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Case Study

TOWARDS AN E-GOVERNMENT EVALUATION MODEL

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ABSTRACT

E-Government has become one of the leading keywords for the public sector reforms initiatives since it guarantees transparency and accountability; application constructed to serve as e-Government solutions facilitate the interface to provide citizens, businesses, local and national administrations with a shared pool of services.

In this research we present an evaluation model to measure e-Governmental sites taken into consideration new perspectives issues. Therefore, the research suggests such issues to develop quality government services and delivery systems that are efficient and effective. As a result, the research introduces a framework and methodology for establishing indicators and metrics in order to assess the quality and performance of e-Government service offerings. The set of quality and performance indicators and metrics proposed has been derived in an outcomes assessment approach, based on the perspectives of e-Government service providers and end-users and following a goal/question/metric approach[22] that departs from some key quality and performance benefits.

We also discusses performance measures in e-government models and describes the governmental services, system qualities, content quality; and conclude by describing the methodology along with the case study under investigation.

Key Words: Evaluation model, accountability, describing the methodology.

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INTRODUCTION

This section reports on a research study of technology value and satisfaction of e-Government systems. There fore, it includes several countries approaches, which based on e-Government based solution.

Singapore

Singapore was ranked second in e-Government leader ship study in the years 2000, 2001 and 2002. Singapore strives to achieve the concept of "Many Agencies, One Government" by delivering services that are integrated from the customer's viewpoint, regardless of the num ber of agencies involved in providing the service[1]. The Singaporean e-Government system was launched in June 2000 with the vision of transforming public service into a leading e-Government program to better serve the nation in the digital economy.

Canada

The Government of Canada is delivering the Internet and related technologies to offer Canadians user-centered, integrated services when and where they want them. The article provides the challenges entailed in ensuring that users' needs drive the service delivery agenda[2]. It dis cusses the key enablers of service transformation includ ing information management, privacy, security, inter operability and performance measurement.

The European Union

This article gives an overview of policies and progress on e-Government in Europe. It presents the implementa tion of the eEurope 2002 Action Plan, collaborative R&D work and the establishment of trans-European telematic networks between EU national administrations, eGovern ment applications have developed dramatically in Eur ope. However, the transfer of eBusiness practices into the public sector can help to achieve increased productivity and inclusion, by ensuring access for all to government eServices[3]. European administrations are setting new standards as a basis for further progress.

New Zealand

It has just 4 million people and an economy which is almost entirely based on agriculture, New Zealand has been nominated by the UN as the world's third most advanced in e-Government. Leading the country into an electronic world is the e-Government Unit, which is charged with coordinating and integrating e-services across all government agencies[4]. Some of the solutions

are original and it provides the best-of-practices solutions and modify them to its own environment.

Germany

The German e-Government launched in 2005 to ensure that citizens, enterprises and the administration itself can access the services provided by the federal administration easier, faster and at lower costs through the Internet. The German e-Government initiative is characterized by central coordination, central implementation of shared components and the establishment of competence centers[5]. The current status is presented especially with respect to the challenges applying to the German legal environment–German data protection requirements and the federal legislation.

Australia

This article describes the national framework for e-Government in Australia, levels of technology literacy in elected officials and current electronic democracy initiatives in several Australian state and territory governments. These illustrate the potential for e-Government to transform democracy, but they also highlight the need to reinforce democratic values and develop new literacy's of citizenship[6].

U.S.A.

The U.S. Congress, after a relatively slow start in the 1990s, is now making some progress in meeting the demands of online communications. Congress is attempting to catch up and meet the rising demand and volume of electronic communication. In some offices, there has been considerable progress in developing effective, interactive Web sites[7-9]. These exceptional Web sites should serve as models of dynamic online communications, but for most congressional Web sites, there is a long way to go. Much depends on the attitudes and priorities set by lawmakers and their senior staff.

U.K.

The UK evaluation of e-Government employed from three interpretive in-depth organizational case studies that explore e-Government evaluation within UK public sector settings[10]. The paper describes the aim of improving knowledge and understanding of e-Government evaluation. The findings that are extrapolated from the analysis of the three case studies are classified and mapped onto a tentative e-Government evaluation framework and presented in terms lessons learnt. These aim to inform theory and improve e-Government evaluation practice. It concludes that e-Government evaluation is an under developed area and calls for senior executives to engage more with the e-Government agenda and commission e-Government evaluation exercises to improve evaluation practice.

