



E-Governance Web Portals Assessment of Two States

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Abstract— Web portal has a great role in delivering services in the era of e-governance. Each centre and state government has its own web portal. All states are not performing at same level in the implementation of various e-governance programmes. Metrics like quality and security are important for a good web portal. Two states portals have been taken into account for comparative analysis on the basis of Metrics like service delivery, usability, accessibility, broken links, feedback and traffic analysis for good web portal. The two portals chosen for comparison are Karnatka and Haryana

Keywords— SSL, NPI, W3c, E-Governance, web portal, ICT

I. INTRODUCTION

In a democratic country like India, it is the Duty of the Government to provide services to the people of nation. In the modern world of Information and Communication Technology (ICT) cost of online transaction is decreasing owing to like diminishing cost of hardware components required, cost of availing telecommunication services, competition in the service provider market etc. In order to promote citizen participation, governments need to facilitate access to information by citizens. Portals are very powerful tools to route all services from different disciplines of science and management to various users and stakeholders [2]. Government portals are designed to encapsulate the size and complexity of government which for decades have acted as traditional barriers to easy access of citizens to government services. Government portals serve more than a simple gateway or single point entry to government services for citizens [2]. E-Government portals can fundamentally be considered as an organizational innovation and evolutionary phenomenon for transforming government organizations into more citizen-centric and efficient organizations [1]. Such initiatives contribute to increase transparency and deliver better governance. Many state governments deliver various types of services through their web portals. Initially, Governments started form online relationships with citizens using static web pages that disseminated various isolated pieces of information. But as citizens became familiar to the web and number of online users increased the governments have now begun to form web portals. Web portals allow visitors to enter a state government web site and obtain online services delivery [10]. With the advent of the Internet and rapid development in technologies, ICT has made its way to front-end service delivery through such means as a government portal [6]. Delivering online services through government websites is not enough. In addition, services and information should be accessible easily, intuitively and fast

[19]. Web portal reduces the need for dedicated governmental representatives to be available by other modes of communication like Phone or email to provide information to citizens. Other benefits include reduction in the costs for the government in delivering timely information to its citizens. The citizens will also benefit from timely and readily available information as well as a medium to avail services [12]. Hence web portal that acts as a window to the various services and is beneficial not only to the government but also to its citizens [12]. Section 2 of the paper defines certain metrics, section 3 describes literature survey, section 4 gives analysis of the portals and section 5 concludes with future scope.

II. METRICS

As much as the expansion of use of Information Technology (IT) in various processes is increasing the security, is becoming main agenda [9]. Various key elements for checking effectiveness of web portals considered are ease of navigation, usability, accessibility and functionality. There may be lot of information available on the portal but without search option may dissuade users to use the portal for services that are available but are not known to the users. For standardization and interoperability certain guidelines have been provided by centre Government with the cooperation of Department of Information Technology (DIT) and Department of Administrative Reforms and Public Grievances (DARPG) [16]. Accessibility metrics provide a valuable role in establishing the extent to which a web resource can be effectively used by people with specific access needs [16]. World Wide Web Consortium (W3C) Web Content Accessibility Guidelines (WCAG) exists as standard for measuring technical web content accessibility. Websites must be monitored periodically to fix compatibility and quality issues [17]. Many e-governments are responsible for managing and organizing a variety of information. Thus, the

search function, functionality, and navigation become very important for the execution of those responsibilities [18]. E-metrics are necessary for long term success. With e-metrics, you have the opportunity to approach the Web from an objective, systematic perspective. You can move from trial and error to trial, measure, and improve [4]. The metrics considered for the two portals have been categorized as Internal and External. Internal metrics are those which are technical and of the government level, whereas external metrics are related to users and other outside the government. Internal metrics include content level, infrastructure, traffic analysis, broken links, performance whereas External metrics include service delivery, usability, accessibility, trustworthiness for transaction, and feedback on these metrics. This Metrics categorization has been shown in the table 1.1

Table 1.1 Metrics Categorization

Internal metrics	External metrics
Content level	Service delivery
Infrastructure	Accessibility
Traffic analysis	Usability
Broken links	Trustworthiness
Performance	Feedback

