drive the e-agenda, and particularly to deliver e-government. The availability of clear strategies, open standards and IT platforms enabling governmental bodies potentially wanting to (deliver) services online” (Booz-Allen-Hamilton, 2002).

3. A Framework for Understating the Impacts of International e-Government Benchmarking

This exploratory research aims to identify patterns in major international e-government benchmarking methodologies. It utilizes comparative analysis to determine methodological and paradigmatic contrasts in established international e-government benchmarking reports. For this, the paper proposes a conceptual framework for evaluating the impacts of international benchmarking exercises on development of e-government initiatives.

As a frame of reference, the paper utilizes published benchmarking literature to determine different views on e-government benchmarking in particular, aiming to answer the questions proposed in the introduction. The framework proposed here is developed to take into consideration the following comparison points:

- The Context of the report, considering the authors, sector, purpose and timeframe of the benchmarking report.
- The Methodological level of the research conducted in the report.
• The Benchmarking type, according to the taxonomy proposed by the European Benchmarking Network (EBN, 2005).
• The sociological Paradigmatic tendency of the research based on Burrell and Morgan’s sociological paradigms (Burrell and Morgan, 1979).

This paper argues that the proposed framework (henceforward CMBP framework) provides a multidimensional way of understanding the role of the benchmarking exercise in driving e-government development by taking into consideration the Context, Methodological level, type of Benchmarking and the Paradigmatic tendency of the e-government benchmarking exercise.

Understanding the social paradigmatic tendency of each of the benchmarking studies is critical in the proposed framework. To reach this understanding, Burrell and Morgan’s sociological paradigms were utilized as the reference for determining paradigmatic contrasts of e-government benchmarking methods. Burrell and Morgan’s social paradigms are widely discussed and utilized in different threads of social science. The social scientists argued that each view of society is classified within a matrix of two pairs of interpretive views. The first dimension contrasts the “sociology of radical change” with the “sociology of regulation”. The other dimension classifies the nature of any interpretation of society as either “subjective” or “objective”. Using this matrix, the authors claimed that each view of society adheres to a distinct paradigm: Positivist, Interpretivist, Radical Structuralist and Radical Humanist (Burrell and Morgan, 1979).

Methodological levels of each benchmarking report were analyzed to determine if it is of a qualitative or quantitative nature. Understanding the paradigmatic and methodological differences in e-government benchmarking methods would facilitate reaching more informed conclusions on the role of international benchmarking exercises in e-government initiatives and whether they are capable of driving its development. It is acknowledged though that there are challenges to identifying common criteria for comparing and contrasting e-government benchmarking methodologies (Moon et al., 2005) and therefore the proposed comparison points were chosen after intensive research taking these challenges into consideration. The grounds for comparison presented in the research methodology section were also chosen to be inline with the research questions proposed.

The European Benchmarking Network defines seven different types of benchmarking in organisational environments (EBN, 2005). For the purpose of e-government benchmarking and according to EBN's definitions, all e-government benchmarking methodologies studied here would be categorised as "External" and "International" benchmarking reports. Furthermore, these methodologies could be divided into "Strategic", "Competitive" and "Process" benchmarking. EBN states that "Strategic" benchmarking is used when organisations want to enhance overall performance by studying long term strategies that successfully enabled high performance. When an organisation wants to consider its relative position to other key competitors, "Competitive" benchmarking is used. When the goal of the benchmarking exercise is to improve specific operations and processes, "Process" benchmarking would be the method followed according to the EBN.
Finally, benchmarking reports covered here adopted various definitions of electronic government, most emphasising on ICT aspects specifically. For example, the UN defined e-government as “the use of ICT and its application by the government for the provision of information and public services to the people” (UNDESA, 2005). This paper utilizes a "softer" definition of e-government put forward by the Council of Europe, which balances ICT usage and citizens' relationship with the government. It defines e-government as the use of ICT for developing "relations between the public authorities and the civil society, functioning of the public authorities at all stages of the democratic process and the provision of electronic public services" (CoE, 2004).