E-GOVERNMENT SYSTEM OVERVIEW

This section studies technology value and satisfaction of e-Government systems[11]. It poses the following groups of questions:

(A) End User Questionnaires: Objectives, Satisfaction and Visions Characteristics

RQ1: What characteristics of e-Government systems are important for clients (Governmental peoples)?
RQ2: What are the significant factors for clients' perceived value of e-Government systems?
RQ3: What are the significant factors for clients' perceived satisfaction of e-Government systems?
RQ4: What are: The needs, abilities and services of e-Government systems?
RQ5: What are the user expectations?

(B) Function, Process and Usability Questionnaires: Architecture Criteria

RQ6: What is the information and technology architecture of e-Government systems?
RQ7: How to measure the usability and functionality of e-Government systems?
RQ8: How to measure the accessibility and interoperability?

(C) Analysis Questionnaires: Assessment Characteristics.

RQ9: What is the technology's needs assessment of e-Government systems?
RQ10: How is the overall of the information and service needs assessment?

To measure and evaluate an e-Government model, a range of iterative and integrated design processes are required such as:

1. Information and service needs assessment[12,13].
2. Technology needs assessment[14].
3. Cost and time literacy[13].
4. Government objects content literacy[14].
5. Usability and functionality[12,13].
6. Accessibility.
7. Meeting user expectations.
8. Understanding how citizens actually use e-Government services[12].
9. Evaluate the e-Government services for continual improvement[16].
10. Needs, abilities and expectations[16].

The proposed system consists of three tracks, which can be expanded into ten categories. The processes of the evaluation are described in table 1.

Table 1: The Proposed Evaluation Model.

1	1. Objectives and Visions Characteristics	Needs, abilities, satisfactions and expectations
2		E-Government services for continual improvement
3		Understanding how use e-Government services
4		Meeting user expectations
5	2. Function, Process and Usability Characteristics	Accessibility, Interoperability
6		Process, Usability and functionality
7		Government objects content architecture
8	3. Needs Characteristics	Technology needs
9		Cost and Time
10		Information and service needs

E-Government Web Site

Firstly, the benefits of a Web presence must be determined. To do so, some questions are asked[17-19]:

- What are e-Government goals and how will a website support them?
- What does an e-Government want to achieve with a website?
- Will a website deliver new clients from current clients?
- Will it offer better client support?
- Will it bring good publicity?
- When is the right time to create a website for government services?
- How to secure processes and services in the e-Government web site?
- How a website can enhance business's bottom line?
- Determine the amount of invested money before turn first profit from the website
- How an e-Government site can be secured?

Object Performance Assessment (OPA) Model Architecture

Figure 1 applies the model framework to the information and services needed for quantitative and qualitative architecture. Three categories will be used:

1. Objectives and Visions Characteristics.
2. Government Object & Content Architecture (Function, Process and Usability).
3. Assessment Characteristics.

Most of qualitative and quantitative assessments are employed by external governmental auditors. Such audit assessment considers all aspects of instituational performance and gives the insituation score of 1 to 4, where 1 is poor and 4 is excelent. The empirical work of qualitative and quantitative assessments indicated that the e-Government of the proposed model needs 8 internal assessments. There was also disagreement surrounding which metrics to use.

Object/Vision Characteristics (DESIGN OF QUESTIONNAIRE)

This questionnaire consists of useful questions, tips and instructions taken from best practices on application of e-Government transactions concept.

Additionally, it includes content, accuracy, format, ease of use and time factors that contribute to success of e-Government projects and initiatives.

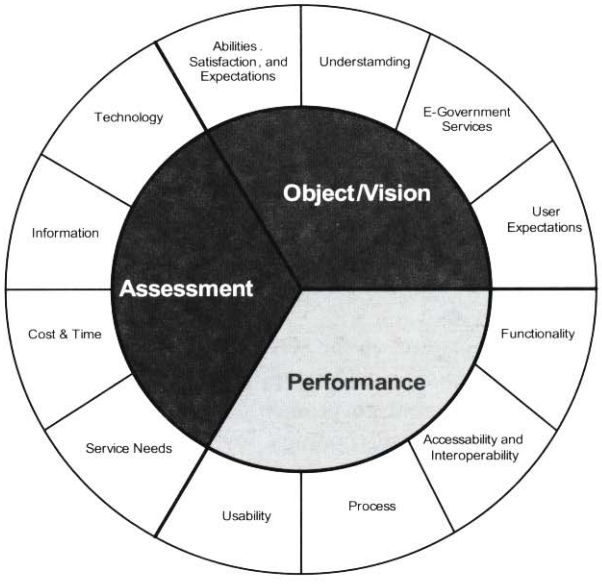

Fig 1: Proposed Model issues mapped to observed across three e-Government Characteristics.

