Chapter VII

Conclusions and Suggestions

In the present study we have done the Parametric Evaluation of Selected Web Portals from the State of Maharashtra, from Three Basic Categories viz. G2C, G2B and G2E. The study findings and conclusions are sorted according to the research aspects and elaborated in following section.

7.1 General Conclusions:

In our research study we have evaluated and analyzed all the selected 113 e-Governance web portals. In the course of this process, the following outcomes and conclusions are worth mentioning.

- With the initiatives taken by Department of Information Technology, Government of India, through the implementation of nationwide National e-Governance Plan NeGP plan, Indian e-Governance systems have taken a leap.
- The scenario is almost similar in the State of Maharashtra, as almost all the Government Departments, Sections; Ministries have started their dedicated web portal.
- The developed countries have started implementing e-Governance projects in respective countries in late 20th century. By this time they are well ahead of the developing countries and their models are quite stable and successful.
- The flagship and prestigious NeGP of India is designed very strategically and as per the need of India, ‘Largest Democracy in the World’, and is much better than the other developing countries. Some of the Mission Mode Projects implemented in India like Bhoomi, Janseva Kendram, Lokmitra, Gyandoot, Setu, has already made a mark on UN and World Bank rankings.
- The concept of Citizen Relationship management (CzRM) is not considered while designing and implementing the e-Governance Web Portals.
- Citizen Participation in Decision Making and Opinion Polls for every domain specific transactions is not observed in any of the web portals. But it is observed
that the top ranked nations listed by UN has shown priority to provide online facility for Citizen Participation in Decision Making and Opinion Polls.

- Online Chat Rooms and Discussion Forums are not observed in e-Governance web portals of Maharashtra.
- Domain Specific Citizen Database is neither designed nor created by the web portal. This is a primary suggestive parameter mentioned by World Bank as well as NeGP.
- It is observed that most of the web portals have a link for Feedback. But Feedback Monitoring and Tracking System is not found in any of the Web Portal.

### 7.2 Conclusions-Respondents Data:

For our study we have designed a questionnaire and collected the views of respondents from various educational and professional backgrounds from the state of Maharashtra. Some of the major conclusions are:

- 81% of the respondents have used at up to 10 e-Governance websites while there is only one respondent who have used more than 20 e-Governance web portals. Majority of respondents are having BE/MCA educational background and working in the profession of Software Development, Government employment.
- There are only 1/8th of respondents who have participated in Design, Development or Implementation of e-Governance team.
- There are no Government departments/ministries which has their own full-fledged software/ web development centers or divisions; which is an essential and mandatory part for the success of e-Governance.
- Out of total 200 respondents, 83% of the respondents agreed that Panchayat Raj can become reality with the implementation of e-Governance.
- About 43% of the respondents do not agreed that the e-Governance portals in Maharashtra are Citizen Centric. 22.5% of the respondents are neutral, probably indicating the unawareness about the exactness of the citizen centricity or the high expectations from the e-Governance portals.
- 58% of the respondents agreed that e-Governance portals are Intelligent and Dynamic Systems, while 18% of the respondents do not agree. This indicates that
the respondents perceived the e-Governance portal; which they have used; as dynamic and they are able to carry out transactions through these portals.

- 47.5% of the respondents agreed that e-Governance web portals are secured.
- It is observed that, the web portals those have properly implemented ‘e-SAFE (e-Governance Security Assessment Framework) as suggested by NeGP are found secured.
- Because of the ‘virtual’ characteristic of internet and especially of e-Governance web portals, citizen feels that putting things online will impose transparency in the government functionalities. The perception of 3/5 of the respondents clearly indicates that e-Governance portals are transparent in delivery of services to stakeholders. This supports the premise of e-Governance transparency.
- More than 90% respondents agreed that the e-Governance is a Tool for Efficient Governance and about 3/5th of the respondents agreed that the e-Governance web portals are User Friendly.
- Nearly 3/4th of the respondents do not agree that e-Governance is really reached every Nook and Corner of the State of Maharashtra. This brings to the light an important fact that, penetration of e-Governance is restricted to urban areas only.