4. Research Methodology

A comparative analysis of benchmarking methodologies followed in major e-government benchmarking studies was undertaken. To carry out this exercise, the research methodology used included rigorous and systematic online research to review all e-government benchmarking publications produced since the year 2000 up to August 2006. The detailed research covered e-government focused websites of NGOs, such as different EU and UN bodies as well as official international government portals.

Initially, the data collected included 44 reports benchmarking different aspects of e-government on local, national, regional and global levels. The collected data included a large number of reports produced by consultancy firms. Despite the fact that the production of most of such reports was funded by NGOs or government bodies, only two of consultancies' reports on e-government benchmarking were short-listed in the comparison, namely Accenture's and Taylor Nelson Sofres's (Accenture, 2005, Dexter and Parr, 2003, Mellor and Parr, 2002). Short-listing was based on the fact that these reports were intensely cited by academic sources.

Some of the 10 short-listed reports benchmarked different aspects of the information society. In such reports, this research focused only on indicators and benchmarking methodologies specifically focused on the e-government aspect of information society. Given the diversity and large number of reports, the focus of this paper was mostly limited to comparing more established international benchmarking reports which had matured by being published periodically. Furthermore, only the most recent editions of such reports were taken into consideration in the final analysis. For example, the UN's "Benchmarking E-government: A Global Perspective 2001" report was not considered despite the fact that it is one of the most cited reports in academic literature (Ronaghan, 2001). Its most recent successor: "Global e-government Readiness report 2005" was studied instead (UNDESA, 2005). The Accenture 2005 report was studied instead of the 2006 report, as the latter was mainly based on the same ranking and findings of the 2005 report (Accenture, 2005, Accenture, 2006).

The focus of this research is on international benchmarking and its role in driving e-government development on a national level. Reports focusing on benchmarking municipal, cities or federal states e-government projects were not included in the comparison and analysis, although the benchmarking methodologies of some of
these reports were reviewed. Table I lists the 10 e-government benchmarking reports covered by this paper.

Further research was carried out in academic literature to identify relevant published research on the topic tackled in this paper. Although the review spanned the broad spectrum of journals focused on information systems, political science and management, more emphasis was put on journals specifically focused on public administration, e-government and evaluation.

5. Findings

A major finding from this research indicates that most (7 out of 10) of the established e-government benchmarking initiatives follow an interpretative approach in their research. This suggests that most of these reports are designed as tools for understanding e-government status and progress rather than carrying out assessment based on preset views of e-government development. Another finding indicates that “strategic” benchmarking is prevalent in the majority of established e-government benchmarking reports (for example: the reports produced by the UNDESA, EU, Accenture and Brown University). This indicates that the main aim of such e-government benchmarking reports is to enhance overall performance by studying long term strategies that successfully enabled high performance in e-government.

The following provide a brief description of each of the methodologies of the reviewed e-government benchmarking. Table I presents a consolidated view of the detailed findings of the research. Due to the large number of reports covered, detailed descriptions of all reports are not presented in this paper. Nonetheless, the brief description of each of the 10 short-listed methodologies provides an overview of the key e-government benchmarking reports. The analysis and discussions of the findings follow in the next section.


The United Nations developed this "people-centric" benchmarking methodology to assist governments to develop ICT action plans by creating new framework for measuring e-government readiness. The strategic benchmarking conducted was one part of the overall research methodology. The report utilizes indicators representing public sector's "capacity" to deploy e-government components as well as its "willingness" to provide information to citizens. The methodology combined several indexes of qualitative and quantitative nature. The overall methodology followed a quantitative path and the research followed an interpretive approach (UNDESA, 2005).

ii.  Online Availability of Public Services – 2006 – EC / CapGemini

This report presents the results of the sixth benchmarking exercise of online public services in the EU countries. The new 10 EU member states were included for the
second time in this report, plus Iceland, Norway and Switzerland. The report strategically benchmarks the availability of twenty basic online public services for citizens and businesses, in line with the e-Europe Action Plan framework. The methodology consists of 4 modules, including screening, sampling, web-based survey and analysis. As per the previous 5 reports, the methodology was quantitative in nature and the research followed a positivist approach (Capgemini, 2006).


