

EGOVERNMENT MATURITY MODEL(EGMM)

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Abstract: eGovernment has been defined as Information and Communication Technology (ICT) enabled route to good governance. eGovernment is an evolutionary path that its effective implementation requires a complete understanding of constituting elements and at the same time taking a holistic view to stay focused on its overall objectives. This paper introduces a new heuristic model that could be used to measure eGovernment maturity called "eGovernment Maturity Model" (eGMM). eGMM has five levels of maturity encompassing varying degree of initiatives, from the lowest to the highest. Stages include close, readiness, develop, manage, and seamless. In this model two aspects are considered: eService maturity and plan maturity.

1 INTRODUCTION

The old model of ICT in government consisted to automating the internal, back office and working of government by processing data, similarly to private sector enterprises. The new model is one of ICT supporting and transforming the external working of governance by processing and communicating information and data and providing interactive services through multiple channels. Network communication technology has revolutionized how agents in the economy interact, transact, and share information with each other. Network technology now allows government to offer multi channel and multi media access, communication and interaction, including WANs, the Internet as well as wireless and mobile computing networks (Saidi and Yared, 2002)

eGovernment should be seen to encompass all ICTs, but the key innovation is computer networks creating a wealth of new digital connections: (Heek, 2001)

- Connections within government - permitting "joined-up thinking".
- Connections between government and NGOs/citizens.
- Connections between government and business/citizens.
- Connections within and between NGOs.
- Connections within and between communities.

Broadly defined, eGovernment can include virtually all information and communication technology (ICT) platforms and applications in use by the public sector. Traditionally, the interaction between a citizen or business and a government agency took place in a government office. With emerging information and communication technologies it is possible to locate service centers closer to the clients. Citizens may receive government information and services in an unattended Internet kiosk or room that is located in a government agency or close to them, or through a laptop or personal computer in the home or office.(Ghasemzadeh and Safari, 2003) In an eGovernment, if properly implemented, citizens can log onto one Internet site, easily find the governmental information and services they are looking for, and use that site to conduct an online transaction, businesses fill out an electronic form for environmental regulatory compliance requirements, and government officials make all purchases and payments electronically.(Athkinson and Ulevich Jacob, 2000) eGovernment can be defined as the sum of all electronic communication between government, enterprises and citizens.(Greunz et al., 2001) E-Government is a technology enabled, sector-wide, cultural, organizational and business transformation program; it is not a massive IT project,(BT Government Report , 2000) although it

is a critical component of any such transformation and plays a crucial role. Although the use of these technologies is rapidly growing in the economic and production systems of the world, they are not available 'off the shelf'. They have to be understood, absorbed, and mastered. (Ghasemzadeh and Safari, 2001)

After this section, we'll present eGovernment models in the literature and then explain eGovernment maturity model of this paper.

1.1 Literature Review

There are several maturity models for eGovernment. We are going to present five models for eGovernment maturity.

Gartner Model: In this model, three stages are introduced for eGovernment maturity; Information, Interaction, and transaction.

Asia Pacific Region Model: This model sees eGovernment progression in six stages. Not all governments or agencies will reach all stages, and there will be much variety within a government, with different agencies at different stages. The stages are: (1) setting up an email system and internal network; (2) enabling inter-organizational and public access to information; (3) allowing 2-way communication; (4) allowing exchange of value; (5) digital democracy; and (6) joined-up government(Wescott, 2001)

UN Model: UN has five maturity stages in implementing eGovernment: 1) Emerging that; is when a government web presence is established

through a few independent official sites. In this stage information is limited, basic and static, 2) Enhanced that; is when government sites increase; information becomes more dynamic and content and information is updated with greater regularity, 3) Interactive; in which users can download forms, contact with officials, and make appointments and requests, 4) Transactional; in which users can actually pay for services or conduct financial transactions online, and 5) Seamless that; is total integration of e-functions and services across administrative and departmental boundaries. (UN, 2000)

EMM: In this model, six stages are defined for eGovernment maturity: closed, initial, planned, realized, institutionalized, and optimizing. (Misra and Dhingra, 2002)

Utah Model: Windley(2002) presented a maturity model in State of Utah. In this model four stages are defined: simple website, online government, integrated government, and transformed government.

