

E - Governance Portals of City Municipal Corporations: A Comparative Study of Two cities of Madhya Pradesh

Jalaj Katare

Research Scholar
Shri Vaishnav Institute of Management,
Gumasta Nagar,
Indore

Snigdha Banerjee

Professor
Corresponding author School of Statistics,
DAVV, Vigyan Bhawan,,Takshila Parisar,
Khandwa Road,
Indore

Abstract

e-Governance has come to be recognised as an efficient means of management by the governments. It involves use of web portals for delivering government services to its various stakeholders to make a positive difference in manifesting the citizen centric focus of working of the government. In India, under the digital India initiative, major government functionaries are supposed to have their own web portals. The quality of portals may vary widely in terms of content, interface, performance and service delivery. A comparative evaluation of quality of web portals is plausible using some standard internal and external metrics in order to enhance the service quality of web portals by recognizing the relative shortcomings as compared to other similar portals. In this paper, we undertake comparative analysis of municipal corporations of two cities namely Indore and Bhopal of Madhya Pradesh on the basis of standard attributes like service delivery, usability, accessibility etc. for a good web portal.

Keywords - e-Governance, web portal, Municipal Corporations, Urban Local Bodies (ULB), Information & Communication Technology (ICT), internal and external metrics

Introduction

In this digital era, on one hand, customer demands are never ending in terms of excellence in service quality of e-services, while on the other hand service providers continuously strive for assessment of customer's expectations, identification of problematic areas and up gradation or change in the operational processes to ultimately satisfy the customers. The field of e-Governance services is not an exception. The government websites serve from simply being - an administrative tool and an information placeholder - to becoming tools that enhance the utility and the efficiency of government services provided to the user community.

Now a days websites are integral part of our everyday life. Despite the low literacy rate and language barrier, internet users have increased manifold in India. Users are increasingly enjoying better connectivity speed (3G to 4G) at affordable price.

e-Governance is a means of management by the governments, using web portals as the carrier of delivering government services to citizens. This will certainly makes a positive difference in manifesting the citizen centric focus of its working. To achieving this difference the government must come out with its presence over the web with an aim

to: (i) promote enhanced government-citizen interaction and (ii) achieve an improved efficiency in the government operations with maximum transparency.

“The traditional government transactions in India used earlier involved elongated procedure, record keeping, rendering the access to information and documents to the public a much delayed cumbersome task with the person trying to acquire the service having to make repeated trips to government offices while having no idea regarding the status of the process” Katare et al. (2016 a).

Assessment of website quality remains a challenging area for all stakeholders viz. web developers, service providers, governments and even citizens. Canada government leadership survey program is one of the most extensive of its kind for any country designed to receive feedback from its citizens and businesses about their needs and satisfaction (Accenture, 2004). Assessment of websites can be carried out in several ways:

Self-evaluations by the developer or service provider.

Expert evaluations by a group of subject or field experts.

User tests and user surveys by the actual users.

In the current study we follow the path of evaluation based on mixed views – those of users and of experts.

In the remaining part of the paper, Section 2 provides a brief literature survey and motivation for the work, section 3 defines certain standard metrics under website assessment methodology, section 4 gives analysis of the e-portals of Indore and Bhopal city municipal corporations and section 5 concludes with future scope.

Literature Survey

Parasuraman et al. (1988) defined service quality as the comparison between customer expectations and perceptions of service. An extensive literature is available about website constructs and their content based on various studies on e-service qualities (Zeithamal et al., 2002; Barnes and Vidgnen 2003; Esteves, 2005).

Liang and Lai (2002) have found that the likelihood of visitors and the frequency are positively correlated with the quality of a website. Katare et al. (2016 a) point out that citizens visit a website more frequently, if they encounter a positive online experience and feel that their perceived benefits are fulfilled in terms of basic and value added services.

Research has also been conducted on various issues associated with municipal e-Governance at international, regional, national and city levels by Delitheou and Maraki, 2010; Sandoval-Amazan and Colin, 2011; Writz and Nietzsche, 2013 etc..

Local government is where the majority of interaction between civil society and government occurs (Flak et al., 2005). Moon and Norris (2005) argue that due to citizen demand of more facilities in terms of services and dissemination of information, large city authorities are more prone to take on e-government activities, compared to smaller sized cities.