The report is one part of the Statistical Indicators Benchmarking the Information Society (SIBIS) project funded by the EC until 2003. The methodology of this benchmarking report was mainly based on the EC/CapGemini's report. Rand Europe though, re-focused the methodology to the demand-side of e-government, rather than the supply-side. The authors added indicators to measure the level of users' acceptance and adoption through two surveys conducted in the EU15 plus Switzerland and the US. Unlike CapGemini's quantitative methodology and positivist research, this qualitative research methodology followed an interpretive approach. It was subjective in nature as it builds on CapGemini's previous benchmarking results. The type of benchmarking conducted was competitive, aiming to measure European e-government progress on the demand-side against the US (Graafland-Essers and Ettedgui, 2003)

iv. E-government in Central Europe: Rethinking Public Administration - 2004 – Economist Intelligence Unit (EIU)

This report utilized seven existing benchmarking criteria for the 11 countries studied (the ten new EU member states plus Turkey). The 35 combination of qualitative and quantitative indicators selected were those of previous benchmarking methodologies (for example: EU's availability of online public services for citizens). EIU combined the indicators, giving each of them a specific weight. The overall ranking was based on the total score of the measurement of all the indicators. Despite that the research methodology was based on a combination of qualitative and quantitative measures, the final approach tended to be quantitative. The research fell in the positivist paradigm, as it tried quantifying complex issues such as e-democracy and public vision (O'Brien, 2004).

v. Benchmarking the Information Society: eEurope Indicators for European Regions (BISER) – 2004

The BISER project aimed to define and develop statistical indicators for benchmarking European regions' information society. The project includes 20 indicators for benchmarking 28 European regions' information societies on the population and establishments sides, including e-government. The project focuses on satisfaction with e-government and barriers to adopting its services. The research has an interpretive perspective, and it is intended to be a process benchmarking exercise (BISER, 2004).

The objective of this annual report is to measure online availability of a large number of e-government material and services in 198 countries. The research was conducted from a positivist perspective with no interviews taking place. The results were based on actual usage of the services and ability to access the materials prescribed by the large number of indicators during the “summer” of 2006 (West, 2006).


This report tries to fill a gap in EC’s e-Europe benchmarking report of online public services. It benchmarks back-office integration of online public services in EU countries plus Iceland and Norway. The interpretive research methodology is of 3 phases that included web, telephone and face-to-face interviews. The process benchmarking exercise suggests a conceptual framework for benchmarking back-office operations (Millard et al., 2004).


The report adopted a subjective research methodology as part of the ranking and assessment were based on a combination of 10 previous benchmarking exercises published by different official and private institutions. Booz-Allen-Hamilton, which was commissioned by the UK Department of Trade and Industry carried out interviews in the 9 countries with high ranking policy makers to provide a competitive benchmarking of the UK e-economy (Booz-Allen-Hamilton, 2002).


The methodology followed in Accenture’s 6th annual report had witnessed major changes from the 5 earlier reports. It followed a hybrid methodology; quantitatively assessing the breadth and depth of e-government services in 22 countries (availability and level of services) as well as qualitatively assessing the maturity of customer service delivery for e-government services. For the second part, the report surveyed the perceptions of citizens and businesses in the 22 countries, assessing the levels and methods of interactions with the online government in four focus
areas. The final ranking was made of a combination of the 2 equally weighed elements of maturity (Accenture, 2005).