2 EGOVERNMENT MATURITY MODEL

We are going to present a new heuristic model for examining eGovernment maturity in a ministry. There is an inductive view for eGMM. In this model, we examine eGovernment maturity in affiliated organizations with respect to two viewpoints:

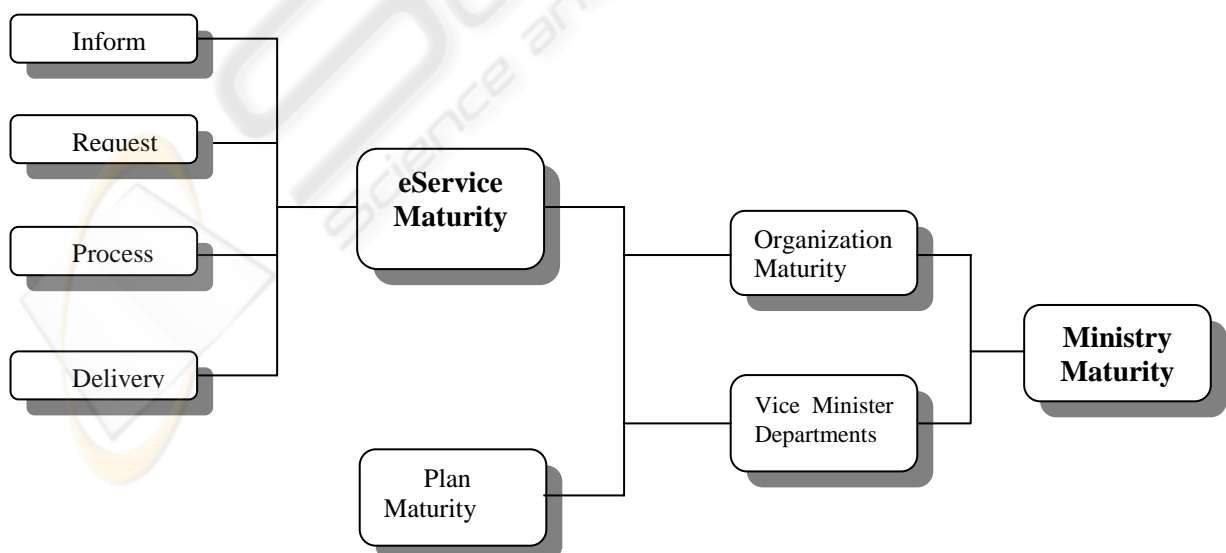


Figure 1: Schematic view of eGMM.

eService maturity and plan maturity. Then eGovernment maturity in a ministry will be the sum of affiliated organizations and vice minister department’s maturity. Figure 1 shows schematic view of eGMM. There are two main components of maturity that explained.

2.1 Service Maturity

For determining eService maturity, we combined concepts of two model: eCommerce model (Turban, 2002), and system model. With respect to these models, there are several aspects related to a service: product, process, and delivery agent from Turban eCommerce model and input, process, and output from system model. According to above mentioned aspects, we defined three factors for examining eService maturity as below:

Inform: is evaluates through two main attributes: degree of transaction between client and service providers, and the use of automated channels. Inform continuum is:

- None
- Inform through brochures and magazines in special places.
- Inform through static website.
- Inform through static website and there is a responsive department inside the organization.
- Inform through dynamic.
- Inform through governmental portal; mutually and continuously.

Type of Access: is the type of channels between client and service providers. Evaluating of this criterion comes under to three attributes:

- Digitalizability of services.
- Required security for services.
- Type of channel that can be face to face, telephone/fax, kiosk/ website, digital TV, and government portal.

In a meanwhile, it should be mentioned that type of access is equal to delivery agent (Turban, 2002) that includes channels between customers and governmental organizations for sending request service delivery.

Process: is set of required activities from back office for presenting services. This criterion is examined from two attributes: degree of process automation and degree of process integration.

According to above three criteria and their combination, eService maturity includes following stages:

Stage1- Start: In this stage, physical or semi-automated channels are being used for communication and back office can be automated and integrated.