Studies have rarely been reported in literature on municipal web portals in India. In Indian context, Tiwari and Khare (2014) assert that, ULB's viz. Nagar Palika or the Nagar Nigams (Municipal corporations) in urban areas is the third tier of government which works under the state governments. The Municipal corporations are directly responsible for many tax payments, infrastructure development and maintenance of street light, water, sanitation, roads, local transport and school level education.

Katare et. al., (2016 b) assess the seven municipal websites of the state of Madhya Pradesh in India using municipal e-government services model. They applied correspondence analysis and cluster analysis to identify the area of poor performance to make out and accomplish the possible levels of improvements in overall quality of the websites.

Website Assessment Methodology

In India, e-readiness rankings are available for the states but not for the lower level of governance especially for local governance i.e., ULB's.

Hence, research is required to assess the type of web presence of city municipal corporations in order to address the lacunae in assessment of web portals at lower level of hierarchy. In this research, we have undertaken the portals of following two municipal corporations of state of the Madhya Pradesh selected for qualitative comparison -

- a) **Indore** – being portal of the city known as industrial capital of the state as well as a city selected for SMART city initiative by government of India.
- b) **Bhopal** – the state capital has a web portal that may be deemed a leader among the other municipal corporations portals of Madhya Pradesh and taken as a benchmark for the current comparison.

Metrics

In the published literature, researchers have put forth various attributes for any web portal in order to decide upon their effectiveness. Accessibility, usability, ease of navigation, security, privacy, functionality in different terms like easy search, interaction etc. may be few to name.

Metrics are quantitative measures which, would provide assessment of various attributes of the web portal and hence enable the service provider or the policy maker to identify and progressively fix the issues related to quality in terms of compatibility, services and user satisfaction.

In general, metrics may be classified into two categories:

a) **Internal:** Those concerned with performance attributes within the portal.

b) **External:** the metrics related to the user's perspective.

The attribute related to this metrics categorization are shown in the figure 1

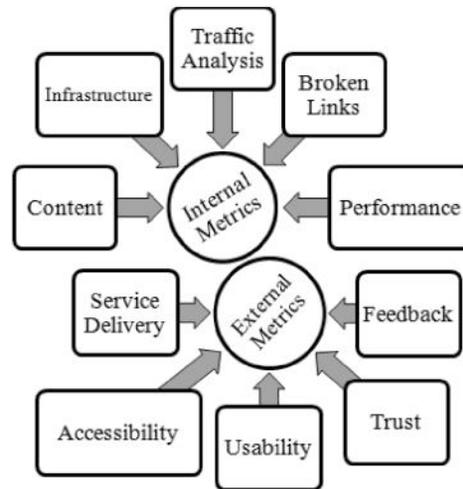


Figure 1: Attributes related to internal and external metrics.

Our comparison of portals is based on these two major types of metrics viz. internal and external, which are subsequently subdivided into minor criteria/attributes relevant to the present study as obtained from Chander and Kush (2012) and Katare et al., (2016). We now explain below in brief, the sub criteria/attributes of the two metrics:

(i) Internal Metrics:

- (a) **Content level:** Content may be considered as the backbone for any portal. A user who is exploring for any major non classified information over the e-governance portal may move around the various links, tabs and menus embedded in the content.
- (b) **Infrastructure:** The infrastructure attribute includes the options like city profile, council, city map at different level of details, statistics, citizen services etc.
- (c) **Traffic analysis:** While one cannot neglect the importance of count of visitors as a common measure of success of a portal, external links provide an important facility to the citizens so that they can visit the important portals and organizations directly without remembering the web addresses of various websites.
- (d) **Broken links:** In simple terms, broken links are the links that lead the user to nowhere or do not go any further or show under construction pages.
- (e) **Performance:** Although characterized by many factors as per their utility, the commonly recommended performance enablers are: updated information, information search option, language selection, font size and mechanism for feedback or complaint receiving / redressal.