The report benchmarks the uptake and usage of e-government services in 32 countries. The methodology of this strategic benchmarking report follows a quantitative route, while the research follows an interpretive approach (Dexter and Parr, 2003).
### Table I – Research Findings

<table>
<thead>
<tr>
<th>Name of Report</th>
<th>Authors</th>
<th>Time Frame</th>
<th>Coverage (Countries)</th>
<th>Research Methodology</th>
<th>Research Paradigm</th>
<th>Benchmarking Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Global e-Government Readiness report 2005</td>
<td>UNDESA</td>
<td>July – August 2005</td>
<td>191</td>
<td>Quantitative</td>
<td>Interpretive</td>
<td>Strategic</td>
</tr>
<tr>
<td>Online Availability of Public Services 2006</td>
<td>EC – Capgemini</td>
<td>April 2006</td>
<td>28</td>
<td>Quantitative</td>
<td>Positivist</td>
<td>Strategic</td>
</tr>
<tr>
<td>Benchmarking e-Government in Europe and the US 2003</td>
<td>RAND Europe</td>
<td>April – May 2002</td>
<td>17</td>
<td>Qualitative</td>
<td>Interpretive</td>
<td>Competitive</td>
</tr>
<tr>
<td>E-government in Central Europe 2004</td>
<td>Economist Intelligence Unit (EIU)</td>
<td>July – August 2004</td>
<td>11</td>
<td>Quantitative</td>
<td>Positivist</td>
<td>Strategic</td>
</tr>
<tr>
<td>BISER eEurope Regions Benchmarking Report – 2004</td>
<td>BISER</td>
<td>24 months</td>
<td>28 regions</td>
<td>Hybrid</td>
<td>Interpretive</td>
<td>Process</td>
</tr>
<tr>
<td>Global E-Government – 2006</td>
<td>Center for Public Policy - Brown University</td>
<td>Summer 2006</td>
<td>198</td>
<td>Quantitative</td>
<td>Positivist</td>
<td>Strategic</td>
</tr>
<tr>
<td>Reorganisation of Government Back-Offices for Better Electronic Public Services -2004</td>
<td>Danish Technological Institute / University of Bremen</td>
<td>2003</td>
<td>17</td>
<td>Qualitative</td>
<td>Interpretive</td>
<td>Process</td>
</tr>
<tr>
<td>Accenture Global e-Government Survey 2005</td>
<td>Accenture</td>
<td>3 - 17 Jan 2005</td>
<td>22</td>
<td>Hybrid</td>
<td>Interpretive</td>
<td>Strategic</td>
</tr>
</tbody>
</table>
6. Analysis

It has been argued that we are witnessing the “post-New Public Management era” (Dunleavy et al., 2006, Hood and Peters, 2004). If this argument is correct and public administration is moving towards the “digital era governance” then measuring and benchmarking e-government is more important than ever before. Nonetheless, many aspects of the information societies cannot be fully studied and understood without reliable quantification. When it comes to governments' side of the information society, decisions are often associated with greater consequences. Despite the fact that measurement and evaluation methods do not always draw the whole picture accurately, high-level decision-making should be at least based on "informed ignorance" rather than "uninformed arrogance" (Kaylor et al., 2001, Sciadas, 2004). Therefore, setting systematic measurement and evaluative frameworks rather than relying on reactive and ad-hoc responses can enhance understanding and contribute to the iteration of theory, data and analysis.

The following question rise from the previous discussion: Are information system evaluation methods applicable in the area of e-government evaluation? There is dissatisfaction over the usefulness of the prevailing methods of information systems evaluation in the public sectors (Irani et al., 2005). Research found that formal IS evaluation methods tend to be used as means for justifying political agendas. Such research argues that therefore, it would not be easy to demonstrate that these methods would succeed in evaluating e-government. Perhaps this is one reason why, despite their scarcity, different e-government benchmarking papers tend to construct new evaluative frameworks for e-government benchmarking. This raises several questions over the actual role that benchmarking plays in e-government evaluation and development. The following subsections provide further analysis based on the research findings.