Stage2- Online Presence: In this stage, inform starts from static website and finally ends to dynamic website. In addition, documents with low security can be transmitted through computer networks and in other cases, physical channels are used.

Stage3- Transaction: This stage focuses on security. In other words, security is the most important factor that considered in this stage and transmitting with high security is possible.

Stage4- Transform: In this stage, inform and access to government services is possible through government portal with support of automated and integrated processes in back office.

2.2 Plan Maturity

In this component, supportive activities for presenting eService are considered. Plan maturity is adjusted from EMM. (Misra and Dhingra, 2002) Several stages of plan maturity are:

Stage 1- Initial: In this stage, top management knows ICT, its applications and benefits for organizations. No organized efforts have been attempted to undertake the eGovernment initiation. Efforts usually are experimental and with lack of direction. In the end of this stage, it’s expected to that the necessity of eGovernment is realized. Main criteria of this stage are: degree of ICT knowledge in organization, perception of eGovernment advantages and disadvantages, administrative efforts, and productivity evaluation of efforts.

Stage 2- Planned: This stage starts with systematic approach. With respect to strategic approach, information technology strategic plan is formulated in this stage. Main criteria of this stage are: vision definition, need assessment, eGovernment plan, and documentation.

Stage 3- Realized: After strategy formulation in the last stage, we will have implementation and assessment in this stage. So, according to strategies,

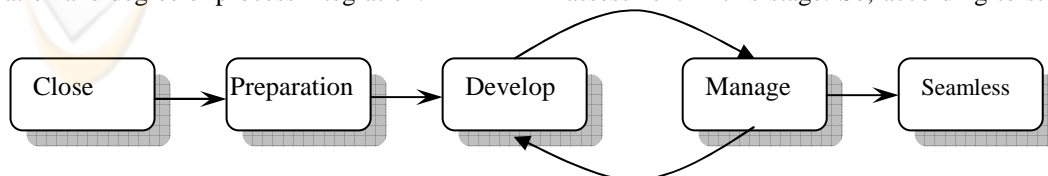


Figure 2: eGMM in an organization

action plan with budget and time will be defined. Then required actions are implemented and finally their results would be measured and controlled. Gap analysis is a good methodology for assessing results.

Stage 4- Institutionalized: There's not any gap between design and reality; in other words new technology has been accepted completely. eGovernment becomes a part of the organization's work culture.

Stage 5- Optimizing: In this stage, organization has continuous improvement with innovation and creativity.

2.3 eGMM

eGovernment Maturity Model (eGMM) is a maturity model encompasses eService maturity and plan maturity. This model has five stages: close, readiness, develop, manage, and seamless (Figure 2). Specifications of eGMM stages are as below:

Closed:

- No use of ICT in organization.

Preparation:

- Not organized efforts.
- Isolated efforts and a few planning.
- Semi automated/ physical channels and processes
- Office automation is important
- Transmitting documents with low security.
- Static website.

Develop:

- Define a comprehensive ITSP.
- Doing coordinated and integrated initiatives.
- Dynamic website.
- Transactional communication.
- BPR and implementing eReadiness

Manage:

- Adjusting plans and actions and determining errors.
- Continuous transaction with develop (last stage)
- Examine optimized solution.
- Attain optimized situation for a limited time.
- Institution of this situation in work culture.

Seamless:

- Serving internal and external users electronically that confirm Continuous improvement in technology and processes
- Start new lifecycle(Figure 2)

3 CONCLUSION

Organizations are attempting in several ways to use ICT in organization in a special period. But without any appropriate mechanism, it seems very difficult to know actual status. In this paper, we have

introduced a new heuristic model, eGovernment Maturity Model (eGMM), to illustrate and examine path of eGovernment development. eGMM for measuring eGovernment maturity has inductive view. In the other words, eGMM firstly measure affiliated organizations maturity and then a ministry maturity will be sum of organizations maturities. Two main components of eGMM are eService maturity and plan maturity. With respect to these components, eGMM has five stages: close, readiness, develop, manage, and seamless.

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