A STUDY ON MANAGERIAL EFFICIENCY CONSIDERATION FOR DESIGN AND DEVELOPMENT OF E-GOVERNMENT PORTAL IN KARNATAKA

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Abstract

In this paper researcher present a structure of administrative contemplations for the plan and improvement and advancements of e-government gateways. The paper expands upon the accessible writing to devise a thorough structure which considers both back-end and frontend contemplations. Eight key variables are distinguished in the system. The system incorporates specialized just as socio-political contemplations. It gives a brilliant stage to future research on e-government gateways, which can likewise be stretched out to administrators as a valuable instrument for learning the viability of their administration's entry.

Keywords: framework, e-government, effectiveness, portal.

1. Introduction

Governments in both developed and developing countries continue to make massive financial and political commitments towards change initiatives that are enabled by advanced Internet and communication technologies (ICTs) (Fountain, 2001). Broadly, these initiatives which lead to the adoption and use of advanced ICTs in public administration by government organizations at all jurisdictional levels are grouped under the umbrella term “e-government” (OECD, 2003). The significant increase in the availability and use of government information and services online is a testament to the importance of e-government (Muir & Oppenheim, 2002). However, several academic papers and analyst reports' still point out that return on egovernments investments is very low or negative in many jurisdictions because these projects often fail to improve service quality (Accenture, 2005; Bhatnagar, 2002). While the exponential surge in e-government initiatives promises widespread access, it also poses significant challenges for managers who are responsible for those initiatives in their respective jurisdictions. In this paper, we focus on developing a framework of managerial considerations for effective design and development of e-government portals.

Synonymous to majestic gateways of large buildings, in a literal sense, portals are anchor websites. E-government portals provide a single jurisdictional window for offering services and information for all of a government’s departments to the citizen/customer, government employees, and other stakeholders (Tatnall, 2005; Deloitte Research, 2000b) and signify a move beyond information-only government websites. E-government portals let governments reach out to the citizen/customer around the globe — inexpensively and around the clock as an integrated and single entity (Stauffacher, 2002). However, despite high potential benefits there are only a few e-government portals that can be considered successful. The rate of adoption for many portal initiatives has been found to be much less than expected (Norris & Moon, 2005).

This exploration is roused by a need to build up an exhaustive system of administrative contemplations for plan and advancement of e-government entrances. Eight key contemplations (division, administrations, route, content administration, execution approach, administration, take-up system and IT engineering) in the structure and improvement of an e-government entrance were recognized dependent on the survey of writing and our investigation of a few e-government entries. We add to the writing by blending the writing of administrative contemplations that influence e-government gateway viability. The proposed system develops the writing by consolidating both the front-end and the back-end contemplations for the plan and advancement of e-government entryways and gives a stage to additionally research and practice. The following segment gives a short foundation and a dialog on the development of egovernment gateways. Area 3 talks about the theoretical system proposed in this exploration. Area 4 gives an exchange
of the key front-end plan contemplations and a portion of the related accepted procedures and Section 5 gives a talk of the key back-end properties. Segment 6 gives a short end and roads for further research.

2. Development of E-Government and Portals

The idea of e-government began with the appearance of government sites in the mid 1990s. With movement in data innovations, expanded authenticity of the Internet as an exchange medium, and the improvement of satisfactory foundation and guidelines, government site before long developed into a profoundly potential channel for supporting an array of front-end and back end-exercises of the legislature and giving its administrations on the web. Singular services, understanding the capability of the Internet, took onus on themselves to create inventive approaches to change their site into an assistance conveyance channel. Lamentably, not all administrations and their specializations advanced their sites similarly. For instance, not many considered online assistance conveyance as a high potential chance and made it a key need, while others were happy with setting up fundamental online nearness. Most e-government activities advanced in departmental storehouses and needed joining which prompted clamorous improvement and boundless irregularity in online help conveyance systems of most governments.