Government Content Characteristics

It deals with the methodology of design and implementation of e-Government transactions projects (Process, usability and functionality). Consequently, it describes on how to evaluate the technological readiness level of a government agency. This description contains software, hardware and communication technologies. This characteristic also includes Internet wireless communication, application integration and security.

Assessment Characteristics

This characteristic illustrates technology, information and services needs to satisfy the requirement of e-Government systems.

Proposed Model Requirements

The requirements of the proposed OPA model fall into categories: Quality e-store (E-content), content accuracy, information content, security concerns and consumers' experience (End users). These categories were specified to construct a set of critical incidents for encounter satisfaction. Such requirements is described as the following:

1. E-Government contents (E-content): Fast web page download, store size, promotions, ease of use and so on.
2. Information object content and content accuracy: Availability of information to compare across alternatives, completeness of information provided about a firm, product and service and so on.
3. Security concerns: Availability of secure modes for transmitting information, provisions made for alternatives, overall concern about security of transactions over the Internet, gathering of personal information and so on.
4. Consumer satisfaction: Increased customization, convenience in services and responsiveness in product delivery.

MODEL EVALUATION STRUCTURE

An e-Government system provides opportunities for measuring clients understanding and user satisfactions. To do this, measuring pre-test audience is done to see what government object is actually needed. This is followed by methodology, evaluation criteria, government object content and comparative analysis based on government object content that measures exactly what clients have gained. Figure 2 describes the proposed e-Government success model.

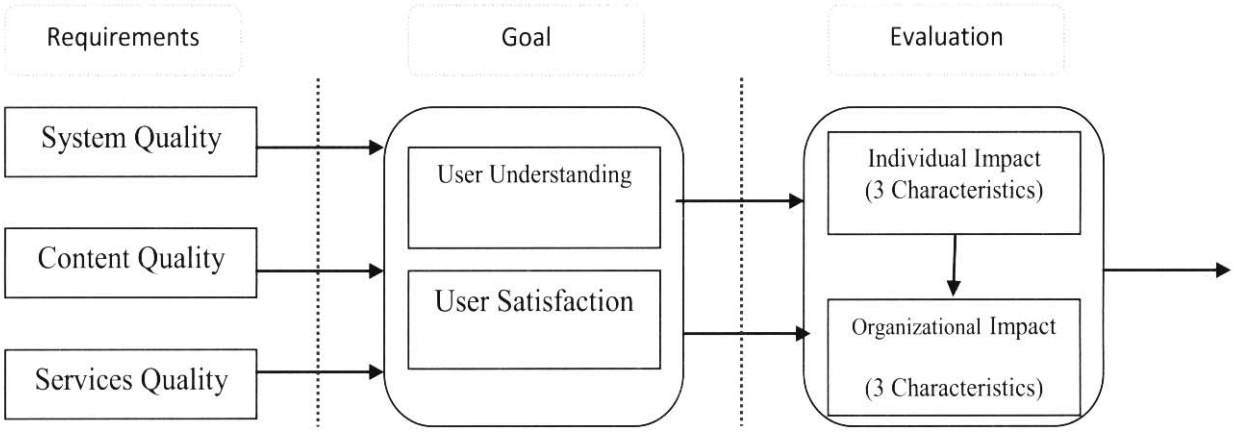

Fig. 2: The Proposed e-Government Success Model.

Methodologies

A questionnaire will be sent to the private e-mail addresses of clients. The filled questionnaire can be returned by e-mail. Different governmental clients will be interviewed to validate the findings. A review of the evaluation literature places clients' concerns on the content's agenda. Consequently, feedback from clients enrolled in the e-Government system will be used to evaluate the implementation of a new delivery mode that promotes new content or new services.

E-Government Evaluation Elements

Vision: What is the e-Government stated and realized development plans for its services? How the e-Government plans to incorporate and utilize new technologies into its service's architecture and how it plans to evolve its current service by adding to or enhancing the current functionality. How does the e-Government plan to grow and change its general and professional services support. It represents no more than 10% of the total evaluation.