(ii) External Metrics

We now explain each component of the external metrics below:

- (f) **Service delivery:** Varieties of efficient services offered through government e-portals are one of the key motivating factors for its stakeholders to adopt and use the e-portals.
- (g) **Accessibility:** An excellent accessibility of a web resource by citizens with need to have mechanism developed for access to specific desired information in terms of delivery through multiple channels viz. mobile phones, kiosk, digital TVs etc., access to physically disable peoples and access in multiple languages especially in local language.
- (h) **Usability:** It refers to the degree of ease and feasibility with which citizens are able to use an e-governance portal (Davis, 1989). A wide range of user friendly options enhance the usability of a portal.
- (i) **Trustworthiness:** Trustworthiness is the perception of confidence in an e-government portal's reliability and integrity (Belanger et al., 2002). e-services should be aimed at reduction of service delivery time otherwise it would dissuade the users from utilizing online services.
- (j) **Feedback:** Feedback is the important tool to know shortcomings in a particular process which, if properly used, may help in removing the bottlenecks and hurdles and enables improvement of a web portal.

Analysis Of Portals

Based on the perspectives of the various attributes of present comparison of the two cities. internal and external metrics explained above, we now

(i) Internal Metrics:

Table 1: Comparison of the Two City Portals for Attributes/Criteria under Internal Metrics

S.No.	Criteria	Bhopal Portal (BMC)	Indore Portal (IMC)
a _{1,1}	Visitors Count	No count was available.	No count was available.
a _{1,2}	External Links	Separate page for few services at home page like city transportation, Samagra Id, Building map permission, e-procurement etc.	Home page contains link for Smart City page and building permission only. No. of links were less as compared to BMC.
b _{1,1}	Content placement	Content has wide coverage. Presentation: section wise more systematically, equally distributed and properly aligned.	Content has less coverage. Presentation: not very systematic.
b _{1,2}	Contacts	An exhaustive list of various emergency and utility contacts was provided in separate page while clicking link – “City information → Helpline”. A separate list of contacts related to Bhopal Municipal Corporations was available under “Corporation → Telephone Directory”.	Site was lacking any contact information for public utility or helpline or emergency contact. Even under the option “Contact Us”, only postal address of the municipal corporation was given.
c _{1,1}	Broken links	Few broken links were available.	No broken link was available.
d _{1,1}	City Information	A comprehensive coverage of the related information under various headings about Bhopal, informative maps, helpline, tourist information and weather was available.	No appropriate information was available.
d _{1,2}	Citizen Services	A wide range of citizen services were available for utilization of the common public in terms of – commercial/non-food license, property related services, water connection services, birth and death, marriage registration, grievance, building permission, suggestions for improvements for city and BMC under miscellaneous services. Citizen may register themselves for online services as most of the services available completely online.	No common heading like citizen services. Most of the services were available under separate heads of service. Number of online services less in compare to BMC. Online payment service available for few options like – property tax, water tax etc. Database not currently updated, birth and death records only prior to year 2015 were available. For current records one has to go Office of the Registrar General & Census Commissioner website, for which no information was available on municipal site.

d _{1.3}	Statistics	No statistical data was available.	Statistics under the headings birth, death, property tax, water- tax and rental property was displayed.
e _{1.1}	Information Updation	No information regarding updation is visible on the portal.	No information regarding updation is visible on the portal.
e _{1.2}	Search Option	No search option for the internal content, while search option available for corporation telephone list.	No search option available for the internal content.
e _{1.3}	Language	Portal provides the facility of language selection between Hindi and English. Most of the information was available in dual version.	Though portal provides the facility of language selection but portal content is available in a mix of English and Hindi languages and hence some of the options/information is not shown due to compatibility problem, if particular Hindi font is not available on the system.
e _{1.4}	Zooming	No such facility was available.	No zooming or option for increment/decrement of font size was available.
e _{1.5}	Feedback	Standard feedback as well as complaint facility was available under “Citizen Services” option.	No standard feedback and grievance facility was available.

(ii) External Metrics

We now one by one explain the components of the external

metrics and compare the two web portals on each component.