A solid requirement for incorporated, organized, and institutionalized e-government was generally watched and revealed by a few examiners and specialists (e.g., Accenture, 2004), which incited expansive activities to patch up singular activities as well as the whole e-government procedure. A definitive objective was to dispose of repetition in administration conveyance and give a "solitary window" for getting to all taxpayer supported organizations which prompted the improvement of e-government gateways. E-government entry's capacity to get to substance and applications legitimately from various databases of individual services introduced a chance to guarantee a predictable and consistent experience for the client. In such manner, e-government entrances can in a general sense be considered as an authoritative development and transformative marvel for changing government associations into more resident driven and productive associations.

3. Reasonable Framework

E-government entrances have been a subject of numerous examinations over the most recent couple of years. A few cases of egovernment entry usage have been praised in scholastic papers just as examiner reports. Kling (1978) has placed that a far reaching data frameworks (IS) plan structure should comprise of specialized just as social and political parts of innovation selection. Be that as it may, writing on egovernment entryway adequacy is divided, and accessible systems center predominantly around the specialized parts of gateway structure and advancement. For instance, Zhang and von Dran (2001) contend that e-government gateways are like web based business sites as far as advantages to clients. They set that site characteristics, for example, simplicity of route, clear format of data, cutting-edge data, search device, and precision of data assume significant jobs in giving advantages to clients as far as site quality. Likewise, an overview did by World Market Research Council (WMRC) and Accenture distinguishes records for assessing execution of government gateways discovered that data accessibility, interface, etrade, application administrations, and openness are the most significant records for assessing egovernment entry execution (World Market Research Council, 2001).

In another examination, Fang (2002) has proposed ten qualities of an e-government entrance. He sets that an egovernment entrance should be exhaustive, incorporated, omnipresent, straightforward/simple to utilize, open, secure, private, re-built, interoperable, and ought to have created e-administration frameworks. Notwithstanding, e-government gateway activities are relied upon to offer consistent, coordinated data and administration conveyance (Gant and Gant, 2002), where incorporation crosswise over divisions, straightforwardness and responsibility (Macintosh, Robson, Smith, and Whyte, 2003), and successful administration and association (McNeal, Tolbert, Mossberger, and Dotterweich, 2003) are similarly significant contemplations. A cautious examination and investigation of the accessible structures uncovers that they just consider the social and specialized parts of IS for example front-end qualities of the e-government gateways. In any case, none of them is worried about the political parts of IS which additionally contribute towards the selection and utilization of the gateways.

The theoretical system proposed in this examination, looks to expand upon the past structures and models by joining the political parts of IS additionally by including traits such gateway administration, initiative, and execution approach. Our proposed system (figure 1) comprises of eight key e-government entryway structure and improvement traits that have been sorted into front-end and back-end qualities that comprise of regulatory, specialized, and political issues worried about e-government entries.
4. Front-End Attributes Front-end

structure and improvement traits are those that are noticeable on the customer side of a framework. We have recognized four key front end characteristics as pivotal contributions towards gateway viability: administration conveyance; client direction, ease of use, and dependability.

4.1 Service Delivery

Service conveyance alludes to the way toward offering taxpayer driven organizations through e-government gateways. Administrations offered through an e-government entrance are one of the key persuading factors for partners to embrace and in this way utilize the gateway. The sorts and number of administrations offered through e-government portals depend, to a huge degree, on the fundamental framework capacities and combination of utilitarian offices giving those administrations at the back-end. Be that as it may, reception of an entryway by resident/clients is legitimately identified with a) the accessibility, and b) availability of different administrations offered on the e-government gateway. This has provoked us to arrange benefits as a front-end authoritative quality.

4.2 Customer Orientation

Customer direction is a key basic for drawing in more residents/clients to an e-government entryway and improving help quality. We accept that a) superior division, and b) improved client care empowers entry administrators to improve the entryway take-up by making it more resident/client driven.

Division

Segmentation empowers supervisors to target data and administrations towards explicit clients (Egan, 2004). It is a significant characteristic for guaranteeing expanded take-up of an e-government entryway (Mohammad, Fisher, and Jaworski et. al., 2004). The accompanying three different ways of fragmenting e-government entries were utilized by a portion of the main e-government locales we contemplated in this examination: • By Beneficiary: This method for division empowers e-government gateways to focus on its crowd by offering administrations for a specific gathering, for example, resident/client (G2C), organizations (G2B),
employees (G2E), and other governments (G2G), who can find and use the services that they need (The City of Cape Town, 2003).