III. LITERATURE SURVEY

E-Qual [8] is a method for assessing the quality of an organization’s electronic offering. The E-Qual Index gives an overall rating of a Web site that is based on user perceptions of quality weighted by importance. The research findings suggest that usability has been a major issue that requires attention [8]. Other findings of the study suggest the need for empathy and personalization in the delivery of services. Difference between the computerized and the manual system was analyzed for each dimension, and statistical significance of the difference was evaluated by [6]. The results of this study suggest that the seven ICT projects assessed had generally positive effect on clients and implementing agencies [6]. Choudrie Jyoti et al [10] stresses on the key issue of quality in terms of service from user perspective, content perspective and usability perspective. These three features were examined for e-Government web portals of Canada, Australia, Hong Kong, Finland and Singapore. Results confirmed that many Governments are neglecting accessibility, quality and privacy criteria. Whereas private sectors have improved in this criteria for B2B and B2C arena . More citizen relationship management (CRM) oriented approach to e-governance would encourage the design of better quality, more accessible and secure web portals. By providing deep insight into who, what, when, why and how of web site traffic and visitor behavior, web analytics tools can help you improve the usability of web site. One can optimize his web site for online transactions by using an SSL certificate and posting a security seal from a trusted vendor [14].

A. Choice of portals

E-readiness & E-Governance two different terms rather earlier is the base for the later. For the assessment of E-Governance projects Department of Information Technology (DIT) with Indian Institute of Management Ahemdabad and

National Institute of Smart Governance (NISG) came up with an E-governance Assessment Framework (EAF) in May 2004[13]. For evaluation of such projects Analytic Hierarchy Process (AHP) technique is used every year for measuring the overall performance of the e-governance projects implemented through various states in India. This job is done by Computer Society of India (CSI) by providing CSI-Nihilant National E-governance Awards under various categories. Projects submitted in all categories are evaluated through AHP. AHP is a structured technique to deal with complex decisions. In order to ensure reliability and consistency, AHP excel worksheets are prepared to capture both weight ages for each attribute of result and enabler indicator from the experts [11]. Other existing assessment model include: eGEP – The e-Government Economics Project, EU, Impact assessment model, IIM-Ahemdabad, India, VANDAM model, Australia, and A Public Value framework, UK [15]. On the same pattern at national level there is National Council of Applied Economic Research (NCAER) [3] which publishes report on the status of e-Governance in Indian states. This reports on the basis of three basic attributes which are essential for promotion of e-Governance in any state. These three attributes are environment which is created by the Govt. and private sector by providing infrastructure, second attribute is the readiness in which a state govt. prepares its citizens and employees to utilize that environment, the last attribute usage is the actual use of ICT to promote e-governance [3]. Here three stakeholders namely citizens, business and government have been taken into account. Principal Component Analysis (PCA) [3] technique has been used as method of aggregation which is objective. Multistage PCA has been used to construct e-readiness index of states and Union territories in India. The results of the report are shown in the figure 1.1 below

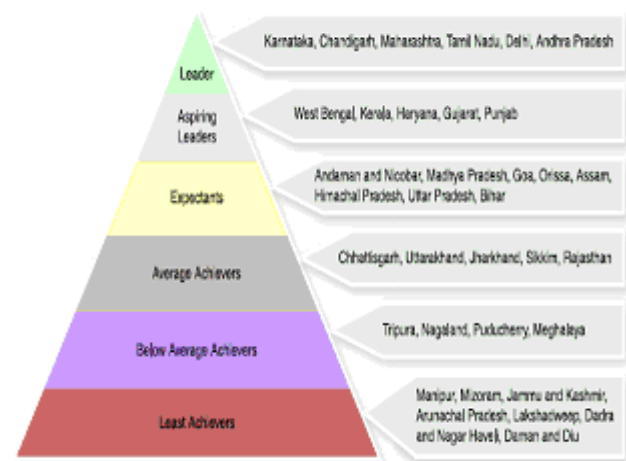


Figure 1.1 pyramid on the basis of 2008 ranking. Source [3].

Among the leaders only Karnatka and Chandigarh have come in leaders category in all the three subcomponents (Environment, readiness and usage). Chandigarh being a Union Territory is not taken into consideration. Hence Karnataka has emerged as leader in the report. Other achievements for the

session 2010-11 are shown in a table 1 at national level in the field of e-Governance [16].