7.3 Conclusions From Hypothesis:
In our research we have set following hypotheses for study. The results obtained from Chi Square test for each hypothesis are described below:

- **Hypothesis 1**: e-Governance Web Portals in Maharashtra are Citizen Centric or not? As per the results obtained the Null Hypothesis is rejected indicates that e-Governance Web Portals in Maharashtra are not Citizen Centric.
- **Hypothesis 2**: e-Governance Web Portals in Maharashtra are Intelligent and Dynamic System or not? An outcome of Chi Square test implies that, e-Governance Web Portals in Maharashtra are Intelligent and Dynamic System.
- **Hypothesis 3**: e-Governance Web Portals in Maharashtra are Fully Functional or not? As per the test we found that, e-Governance Web Portals in Maharashtra are not Fully Functional.
• **Hypothesis 4**: e-Governance Web Portals in Maharashtra are Secured or not? Our analysis and the test results tell that, e-Governance Web Portals in Maharashtra are secured.

• **Hypothesis 5**: e-Governance Web Portals in Maharashtra provide Transparent Quality Services or not? With the application of Chi Square test on respondents’ data, it is observed that, e-Governance Web Portals in Maharashtra provide Transparent Quality Services to all their stakeholders.

• **Hypothesis 6**: e-Governance Web Portals in Maharashtra are User friendly or not? The analysis shows that portals are user friendly. The Hypothesis is accepted.

• **Hypothesis 7**: e-Governance Web Portals in Maharashtra have reached every nook and corner or not? The Hypothesis is rejected to conclude that, e-Governance Web Portals in Maharashtra have not reached every nook and corner.

• **Hypothesis 8**: e-Governance Web Portals in Maharashtra are Efficient Governance and have Decision Support System or not? As per the analysis of respondent’s data it is observed that 90% have endorsed that e-Governance Web Portals in Maharashtra are Efficient Governance and have Decision Support System.

### 7.4 Conclusions from Parameters Taken for Evaluation:

- Most of the e-Governance web portals from the state of Maharashtra have included the factors which we have taken for evaluation. There are 125 sub parameters which are grouped in 10 major parameters. The parameters extracted and grouped under Functional Content and Citizen Relationship Management are crucial for achieving the Citizen Centricity.

- Design and Web Development Tools parameters have recorded considerably well as compared to other parameters.

- Almost all the web portals have scored well in Basic Static Information parameter indicating the fulfillment of first stage of e-Governance models, i.e. to display the information on web portals.
7.5 Conclusions from G2C Category web portals:

Out of 80 e-Governance Web Portals taken for Evaluation from the State of Maharashtra, under G2C category we found following major outcomes.

- In G2C category, for Basic Static Information parameter, 50% of the web portals are found good at posting Basic Static Information on their sites, and among them 10% of the web portals have scored more than 90%.

- For Functional Content parameter, only 4% of the web portals have scored more than 90% and majority score less than 60% which indicates that crucial information like Schemes, Services, Feedback Monitoring System, Opinion Pools, Online Applications etc are either not available on the portal or not performing as per the expectations of the citizens.

- In case of Design parameter, mean value is 6.7875 out of 9 i.e. more than 75% score is attained by most of the web portals; About 5/6th of the web portals have scored more than 90% points.

- About 1/3rd of the web portals are good at providing Citizen Relation Management aspects through respective web portals.

- For Quality of Services parameter the performance of G2C e-Governance web portal is considered as average. About half of the web portals are ok at providing quality services to all the stakeholders and users of that portal.

- Out of 80 G2C e-Governance web portals taken for evaluation, for Security Measures Parameter 44% of the e-Governance web portals have incorporated security measures.

- For Web Development Tools parameter, evaluation shows a higher performance by majority portals.

- For e-Readiness i.e. availability of ICT infrastructure parameter has performed below average. 70% of the e-Governance web portals do not have integrated aspects of ICT and equal percentage of the web portals in G2C category are low performer in Economic and Social Aspects while 89% of the web portals in G2C category are low performer in Governance Support System parameter.
The web portal of Pimpri Chinchwad Municipal Corporation (www.pcmcindia.gov.in) has attained maximum score. Out of 125 parameters taken the portal has scored 88.91%.