- By Department/Agency: This way of segmentation enables e-government portals to target citizens/customers by services offered by departments. This eliminates any confusion regarding the jurisdiction of departments over e-government service as the services are listed in under the department that offers them.

- By Life Events: This way of segmentation enables e-government portals to target customers/citizens by the stage of their life-cycle. Singapore’s eCitizen Central Portal (http://www.ecitizen.gov.sg) is a successful example which displays government services according to stages in customers’ lives (called “Life Journey” on the portal), beginning with registering a birth, through seeking employment, opening up a business, and retirement (Deloitte Research, 2000a).

Customer Support

E-governments portals that are equipped with customer support features are able to respond to citizen/customer better+ with respect to help and support requests. Customer support features put citizens/customers firmly at the center and help portal architects by organizing all the necessary information and services around use patterns and habits (Accenture, 2005).

- Automated: Automated help and support features are installed in an e-government portal by default and are available to the citizens/customers automatically all the time. They act as guide for accessing information and services on the portal.
- Human Intervened: Sometimes the automated customer support features are not able to guide or help the customers/citizens and human intervened customer support is required. Human intervened customer support can be provided online through integrated chat or email programs or over the phone through call centers.

4.3 Usability

Usability refers to the degree of ease and feasibility with which citizens/customers are able to use an egovernment portal (Davis, 1989). Portal acceptance suffers if the citizens/customers do not perceive a system as easy to use and useful. We propose a) efficiency and, b) layout and design of the portal as key considerations that enhance the usability of an e-government portal.

Efficiency

Efficiency of an e-government portal refers to the accuracy and completeness with which its users can achieve specific goals (Nielsen & Levy, 1994). An e-government portal is termed efficient if customers/citizens/government employees feel that their output and job performance increases by using the portal.

- Search and Help Features: Easy to use search feature on the e-government portal, that has the ability to provide relevant and accurate search results (information) to users with a lower response time amounts to higher efficiency (Kulviwat, Guo, & Engchanil, 2004).

- Other Efficiency Mechanisms: Other efficiency enhancing mechanisms include online interaction, faster download time, error prevention, faster recovery time, and session back-ups (Collier & Bienstock, 2006).

Layout & Design Symmetrical organization of the content, links and navigational features, along with use of better aesthetics improve the layout and design of an e-government portal. An e-government portal must have a consistent design to be able to appeal to the citizen/customer. We think that to achieve consistency, the portal should have certain features which are as follows:

- Aesthetics: The aesthetics of the website comprise of graphics and layout, colors, multimedia and other features that are critical to the success of an e-government portal. Consistency of the logo, web page design, colors, and icons, however, have been found to be the most important factors that can improve site design and layout (van der Merwe & Bekker, 2003).

- Navigation: Navigation is defined as “the process whereby people determine where they are, where everything else is, and how to get to particular objects or places” (Jul & Furnas, 1997). A well articulated navigation system for an e-
government portal, that is designed according to user needs and has proper menu systems, site maps, and moderated/non-moderated spaces for the presentation of content, greatly enhances the usability of the portal (Jul & Furnas, 1997).

4.4 Trustworthiness

Trustworthiness is the perception of confidence in an e-government portal’s reliability and integrity (Belanger, Hiller, & Smith, 2002). While citizens’ reluctance to use e-government portals is a major challenge in their adoption, citizen trust is an important catalyst of e-government adoption. We have identified a) accountability, b) transparency, c) security, and d) privacy, as ways to increase trustworthiness in e-government portals.

Accountability

Accountability is the relationship between an e-government portal and citizens/customers in which the portal is held to account for its performance by the citizens/customers (Meijer, 2003). Accountability with respect to egovernment portals is divided into internal and external accountability (Meijer, 2003). Internal accountability exists within the bureaucracy of the organization whereby the portal is accountable to the higher echelons of the organization for the information and services it offers. External accountability exceeds the boundaries of the organization where the portal is accountable to citizens/customers for the information and services it offers (Wisniewski & Stewart, 2004).