6. Role of International Benchmarking in e-Government Development

Benchmarking is sometimes viewed as a technique of copying and imitating, but in reality, it is often viewed in organisational context as a method for innovation (Dattakumar and Jagadeesh, 2003, Leitner, 2003). Most businesses see the final goal of benchmarking as discovering best practices of other businesses and innovating ways to incorporate these practices within their own operations (Misic and Johnson, 1999). Public sector benchmarking literature presents diverse -and occasionally extreme- views on the role of benchmarking. For example, Zängle argues that in the European context, the main role of benchmarking is creating a "watchdog", incorporating "soft regulation" as a defensive measure against the standardisation of a neo-liberal single market. Some critics of benchmarking in the public sector argue that it is a practice of "managed innovation" that promotes conformity rather than a "method for innovation" (Hood and Peters, 2004).
In the e-government context, one way to view the role of benchmarking from the "supply" side is as a method of measuring the return on governments' ICT infrastructure investment. On the other hand, practitioners involved in e-government benchmarking usually follow interpretive research methods in the form of surveys for businesses and citizens. Therefore, from the "demand" side, benchmarking could also be a way of understanding communities' requirements (Melitski et al., 2005, Sakowicz, 2003). But perhaps the most anticipated question that e-government benchmarking exercises have a potential of answering is: Why are some e-government initiatives more successful than others? Something e-government researchers have tried to answer for the last several years (Melitski et al., 2005).

e-Government benchmarking often depends on administrative as well as societal factors. Therefore benchmarking in the context of e-government could be viewed as a method of measuring the technological, economical and political constraints that limit public sectors' abilities to deliver on the e-government promises (Moon et al., 2005). Regardless of the actual role it plays, e-government benchmarking exercises face many challenges and have many limitations that should be studied to understand that role.

6.1. Benchmarking E-government: Challenges and Limitations

Benchmarking is problematic in general. When it comes to ranking governments in a benchmarking exercise, it becomes even more so. Historically, performance management has been a rational tool of the private sector that is now being increasingly applied in the highly politicized environment of the public sector (Heeks, 2006). Szeremeta described benchmarking, in the context of international e-governments, as "an occupation for the brave ones" as it usually involves "full-time public relations effort" for dealing with complaints (Szeremeta, 2002). One can understand the tone of frustration in Szeremeta's comments when studying OECD's view on e-government benchmarking. In a report analyzing e-government progress in the OECD countries, the authors claim that participating countries are "sceptical" about existing studies benchmarking their e-government progress. The public administrators justify this claim by arguing that these reports do not take into consideration service quality, country priorities or back-office changes (OECD, 2003, OECD, 2005). However, the findings of this paper suggested that more recent and more mature benchmarking methodologies do tackle these issues. Perhaps the most neglected factor when evaluating and benchmarking e-government is the cost factor (OECD, 2005). This is a very challenging one as usually the cost of e-government development is the responsibility of one government agency, while the benefits of a successful e-government implementation is disseminated to most -if not all- government agencies and society at large.

On an international level, there are even more challenges to e-government benchmarking. The exercise itself incorporates dealing with many...
methodological elements related to statistical practice and theory. It also includes constructing an innovative integration framework, which provides a foundation for clustering different and often contrasting indicators. This has often created a competition of benchmarking approaches, which many view as a healthy trend in the relatively young information society benchmarking field (Sciadas, 2004) while others call for an internationally recognized e-government benchmarking methodology (OECD, 2005).

Perhaps the two most important issues when constructing an international e-government benchmarking methodology is selecting the most suitable indicators and appropriate weighting schemes. For example, Heeks argues that e-government performance evaluation studies miss the key indicator of "public value" (Heeks, 2006). Sciadas argues that selecting e-government indicators is "more of an art than science". The process of choosing the indicators mainly depends on the researchers’ experience and judgment more so than on statistical rules. One main challenge to building a weighting scheme lies in the lack of objective data from the sources. Therefore, unlike established indexing measures, weights in information society benchmarking tend to be subjective (Sciadas, 2004). There is also the risk of ending up with misleading indicators, as constructing indicators based on different evaluation approaches -a methodology followed by many of the reports studied here-usually leads to varying results or at least sheds light only on part of the picture (Moon et al., 2005, OECD, 2005, Sakowicz, 2003).