For ‘Citizen Relationship Management’ Parameter. The web portal of ‘Maharashtra Road Transportation Company (MSRTC)’ has performed comparatively well in providing Citizen Relationship aspects.

From the data analysis and interpretation it is observed that, the web portal of Pimpri Chinchwad Municipal Corporation (www.pcmcindia.gov.in) has scored maximum points 97.22% for the Functional Content Parameter. 33 web portals out of 80 are scoring less than 40% in the core parameter of Functional Content parameter.

The average score of this category for all 80 web portals is 69.55%, which indicates that around 70% compliance is achieved by 21 e-Governance web portals, out of 80, for Functional Content Parameter, under G2C category.

There are only 12.5% web portals out of 80, are scoring above average, which indicates that, majority of the web portals failed to provide functional services like Schemes, Support Systems, Feedback, Tenders, Circulars, Notifications etc. to the stakeholders.

The web portal of Charity Commissioner of Maharashtra (http://mahacharity.gov.in) is the lowest scorer in this category with 5.55% compliance i.e. only 1 point out of 18.

For CzRM parameter, out of 80 G2C e-Governance web portals, 35 are in the interval 5-9. It is observed that 66.25% of the web portals are scoring in between 0 to 9. The average score is 7.65 out of 15, comparatively a low score. Around 65% of the web portals are performing below average for this parameter.

The web portal of Maharashtra Road Transportation Company (www.msrtc.gov.in) has scored maximum points 93.33% for the Citizen Relationship Management Parameter. Other e-Governance web portals ranked 2 to 5 are Department of Registration and Stamp, SETU Sangali, Babasaheb Ambedkar Research and training Institute (BARTI), Directorate of Employment and Self Employment.
The overall performance taken for all 10 major parameters and the performance in current CzRM parameter of Maharashtra Road Transportation Company are same. All the top ten performers in CzRM parameter are scoring more than 90%.

7.6 Conclusions from G2B Category web portals:
Out of 19 e-Governance Web Portals taken for Evaluation from the State of Maharashtra, under G2B category our conclusions are:

- In G2B category, for Basic Static Information parameter, half of the web portals are good at posting Basic Static Information on their sites. About 1/6th of the web portals have scored more than 90%.
- In Basic Static Information Parameter, City Industrial and Development Corporation have scored maximum points.
- In case of Functional Content parameter, only 11% of the web portals have scored more than 90%. Most of the web portals failed to provide important information like Schemes, Services, Feedback Monitoring System, Opinion Pools, Online Applications, Tenders, etc are not available on e-Governance web portals.
- In case of Functional Content Parameter the web portal of ‘Bank of Maharashtra’ has performed well, but 5 G2B e-Governance web portals out of 19 have scored very poorly i.e. less than 14%.
- For Design parameter, the performance of 19 e-Governance web portals taken for evaluation have performed more than 95%.
- In G2B category, for Citizen Relationship Management parameter, the performance of all 19 e-Governance web portals taken for evaluation shows their performance below average. About 1/3rd of the web portals are found good at maintaining Citizen Relationship through their sites.
- Maharashtra Industrial Development Corporation (MIDC) portal have scored maximum points for Citizen Relationship Management Parameter.
- In case of Quality of Services parameter, the performance of majority of e-Governance web portals taken for evaluation fell below average. 16 out of 19 portals have scored less than 6 points out of total 12 points.
• For Quality of Services Parameter the web portal of ‘Directorate of Employment and Self Employment’ have performed comparatively well in providing Quality of Services.

• For Web Development Tools parameter under G2B category, out of 19, 11 web portals are scoring below average while 8 are scoring above average.

• In case of Security Measures Parameter the web portals of Tender Information have scored 89% score with top rank and the web portal of Small Scale Industries Development has performed lowest.

• In G2B category, for e-Readiness parameter, the performance of 19 e-Governance web portals taken for evaluation shows unsatisfactory performance. All of the web portals are scoring less than 4 points (less than 50%).

• In case of Economic and Social Aspects parameter all 19 G2B e-Governance web portals are scoring less than 4 out of 8.