Transparency

Transparency refers to the organization of information on the e-government portal that reveals the depth of access it allows, the depths of knowledge about processes it is willing to reveal, and the level of attention to citizen response it provides (Demchak, Friis, & La Porte, 2000). Transparency in functioning can lead to increased trustworthiness in e-government portals (Gant & Gant, 2002).

Security

Security has been defined as the protection against threats such as a situation, condition, or incident with the potential to cause economic hardship to data or network resources in the form of destruction, nonprotection, modification, denial of services, fraud, mismanagement and abuse (Kalakota & Whinston, 1996). Several studies have found that security is a potential indicator for consumers to take online purchasing decisions (Zhang & von Dran, 2001). With regards to e-government portals security can be conceived as transactional security, authentication, and protection against functional risks. Better security in e-government portals leads to increased trustworthiness i.e. if citizens/customers are assured that the personal or financial information that they entering in an e-government portal is secure and cannot be tampered or misused, their trust in the portal’s reliability and integrity is increased.

Privacy

Privacy breaches can shatter public trust in e-government as e-government portals hold vast amount of personal information (CDT & infoDev, 2007). Citizens/customers are always concerned about privacy issues such as disclosure and misuse of personal information (Ranganathan & Ganapathy, 2002). These issues influence citizens’ attitude towards the portal and can impede the adoption of the portal. If the citizens/customers are sure that their personal and financial information is kept private and cannot be used without their approval, their trust in the entryway’s unwavering quality and trustworthiness increments and trust is produced.

5. Back-End Attributes

The back-end plan and advancement properties of an e-government gateway are those that are not commonly noticeable on the customer side of the framework. These properties incorporate execution approach, administration, IT design, and substance procedure.

5.1 Implementation Approach
Implementation approach alludes to the procedure through which an e-government entryway is fabricated and actualized. With a high number of administrations being offered and basic data gave, the assignment of executing e-government turns out to be testing and frequently a progressing procedure. A few issues, for example, security of on-line exchanges, consistency of uses, and mix of all the practical offices must be dealt with before the execution venture is moved on (Beynon-Davies and Williams, 2003). An e-government execution venture requires a) venture the board and b) consistent improvement for upgrading entryway viability.

**Task Management**

Project the executives is a key factor in guaranteeing that an e-government entry usage venture is done effectively since the usage venture requires cautious arranging, the board, and advancement.

- **Project Planning:** It incorporates the basic exercises of arranging, including data review and institutionalization, process mapping and structure, authority procedure and modernization, informatics system, chance evaluation and money saving advantage investigation (Beynon-Davies and Williams, 2003; PeopleSoft, 2001). Be that as it may, arranging ought to likewise incorporate contemplations over key empowering agents of the inner worth chain and production network of the e-government gateway: for instance, choice of accomplices for administration conveyance, determination of different channels for administration conveyance, and getting ready for the kind of administrations the entry is going to offer.

- **Execution and change the executives:** This factor is worried about the administration part of the egovernment entryway usage venture (Beynon-Davies and Williams, 2003; PeopleSoft, 2001). The board of e-government gateway execution process is frequently tremendous, not oversaw inside the inside accessible assets, thus appropriation of set up conventions and benchmarks are expected to limit customization (Bhatnagar, 2002). Accessibility of solid undertaking aptitudes in the association is essential to handle the issues emerging because of venture execution and change the executives.

**Constant Improvement**

There is a continuous discussion in the writing on whether to term an e-government gateway activity a task or a progressing program. Be that as it may, by and by we found that numerous e-government entryway ventures are ceaseless as they become a method for working together. A few governments are attempting to improve their IT abilities for giving long haul an incentive to their customers and partners through e-government entrances. In any event, when treated as ventures, effectively actualized entryways depend vigorously on the consistent improvement process for more noteworthy adequacy. The vast majority of the ideal potential business benefits are accomplished through this continuous procedure, where alongside some tweaking of the innovation, the association alters its work rehearses, ranges of abilities, business procedures, and standards to build up a superior fit, utility, and worth (Bhatnagar, 2002).