In earlier research on e-government benchmarking studies, researchers categorized the used indicators into input indicators, output indicators, impact indicators, readiness indicators and usage indicators (Janssen et al., 2004). While this might be an important factor in determining the effectiveness of the benchmarking study, it is beyond the scope of this research to compare and categorize the indicators used in the short-listed reports. Regarding the research question tackled here, this paper argues that the indicators used are less of a factor in answering the question of whether benchmarking reports can play a role in driving e-government development in comparison to other elements in the CMBP framework proposed and utilized here. This does not imply in any way that designing proper indicators is not a critical factor in the effectiveness of a benchmarking exercise.

The issue of political and social inclusiveness of benchmarking is another challenge interrelated with design of e-government benchmarking methodologies. Some methodologies suffer from breadth vs. depth trade-offs. They usually involve limiting country coverage because of data availability issues. Even the International Telecommunication Union (ITU) admits that it is forced to exclude countries when carrying benchmarking exercises because alternative means to overcome data availability issues are "statistically non-defendable" (Sciadas, 2004). Exclusion is not always statistically motivated though, as defining benchmarking indicators often takes into consideration the consensus of conflicting interests and different world views, as is the case with the e-Europe benchmarking project (Stowers, 2004, Zängle, 2004).
Some long-term benchmarking projects tend to have mechanisms for reform and improvement. The lessons learned from e-Europe 2002 Action Plan led to filling some previous methodological gaps and to the production of more socially inclusive indicators in e-Europe 2005 plan. Moreover, Europe's 2006 benchmarking report found limitations in the adopted benchmarking indicators and demanded more sophisticated measures, specifically in combining back-office restructuring with front-office availability (Capgemini, 2005, Capgemini, 2006, Millard et al., 2004, Sakowicz, 2003, Zängle, 2004). In another example, the methodology followed by the UNDESA's global e-government readiness report was also designed in a way that allows countries' feedback to contribute to the development of the next version of the report (UNDESA, 2004, UNDESA, 2005). Such iterative and adaptation mechanisms in e-government benchmarking can potentially play a crucial role in driving e-government development. The next subsection discusses the comparative analysis of the reviewed e-government benchmarking reports in more detail.

6.2. Comparative Analysis

With regards to research methodologies, the studied e-government benchmarking reports followed combinations of different data collection techniques, such as questionnaires, web surveys and face to face interviews. Furthermore, most reports divided their diverse research methodologies into several stages. Not surprisingly, this led to inconsistent rankings of countries which pushed several governments to complain to the reports' authors (Szeremeta, 2002).

What makes some countries rank high in some of these benchmarking exercises while ranking significantly lower in others? Few academic papers tackled this inconsistency. The Canadian government, a world leader in e-government according to many e-government benchmarking reports, took matter into its own hands trying to find out the reason its e-government project ranked everywhere from first to ninth in 6 different e-government benchmarking reports published prior to 2003 (Canada-TIP, 2003). The research indicates that differences in methodologies and indicator selection contributed to this inconsistency.

Moon et al. points to a methodological difference in e-government benchmarking studies in terms of the number of factors assessed. While some studies reflect on one indicator, more comprehensive ones include multiple indicators in their evaluation (Moon et al., 2005). Though, despite the large variations in the numbers of the indicators used in the e-government benchmarking reports studied, the findings here indicate that the number of indicators is irrelevant to the effectiveness and credibility of the methodology. Some of the reports excluded from this research had a relatively large number of indicators; while more established reports, such as EU's has significantly fewer ones. The findings of this research indicate that the context of the benchmarking indicators tends to have more weight than the number of indicators used. A conclusion consistent with earlier research (Zängle, 2004).
The notion of benchmarking itself incorporates an assumption that performance, readiness or sophistication can be measured and compared using a set of indicators and a fixed methodology. Benchmarking practitioners also assume that measuring a complex entity's performance against other diverse entities using the same methodology would result in a clear quantitative understanding of the entities status. Despite the fact that this view suggests that e-government benchmarking tend to fall in the positivist research paradigm, the findings of the comparative analysis presented in this paper indicate that an interpretive research approach prevails in major e-government benchmarking reports (7 out of the 10 reports reviewed follow an interpretive research approach).