• In G2B category, for Governance Support System parameter, the performance of all the 19 e-Governance web portals are scoring less than 50%.

• Web portal of Bank of Maharashtra has scored highest with 506.43 points out of 650 and topped the table.

• In G2B e-Governance web portals for ‘e-Readiness’ Parameter, it is found that, all the web portals are scoring less than 15%.

• For Economic and Social Aspects Parameter all the portals are scoring less than 7% .

7.7 Conclusions from G2E Category web portals:
Out of 14 e-Governance Web Portals taken for Evaluation from the State of Maharashtra, under G2E category we found that:

• For Basic Static Information there are highest 10 G2E e-Governance web portals out of 14 in the interval 0-10.

• For Basic Static Information parameter, Yashwantrao Chavan Academy recorded highest compliance which is 83.33% and the web portals of Maharashtra Coastal Zone Management Authority have performed lowest.
• In case Functional Content parameter about 1/5\textsuperscript{th} of the web portals scored between 0-5. Exactly half of the portals scored in between 6-10. There are 4 portals out of 14 which could score in between 11-15.

• The frequency distribution for Design Parameter is Maximum for class interval 6-8 and minimum suggesting better designing of these portals.

• For CzRM parameter under G2E, half of the portals scored in between 0-4, out of total 14 parameters only 1 portal scored in between the class 10-13 and in case of Quality of Services all web portals are scoring in between 4-9.

• For Web Development Tools parameter almost ¾ of the web portals have scored more than 60%.

• In case of Citizen Relationship Management and Economic and Social Aspects parameters under G2E category, the Budget Estimation, Allocation and Monitoring (BEAMS) recorded highest percentage.

• For e-Readiness Parameter the web portals of Principal Controller of Communication and Accounts, Department of Accounts and Treasuries scored top marks.

7.8 Final Ranks of the e-Governance Web Portals:
We have evaluated e-Governance web portal from the State of Maharashtra for 125 Parameters. As per the marks scored for all these parameters the rankings are as follows:

7.8.1 Under G2C Category top five e-Governance portals are:
   i. Pimpri Chinchwad Municipal corporation
   ii. Directorate of Technical Education Maharashtra
   iii. Maharashtra Online
   iv. Maharashtra Remote Sensing Application
   v. Centre Tata Memorial Centre

7.8.2 Under G2B Category top five e-Governance portals are:
   i. Bank of Maharashtra
   ii. Maharashtra Industrial Development Corporation
   iii. Tender Information
   iv. City and Industrial Development Corporation
v. Directorate of Employment and Self Employment

**7.8.3 Under G2E Category top five e-Governance portals are:**

i. Budget Estimation, Allocation & Monitoring

ii. General Administration

iii. Department of Accounts and Treasuries

iv. Principal Controller of Communication Accounts

v. Raj Bhavan Governor of Maharashtra.

**7.9 Suggestions:**

During our research we found some lacunas in strategy, design, development and implementation of e-Governance web portals. With all our data collection analysis and interpretation, we are in a position to put forward following suggestions.

- In order to reap e-Government benefits, policy makers should conduct regular evaluation to pinpoint weaknesses and provide appropriate solutions, which is not observed.

- It is suggested to provide Citizen Relationship Management Module in web portals.

- With the design of web portals the departments should provide infrastructural facilities to citizens, and businesses like KIOSKS, Call Centers and Governance Cafés (G-Café).

- Citizen Charter should not be informative but should be interactive.

- The web portals developed by National Informatics Centre have used same template, design and even links. Most of the information is similar for many departments and portals. It is suggested for customization of these portals as per the need and functionality of the departments.

- Maharashtra Government should move from e-Governance to m-Governance.

**7.10 Suggestive e-Governance Model:**

While designing the parameters for evaluation of e-Governance portals and formulating the evaluation matrix, we found there are some very important features and functionalities missing from the existing e-Governance portals. Hence propose an e-
Governance model which will overcome these lacunas and missing functionality aspects. The suggestive model is based on the following:

- Study of existing e-Governance models; in India and abroad,
- Guidelines given in National e-Governance Plan (NeGP),
- Parameters taken for evaluation of e-Governance web portals,
- Evaluation Matrix formulated for data analysis,

The proposed e-Governance model is explained in following section by considering the aspects of stakeholders, Indian Citizen’s perspectives, the technology and e-Readiness.