TABLE I
DEPICTING POSITION OF KARNATKA IN E-GOVERNANCE

Award	Project
GOLD	Panch Tantra – Gram Panchayatha Online System, Rural Development and Panchayatha Raj Department, Government of Karnataka and NIC
GOLD	BTRAC 2010, Bangalore Traffic Police, Government of Karnataka.
BRONZE	Aasthi (GIS based Property Tax Information System), Directorate of Municipal Administration, Urban Development Department, Government of Karnataka
BRONZE	Electronic Fund Transferring System, Rajiv Gandhi Rural Housing Corporation Limited, Housing Department, Government of Karnataka.

That is why the portal of Karnataka and Haryana being the native state of the authors has been taken into consideration. These two portals are compared on the basis of certain metrics

IV. ANALYSIS OF PORTALS

The criteria of analysis have been explained above through various parameters. The two portals www.karnataka.gov.in [5] and www.haryana.gov.in [7] shown in figure 1.2 & 1.3 respectively, have been compared on certain Metrics.



Figure 1.2 Web Portal of Karnataka states



Figure 1.3 Web Portal of Haryana state

A. Internal Metrics:

Content level : Content is the soul of the portal it should provide links to every information may be required by the citizens of a state. Karnataka portal provides the facility of language choice between Kannada and English. Here more contents in a systematic way are provided for the citizens. One can find links of each district and even Zila Panchayat’s website at the portal. One important link which shows the interest in e-governance is the link for the largest e-governance project to be created known as ‘Aadhar’ is given. With the help of this link one can know the status of his UID no. and number of UID’s issued till date even district wise detail of UID is available. Information about various marriage acts and rules are also available on the Karnataka portal for general public. Emergency contacts like fire services, gas leakage, blood bank, ambulance, police, hospitals, air, road, bus transport, animal welfare. Search option and link to National Portal of India (NPI) is also available at the Karnataka state portal .Whereas in case of Haryana the content is less and that is also not in systematic way. Because here drop down menus overlap other options to view (i.e. online services and autonomous bodies). It has been described in Figure 1.4.



Figure 1.4 Showing overlap on autonomous bodies

(b)Infrastructure: The infrastructure information is available at district wise on the district website through the various columns like district profile, statistics, citizen services, major and minor projects etc at Karnataka Portal. Each district website has certain other useful links like state portal, NPI , online agriculture marketing information system, NIC, KPSC etc. so that citizens need not to remember the names of various important organization websites and can visit them directly. But this portal has no place for direct link on infrastructure. Whereas in case of Haryana portal there is a direct link on infrastructure so that people may like to invest through their projects in the state. Online agriculture products rates are available on District websites of Haryana Portal. On district websites a lot of information on citizen services, other important links, RTI, Citizen charter, NPI link and many other links are available for utilization of citizens. Availability of these services is less known to the users and hence popularity of these services is to be increased through various online and offline media.

(c.)Traffic analysis: Analysis of traffic is must for the success of portal. With help of this information one know the popularity and usability of the portal. Traffic analysis is done by having a look on the number of visitors on a portal. Karnataka portal has no place for the number of visitors. Number of visitors' information is available at district websites of Haryana but is not available at state web portal. Such information helps in improvement of various aspects of the portal and hence it should be available on state portal also.

(d)Broken links: Such links are symbols of underutilization of resources and hence these should be as minimum as possible on portal. In case of Karnataka there seems no such link whereas in case of Haryana there are some broken links available like accessibility options and contact us. These links are important for general citizens for accessing the information on the portal and providing suggestions for the portal.

(e)Performance: Performance of a portal depends on number of factors. Some of the factors may be updated information, ease usability of the portal, information search option and many more. Unavailability of these options degrades the performance of the portal. Another major factor about performance of portal is the language option which is available on Karnataka but not on Haryana. Performance of the portals can be increased by providing options for grievances which is available on both of these portals. Moreover last update information also enforces the users to utilize the services on the portal and Information on last update is given on Karnataka whereas it is not given on the Haryana portal. Hence comparatively Karnataka is better in performance wise.