**5.2 Governance**

Governance is key factor which is required to give a system to choice rights and accountabilities to empower alluring conduct in the utilization of an e-government entrance (Weill, 2004). It incorporates the utilization of institutional structures of power and cooperation for apportioning assets and controlling exercises of an e-government gateway venture. Administration can be sorted into an) administration model and initiative that is worried about the power or choice privileges of e-government entryways, and b) take-up technique that is worried about formulating systems so as to build take-up of e-government gateways.

**Administration Model and Leadership**

The goal of gateway administration is to recognize jobs and connections required for strategy setting, control, and observing the utilization of the e-government entry (Rau, 2004). Effective entrances depend vigorously on a sound administration model. Weill (2004) proposes five IT administration models (Table 2). The vast majority of the main wards read for this examination utilized IT Duopoly administration models in accordance with suggestions made in the writing (Weill, 2004; Davenport, 1997).

<table>
<thead>
<tr>
<th>Governance Model</th>
<th>IT Decision/Input Rights</th>
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The administration models require solid official authority that can control the entire basic leadership process as for the e-government entrance venture. A few papers propose utilization of an IT administration board that accepts accountability over all business capacities for arrangement setting, control (spending endorsement, venture approval, execution evaluation), and execution the executives and announcing might be significant for giving initiative to tasks of such extents (Rau, 2004; PeopleSoft, 2001). Take-up Strategy

The potential advantages of e-government entryway, for example, improved assistance, more noteworthy proficiency, and potential cost reserve funds won't be acknowledged whether their take-up is low (Malta e-Government White-Paper, 2001). Basic take-up limits must be come to make an e-government entryway usage worth the venture. Subsequently, unique take-up procedures, for example, marking and advancement should be thought about.

- Branding: Branding empowers to make a corporate character for the e-government gateway that is particular from that of the useful offices giving the person back-office administrations. The point is to give the picture of Government e-benefits as one homogeneous item (Mohammad, Fisher, and Jaworski et. al., 2004). Marking expands the brand value of the entrance and guarantees that residents/customers get sincerely and mentally connected to the gateway and subsequently is significant so as to guarantee high take-up.

- Promotion: Promotion is the "voice" of the brand, and it is basic to mark value (Keller, 1998 in Mohammad, Fisher, and Jaworski, et. al., 2004). It is a significant apparatus for guaranteeing brand acknowledgment therefore expanding entry take-up. It incorporates all types of correspondence, for example, TV advertisements, standards, interstitials, messages, coupons, and sponsorship bargains that are intended to advise, remind, or convince target clients.

5.3 IT Architecture

IT design alludes to the hidden mechanical engineering of an e-government entrance. Its solidness and versatility are basic for effectively executing an e-government entrance. An e-government gateway must be fit for giving access to all administration back-end administrations from all conveyance channels, organized to oblige diverse back-office prerequisites, adaptable to suit developing and changing necessities of innovation, prepared to deal with advanced approval, and equipped for taking care of eccentric volumes of traffic (Accenture, 2004; Deloitte Research, 2000b).

Administrations offered through an e-government gateway are created in an extremely unpredictable mechanical situation as regularly different offices and innovative stages are included. A typical and incorporated IT engineering improves correspondence between various government offices with the goal that residents/clients need not ask a similar data or administration independently from various government organizations (Tyndale, 2002), consequently expelling disarray, vagueness, and multifaceted nature. Creators Ebrahim and Irani (2005) and Sharma and Gupta (2002) recommend a multi-layered system for building up the IT design for egovernment gateways. Multi-layered design encourages the trading of information and administrations between and inside open segment associations, just as