### 7.10.1 Six Stage Model:

In our research work we are suggesting a six stage model. These stages are briefly explained below. These phases can be incorporated with the Software Development Life Cycle (SDLC) to achieve the desired portal functionalities.

**i. Display Basic Static Information:** The information and data which is static in nature and does not need periodic updations shall be displayed on the web portals. This includes display of information like: National Emblem, Ownership and Lineage Information, Name of State, Departments and Sections, Acts and Rules, Copyright, Terms & Conditions and Privacy Policy, Profile of Department, Mission Vision Statement, Organization Structure, News and Press Releases, Contact Information, FAQs, Online Support and Help Manuals, Feedback, Site Map etc.

**ii. Interactions for Functional Content:**

This is the most important and crucial phase of any e-Governance web portal. In this phase Citizens, Businesses, Employees and other Government Organizations should be able to interact for their entire and required services; online, secured, user friendly, quick, costless and in a 24 X 7 environment. The points to be considered under this stage are: e-Schemes, e-Services, Downloads, Application

iii. Transactions of Services:
Once a service is chosen by a stakeholder; he/she should be able to do all the necessary transactions online and with the utmost security. A citizen should get all kind of online support and acknowledgments for the transactions of e-Services. The basic necessity of online process is physical existence and appearance of virtual transactions. This will consolidate the faith of citizens in online Transactions systems. The Citizen Charter plays an important role in this phase. Online Analytical Processing (OLTP) and Online Transaction Processing (OLAP) along with Payment Gateways, SMS, email alerts etc. are accurate and helpful tools for this stage.

iv. Citizen Participation:
Internationally it is accepted that; merely providing information and transactions of Government Services to Citizens is not the ultimate goal of the Good Governance. Actually it is the Citizen participation in the decision making at all levels of Governance, is the primary requirement of this phase. Parameters like opinion polls, feedback, online voting, polling and surveys, political participation, citizen involvements, etc. through web portals can be embedded in this phase of e-Governance model.

v. Citizen Relationship Management:
Citizen Relationship Management (CzRM) is an emerging concept at all levels of Government to respond quickly, succinctly and accurately to citizen requests. For this stage, creation and maintenance of Domain Specific Citizen Database is mandatory requirement. This stage includes CzRM Policy, User Registration and
Password Policy, Last Login Details, User Friendliness, Reduced Number of Trips, Reduced Cost to Citizens, SMS, Email, Phone Alerts, Regional Language Support, Response Time, Citizen Charter, Public Awareness etc.

vi. Pocket Apps:
Last and futuristic phase of our suggested e-Governance model is m-Governance. It is expected to create core infrastructure and standard APIs to enable service delivery over mobiles and creation of custom/niche mobile solutions. It shall be the endeavor of the Government to promote m-Governance including creation of standards and infrastructure for m-Governance, development of SMS and Mobile Service Delivery Gateways and Mobile applications. Mobile messaging can be used to give alerts and disseminate / collect information. With the increase in number of mobile users across the nation and the steep growth in the mobile technology; it has become easier to create secured mobile applications; which is equally true for Government services also.

7.10.2 Users:
There are four distinct users of any e-Governance web portal of any model G2C, G2B or G2E. The e-Governance web system should be able to provide login facilities and the requisite authorities to use the portal in a secured manner. These users are:

i. Visitors
ii. Citizens
iii. Business/Organizations
iv. Employees

7.10.3 Home Page of proposed e-Governance Model:
On the basis of above proposed model we have tried to design a web portal which will facilitate as a prototype. The home page and the important links of the proposed prototype are as shown below.
Home page of the proposed prototype is look like as above thumbnails. The home pages have the Name of Department, State, National Emblem etc. The portal have main links like e-services and e-schemes.

e-Services dropdown menu shows various services that Department offers to the Citizens. Similarly the web portal has links like Organizational Structure, Vision and Mission Statement. The important links of all the Functional Content are grouped on right side menu.