B. External Metrics

(f) Service delivery: Portals are designed to provide online services to its citizens. Good portals provide more efficient delivery of services. Number of services provided by Karnataka state is more as compared to Haryana. One of the services provided by Karnataka and not by Haryana is various emergency contacts and UID status .Number of online

services provided by Haryana is less as compared to Karnataka. Moreover Karnataka portal has links of major national awarded projects (like Bhoomi and Kaveri) on its portal. Information about all major department websites, officers directory, government websites, district websites, e-forms, and various menus regarding education, general notification, grievances redress and recruitment notifications are available on Karnataka portal. In 'How do I ' column of Haryana portal , services like ration card, Driving license (learner and permanent), vehicle registration, electricity and water connection, electricity load enhancement, land registration and mutation, copy of land record, birth and death certificate, and approval of the building plan is available on the portal . Here one can have information about process, fees, work flow, forms and the list of documents to be attached with the form. Where as Bangalore-one e-Governance project having link on Karnataka portal provides many G2C, G2B and B2C services more than Haryana portal. That is why, Karnataka portal is better in service delivery as having more services as compared to Haryana.

(g) Accessibility: Portal must be accessible by each and every person. Important information for the villagers and other stake holders is not available. The services related with masses must be in active state. These portals are having some link which does not show the results like Nakal services for land on Haryana portal. Accessibility options link is not working on Haryana portal. Language related softwares must be available as it increases the accessibility. This facility is available at Karnataka portal in the download option of the main menu of the portal whereas Haryana is devoid of it. Facilities for handicap people to access the portal must be available as it increases the accessibility. But unfortunately it is not available on any of the portals.

(h)Usability: Options like language choice are available on Karnataka and not at Haryana. Various photos regarding historical places are placed so that tourist may have information about these places on their respective websites at Karnataka portal. CM on line facility is available on Karnataka Portal but not on Haryana portal. Search option facility is available at Karnataka portal but not at Haryana portal. All these links enhance usability of the portal. One can easily say that portal of Haryana is less usable as compared to Karnataka.

(i) Trustworthiness: At any portal, if one has any grievance query and that is answered after 30 days which is more time to wait for a person and leaves no meaning for grievance redress. Hence time for sorting out such queries should be as minimum as possible and maximum 15 days otherwise it dissuades the users to utilize online services. Trustworthiness of the portal is decreased. Status of files, documents, and letters can be easily seen directly from the portal of Karnataka whereas it is not available at Haryana portal. It provides the facility search the document, file and letter between two dates .By looking at the status of their letters, files and documents trustworthiness is increased. Pending file status of each department can be seen online

(j) Feedback: feedback is an important metric to improve a web portal. Until one does not know what are shortcomings in

a particular process, hurdles and shortcomings from that process can not be removed. Feedback option must be available at each portal dealing with citizens. Certain suggestions provided by citizens are very important and diminish lot of harassment and save a lot of government money involved in the current processes. Each district website at Karnataka portal has details of DC/SP/CEO Zila Panchayat of that district and one can send any grievance online to the concerned DC/SP/Chief executive officer of Zila Panchayat. These are the major heads of the concerned departments and 90% of the grievances are met by these officers. Feedback options while utilizing various services at the portal of Karnataka are available but these are not available at Haryana portal. Various feedback options are available at Nemadi rural telecentres and core committee at Karnataka portal. Haryana portal has no place for feedback options.

V. CONCLUSION

Karnataka is bigger state not only in terms of size but literacy also as compared to Haryana. It has been observed that service delivery is dependent on the system quality of a particular state in India. Performance and content level available online at Karnataka portal is better than Haryana, whereas Infrastructure, traffic analysis and dead links are not available on Karnataka as compared to Haryana. In terms of external metrics Karnataka portal is better than Haryana portal. This analysis is also confirmed by the E-readiness report by Department of Information Technology (DIT) [3] showing clearly that Karnataka is in leading positions in terms of E-governance implementation. Conclusively Karnataka web portal is better than Haryana has been described in the table 1.2.

Table 1.2
Comparative analysis of web portals
[√= available and ×=not available]

Sr.No.	Metrics	Karnataka	Haryana
Internal Metrics			
1	Content level	√	×
2	Infrastructure	×	√
3	Traffic analysis	×	√
4	Broken links	×	√
5	Performance	√	×
External Metrics			
6	Service delivery	√	×
7	Accessibility	√	×
8	Usability :	√	×
9	Trustworthiness	√	×
10	Feedback:	√	×

Another major drawback (on both portals) observed here is that many services are available online but are utilized neither by urban youth nor by the citizens in rural areas. Services like online marketing rates feature available on both the portal is very good feature and must be utilized by the farmers of the country to sell or not to sell their products accordingly. But there is need to provide popularity to such features in a country like India where most of the population resides in rural and agriculture is their profession.

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