Functionality: This is usually the primary focus of any e-Government evaluation, it includes contents and related functions, but it should represent no more than 40% of the total decision of the total evaluation[20].

Storyboard: A storyboard is a tool used in the production of multimedia, video and film projects to show a frame-by-frame picture sequence of the action. In this research, however, the term refers to a non-graphical representation of every web page the screen elements and their operations which, when taken as a whole, constitute website. Just storyboards help to organize a visual production such as a website. It represents no more than 25% of the total evaluation, it includes:

- The design aspects.
- Ease of use features.
- Ability to integrate with other tools, both hardware and software.
- Ability to easily interface with other e-commerce applications.
- Ability to enhance rather than decrease the security risks.

Costs: The cost calculations should always include not only initial license costs for the service/product and any knowledge tools utilized, but also costs of installation and maintenance, gateway, ongoing education and training and professional services such as customization and integration. It represents 10% of the total evaluation.

Service and Support: A service functionality, in many instances, the inducement for making a specific e-Government selection. But it is just as important that also consider the availability of quality service and support, for without them, the success of any service implementation is ultimately lost. It represents no more than 15% of the total evaluation.

Comparative Analysis based on Government Objects Content

A general model for government objects will be introduced in this section. Such a model is based on vision, function, storyboard, cost, services and supports.

Today's companies look for a quantifiable return from their web site investment. Whether their site is a content site, commerce site, portal or community, converting web site traffic into positive cash flow is paramount.

Table 2: The Proposed Ranging Model.

Criteria	Indicator	Weight
Vision	Quality of e-Government stated and realized development plans for its services	10 %
Functionality	It contains contents and related functions	40%
Storyboard	Design aspects, easily interface, integrate with other tools	25 %
Costs	Costs of building, installation, maintenance, ...etc.	10%
Services and supports	service functionality, availability of quality service and support	15%
Total		100 %

This section discusses the various objectives organizations have for their web sites and the techniques for measuring results and calculating a return on the web site investment. Consequently, the proposed model illustrates ranking using several indicators; including: Vision, functionality, Storyboard, Costs and services and Supports. For each indicator, the highest scoring organization is assigned a score of 100 and the organizations are calculated as a percentage of the top score. The scores of each indicator are weighted as shown in (Table 2) to arrive at a final overall score for an organization.

For some institutions of e-Government service, it is straightforward to understand the value of a client (Visitor). Pure commerce site (With commercial services) can easily track and measure order value on a web site. By analyzing referral sources, marketing campaigns, keyword programs and other techniques, an online marketer can segment their site visitors and compare the average cost of driving traffic to the average revenue derived from the program[21].

Other institutions may use their site for lead generation purposes. Visitors may respond to a variety of marketing campaigns such as email newsletters or informational offers including web seminar invitations, white papers, research reports and requests for communications, location search and more. Such institutions that promote online need to take the next step and determine lead conversion rates for their clients.

As in the case of a commercial site, they will need to segment their incoming leads. Based on the rate to convert a visitor/client to a lead and a lead to a paid customer, institutions can again segment by campaign and assign a relative cost and value to each visitor/client. Portal vendors, information sites, not for profits and online communities either assign predetermined value to a site visit or budget the cost of servicing a site visit as a customer service cost.

CONCLUSION

This research aims to evaluate the e-Governmental performance in different business applications. More specifically, it is aimed to contribute to the development of conceptual and empirically based principles and guidelines that can improve understanding about the role of information systems in integrating performance data in the management and governance of public services. Each of these research areas addresses the growing importance and need to focus on the role of information technology in improving public sector services. By following the procedures outlined in this research, an e-Government should be able to utilize the best evaluation criteria, gather the necessary and data and guarantee that its overall evaluation process proceeds in a structured format.

The importance of measuring the performance of e-Government cannot be overemphasized. In this research,

a flexible framework is suggested to choose an appropriate strategy to measure the tangible and intangible benefits of e-Government. A case study at King Abdulaziz University (KAU) has been carried out for analysis and implementation into the framework. The results obtained suggest that to have a proper evaluation of tangible and intangible benefits of e-Government, the projects should be in a mature stage with proper information systems in place. Evaluation of e-Government systems is an under developed area an senior executives need to engage more and commission e-Government evaluation to improve evaluation practice[10].

Future works will include web-based e-Government systems and performance testing. Such work may consists of: Response time, throughput testing, capacity testing, load testing, stress testing, spike testing, endurance testing, and configuration testing.

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