<table>
<thead>
<tr>
<th>Business Monarchy</th>
<th>A group of, or individual, business executives (i.e., CXOs). Includes committees comprised of senior business executives (may include CIO). Excludes IT executives acting independently</th>
</tr>
</thead>
<tbody>
<tr>
<td>IT Monarchy</td>
<td>Individuals or groups of IT executives</td>
</tr>
<tr>
<td>Feudal</td>
<td>Business unit leaders, key process owners, or their delegates</td>
</tr>
<tr>
<td>Federal</td>
<td>C level executives and at least one other business group (e.g., CXO and business leaders) – IT executives may be an additional participant. Equivalent to a country and its states working together</td>
</tr>
<tr>
<td>IT Duopoly</td>
<td>IT executives and one other group (e.g., CXO and business leaders)</td>
</tr>
<tr>
<td>Anarchy</td>
<td>Each individual</td>
</tr>
</tbody>
</table>

Source: (Weill, 2004)
supports the consistency of government information and exchanges. The four unmistakable layers which are coherently associated include: a) get to layer, b) e-government layer, c) ebusiness layer, and d) foundation layer (Ebrahim and Irani, 2005).

**Access Layer**

The entrance layer is the main degree of a gateway's engineering which gives the interface to entry clients (Ebrahim and Irani, 2005). It stretches out access to an extent of on the web and disconnected channels through which clients can get to taxpayer supported organizations. It is basic for better entryway reception that open division associations keep up channel coordination by making a typical look and feel crosswise over various channels. So as to give a typical method for discovering all administration data and administrations, gateway administrators must create rules and furthermore agree to them (The Cabinet Office of UK, 2000).

**E-Government Layer**

The E-government layer characterizes the ways to deal with improve channel coordination and mix of various administrations offered by open area associations into a one-stop e-government entryway. This layer additionally characterizes the e-government entry portions, for example, which administrations are focused toward which voting demographics. This is where G2C or C2G and different associations occur (Ebrahim and Irani, 2005). Nonetheless, this joining can't be accomplished without a strong and interoperable establishment of perfect and coordinated data frameworks and applications.

**E-Business Layer**

This layer centers around mix, coordination, and cooperation inside and between singular frameworks among different government organizations (Smith, 2004). This layer characterizes the ICT application and devices that ought to be utilized for data preparing and information sharing (Ebrahim and Irani, 2005), for instance, a choice of basic applications and data frameworks, for example, web administrations, EAI, ERP, CRM, and information stockrooms that assume a huge job in e-business layer design and along these lines bolster the egovernment activities. The capacity of this layer is to coordinate front-end e-government layer applications with back-cut off exercises to help the association and communication of different fragments like G2E and G2G (Ebrahim and Irani, 2005). Consequently, this is the layer that gives a consistent, programmed, and continuous correspondence between their frameworks at both an information and procedure levels.

**Framework Layer**

Infrastructural layer is the establishment layer of an e-government entryway's IT design. This layer gives a solid establishment to the remainder of layers, for example, get to layer, e-government layer, and e-business layer (Ebrahim and Irani, 2005). This layer characterizes the different models and conventions, for example, the web, intranets, extranets, and PC equipment (Ebrahim and Irani, 2005; Smith, 2004). Coordination at the framework layer is similarly significant for interoperability and smooth working of the entryway and can be accomplished through important guidelines and conventions (Ebrahim and Irani, 2005; Smith, 2004).

**5.4 Content Strategy**

Content methodology is a key back-end characteristic that directs what substance is distributed and how it is distributed on an e-government entryway. It is viewed as one of the most significant plan qualities of an e-government entry (Gant and Gant, 2002). Utilization of an) a controlled jargon and b) a substance the executives framework upgrades the administration's authoritative productivity of distributing solid and state-of-the-art data on the entry and henceforth improves the gateway's viability.

**6. Conclusion**

This paper combines the applicable writing to give a thorough system of administrative contemplations for the structure and improvement of e-government gateways. We feature eight key plan contemplations and a portion of the noticeable accepted procedures related with those contemplations. Be that as it may, the examination is still at an exploratory level - an observational investigation is required to test the proposed system. The structure created adds to the current writing by giving a stage to additionally look into. Also, e-government gateway directors can utilize this system as a device to deal with the structure and improvement procedure of their entrances.
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