7. Conclusion

Consistent with previous research, the findings of this research confirm that there are no mainstream theories utilized in e-government benchmarking in particular. Furthermore, e-government benchmarking methodologies vary widely in their focus, scope and underlying conceptual frameworks used. Given the inconsistencies in countries ranking in different benchmarking reports, one can argue that, regardless of the methodology followed, higher ranking does not necessarily indicate that a country’s e-government development plan is better than others. This is consistent with conclusions of several reports and papers (Janssen et al., 2004, Millard et al., 2004, Moon et al., 2005, UNDESA, 2004, UNDESA, 2005).

Is there a need for a generic standard for e-government benchmarking methodology? Despite the calls for more comparable measures and indicators for benchmarking e-government (Moon et al., 2005, OECD, 2005, Szeremeta, 2002), the UN's and EC's views of a multilevel iterative route to developing the e-government benchmarking methodology could be regarded as the way towards more effective benchmarking on the international level. This argument opens the door for more research on this specific proposition.

Regardless of the context, methodology, paradigm or type of benchmarking used in e-government benchmarking reports, high scoring countries will continue to use their high ranking as an indication of their success, no matter how flawed the benchmarking methodology is. The same can be said for the lower ranked countries; regardless of how objective the benchmarking methodology is, the lower scoring countries will publicly try to question, critique or simply ignore the results. Privately though, it is widely argued that most public administrators handling e-government development do take the ranking of their countries seriously in different benchmarking reports. Aiming to be ranked higher is always a factor in driving e-government development. Therefore, international e-government benchmarking reports are in fact effective drivers for e-government development (Janssen et al., 2004, Sciadas, 2004, Szeremeta, 2002).

For public administrators, the findings of this research and the proposed CMBP framework represent a lens to view and understand contrasting e-
government benchmarking methodologies. This would facilitate making more informed decisions on the validity, credibility and effectiveness of e-government benchmarking initiatives, and accordingly forming a more informed decision on how to better drive the development of their e-government initiatives.

Despite the fact that many e-government benchmarking methodologies are faced with criticism (Dunleavy et al., 2003, Sciadas, 2004, Zängle, 2004), more new methods are proposed by academics, think tanks, NGOs and consultancy firms on a regular basis. This “booming business” of e-government benchmarking suggests that these methods are viewed as a valuable decision support tools in the information society at large, or at least as a method of managing the complexity of e-government development. Based on the findings of this research, this paper argues that different e-government benchmarking methodologies do play an important role in pushing development of e-government, although they would have more potential in doing so if they are to be perceived as a continuous learning process (Millard et al., 2004, Yasin, 2002) rather than a decisive quantitative lens for viewing the e-government progress.

For e-government benchmarking practitioners, given the rapid changes in e-government environments and the fact that different methods can only provide a snapshot of e-government status during a limited window of time, this paper concludes that e-government benchmarking methodologies tend to have a limited life span as a credible decision-support measure. For more “solid” benchmarking, the exercise would have to be undertaken on a regular basis with continuous evaluation and reform of the adopted methodology. Regardless of the methodology adopted, international e-government benchmarking would have an imperative role in driving e-government development, only when the benchmarking exercise is accompanied with a long-term iterative adaptation and reform mechanism.

Finally, the view of benchmarking on the international e-government level should not be limited to highlighting and copying good practices from countries in the top of the rank to those ranked closer to the bottom. A deeper and more informed understanding of the role of international e-government benchmarking is required, otherwise benchmarking would be merely "measuring the tread marks" of the "e-government bulldozer" without knowing where the road leads.
References