Table 2: Comparison of Two City Portals for Attributes/Criteria under External Metrics

S.No.	Criteria	Bhopal Portal (BMC)	Indore Portal (IMC)
f _{1.1}	Online Services	Number of fully online services provided directly or indirectly (links) are more in comparison to IMC. Example – property related services, water related services, birth & death, marriage registration, grievance, suggestions for improvement, building plan permission etc.	No service was fully online. Citizen only pays tax online for property and water services.
f _{1.2}	Offline Services	Number of services apart from those available on IMC are: helpline numbers, officers directory, information about corporation departments, informative maps, tourist information, weather information, FAQ etc.	Not only the less number of services in compare to BMC, but the detailing of information is low for the available service. Statistics for Rental property details were available; this is not available on BMC page.
g _{1.1}	Multi language Option	Customized Bilingual facility. No need of downloading language software.	Customized Bilingual facility but mix mode of presenting information. Need to install Language software to view the information.

g _{1,2}	Physically Disabled	Lacking on this kind of facility.	Also lacking on this kind of facility.
h _{1,1}	Language	Language alternatives are provided.	Bilingual presentation sometimes acts as a barrier and need technical familiarity for activity like installation of software etc.
h _{1,2}	External Links/Tabs	A range of important external links are given on home page – twitter, facebook, samagra id, building permission, my bus city transportation etc.	External link to a separate web page of Smart City and Building Permission site was available.
h _{1,3}	Tourism	Information available for various tourist places of the city.	No such information is available on the portal.
h _{1,4}	Samagra Id	Link available.	No such information or connectivity available on portal.
h _{1,5}	Model of building plan 32sqm to 300sqm	Sample of approved drawings were available.	No such information was available.
h _{1,6}	City transportation	A separate link for city transportation is available.	No such link available.

Trustworthiness

Updated information also acts as enabler of trust and as mentioned in e1.1, BMC has better updations as compare to IMC.

Feedback

BMC portal had facility of online addressing of any grievance and direct feedback from citizens. Citizen can even track the status of his/her grievance online. Help line number was displayed on the home page itself. IMC portal not only lacks online grievance redressal mechanism but only postal address was displayed under “Contact Us” option.

Conclusion

Although Bhopal is the state capital, Indore has many feathers in its cap like being purported as the industrial capital, major educational hub, technology city etc. and is a bigger city in terms of size and revenue generation. However, when we compare the online presence of the two cities in terms of their web portals, it is seen that in terms of both internal as well as external metrics, city municipal portal of Bhopal is better than the Indore portal. A comprehensive comparative summary is presented in table 3.

Table 3 Comparative analyses of web portals of two city municipal portals

S.No.	Attribute	Bhopal Portal	Indore Portal
Internal Metrics			
1	Content Level 1.	Content level is rich and better. Exhaustive list of emergency as well as public utility contact numbers.	Content level is poor and not displayed properly.
2	Infrastructure	A wide range of citizen services fully online and offline are offered.	Online payment facility for few of the services, but mostly services available was not complete. A detailed statistics on various heads are displayed.
3	Traffic Analysis	No Visitor count. More number of active external links.	No visitor count. Only few active external links.
4	Broken Links	Few broken links.	No broken links.

5	Performance	No information of last date of updation. Within web site information search facility in some options. Bilingual language selection facility. No zooming facility. Online feedback and Grievance mechanism present.	No information of last date of updation. Even data was not completely online for few of the services. No search facility. Bilingual language selection option. (Partial) No zooming facility. Lacking feedback and Grievance mechanism.
External Metrics			
6	Service Delivery	More number of online/offline services. Citizen services mostly online.	Only a few online/offline services. Only forms available for download.
7	Accessibility	Multilanguage facility was available. Lacking facility for physically disabled.	Multilanguage facility was available. Mixed mode of information presentation. Lacks facility for physically disabled.
8	Usability	Detailed information about tourist places of city was available. Contains more public utility information.	Lacking the details about tourist places of city and nearby places. Less public utility information.
9	Trust-worthiness	Updated and online information builds public trust.	Need more efforts to attract citizens.
10	Feedback	Proper mechanism for feedback as well as for grievance redressal.	No proper mechanism.

Suggestions

Indore city Municipal Corporation has ample scope of improvement on the following points –

- Design of the web portal should be enhanced by systematic, logical and segmented presentation of the information under various groups and subgroups.
- More public utility information should be added to the portal like emergency contact, officer's directory, utility directory etc.
- Public interest in accessing the web portal may be enhanced if the portal is equipped with features like – search option, visitors count, latest and updated information, downloadable forms, less number of broken links and very important - language selection- especially in this Hindi speaking belt.
- Inclusion of the information about the city profile, city map, various tourist places of city or nearby areas along with the city transportation facility will surely attract more visitors towards the city thereby improving state revenue through improved tourism.
- There is neither a proper feedback mechanism nor an online grievance redressal system. Improvement in the portal may be brought about by addressing resolution of

queries and grievance redressal. This may ultimately lead to a positive feedback by a satisfied citizen and ultimately result into more frequent visit to e-portal for services and contribute in making the portal of city municipal corporations of Indore a success.

References

- Accenture (2004) "The Government Executive Series- eGovernment Leadership: High Performance, Maximum Value", Retrieved 14 July, 2015 from http://www.accenture.com/Global/Research_and_Insights/By_Industry/Government/HighValue.htm
- Barnes, S. J. & Vidgen, R., (2003). Interactive E-Government: Evaluating the Web Site of the UK Inland Revenue. *Journal of Electronic Commerce in Organisations*, 2, 42-63.
- Belanger, F., Hiller, J. S. and Smith, W. J. (2002). Trustworthiness in electronic commerce: the role of privacy, security, and site attributes. *Journal of Strategic Information Systems*, 11 (2002) 245–270.
- Chander, S. & Kush, A. (2012). e-Governance Web Portals Assessment of Two States. *International Journal of Advanced Research in Computer Science and Software Engineering*, 2(2).

- Davis, F.D. (1989). Perceived Usefulness, Perceived Ease of Use and User Acceptance of Information Technology. *MIS Quarterly*, 13(3), 318-339.
- Delitheou, V. & Maraki, M. (2010). Research into Citizens' Attitude Towards Electronic Municipal Services (e-Local Government). *Journal of Public Administration and Policy Research*, 2(3), 39-45. Retrieved from <http://www.academicjournals.org/jpapr>.
- Esteves, J. (2005). Análisis del desarrollo del gobierno electrónico municipal en España'. Working Paper. IE Business School.
- Flak, L. S., Olsen, D. H & Wolcott, P. (2005). Local e-Government in Norway, Current Status and Emerging Issues. *Scandinavian Journal of Information Systems*, 17(2), 41-84. Retrieved from <http://www.cs.aau.dk/SJIS/journal/volumes/>.
- <http://www.bhopalmunicipal.com> (accessed on 12 July, 2015)
- <http://www.imcindore.org> (accessed on 12 July, 2015)
- Katara, J., Banerjee, S., Malu, S. and Gupta, R. (2016 a). A comparative study of e-governance portals of two districts of Madhya Pradesh. Proceedings of the 6th PIMG International Conference on Creative and Innovative Excellence for World in Motion, 10-12 January, 2015, Gwalior, India, Vol.2, pp 305-317, ISBN :978-93-85000-49-2
- Katara, J., Malu, S. and Banerjee, S. (2016 b). An assessment of municipal e-governance service quality using esteves index. *Pacific Business Review International*, 1(3), August (2016), 39-47. ISSN: 0974-438X.
- Liang, T. and Lai, H. (2002). Effect of store design on consumer purchases: An empirical study of on-line bookstores. *Information & Management*, 39, 431-444.
- Moon, M. J., and Norris, D. F. (2005). Does managerial orientation matter? The adoption of reinventing government and E-government at the municipal level. *Information Systems Journal*, 15(1), 43-60.
- Parasuraman, A., Zeithaml, V. A., & Berry, L. L. (1988). SERVQUAL: A multiple item scale for measuring consumer perceptions of service quality. *Journal of Retailing*, 64(1), 12-40.
- R. Sandoval-Almazán & Colin, J. M. (2011). Gobierno Electrónico en México: Una Exploración Municipal 2010, 17th Americas Conference on Information Systems, Detroit, 4-8 August 2011, 447.
- Tiwari, A. & Khare, A. (2014). An MMP initiative of e-Governance for Urban Local Bodies in Uttar Pradesh Delivering Online Services to the Urban Citizens, 24 (3), Retrieved from <http://www.iimahd.ernet.in/egov/ifip/nov2014/tiwari.htm>
- Wirtz, W. B. & Nitzsche, P. (2013). Local level E-government in international comparison. *Journal of Public Administration and Governance*, 3(3), 64-93.
- Zeithaml, V.A., Parasuraman, A. & Malhorta, A. (2002). Service quality delivery through web sites: A critical review of extant knowledge. *Journal of the Academy of Marketing Science*, 30(4), 362-375.