SPECIAL SECTION

E-Government Organizational Performance Framework: Case Study of Haryana State in India - A Log Linear Regression Analysis

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ABSTRACT

The objective of this research study is to design an e-government organizational performance framework and to assess ICTS solutions through a case study of Haryana state government in India so as to enhance efficiency and effectiveness of services provided to citizens. The framework is suggested using responses collected from 150 government departments. The ICTS solutions were validated by data collected from 90 e-government experts. A log linear regression analysis is used to develop the framework. The framework with minor modifications can be developed for similar other e-government settings.

Keywords: customer service; electronic government; empirical research; information and communications technologies; IS research frameworks; organizational productivity; research techniques

INTRODUCTION

In this society where change is the basic requirement for development, investments in capital and fixed assets alone no longer guarantee the success for an organization. The key to get success is through optimal utilization and effective management of available resources using Information and Communication Technologies (ICTs). Along with public awareness and Internet usage, the demand for real-time transactions along with simplified, standardized ways to access government services has been increased. Citizens are aware of the advantages ICTs provide, and, therefore, expect these from governments as well. Hence, governments all over the world are recognizing e-government as a strategic option to fine-tune their internal and external operations.

According to an estimate, on an average, only 15% of e-government projects are successful all over the world. The important concern for Indian government is that most of the e-government projects in state governments are focused on imitating the success models and ignoring the adaptability to a particular region (Singh, 2005).

There is an immediate need to suggest an e-government framework for a particular
region to improve service effectiveness. The e-government organizational performance framework is suggested for the government departments of Haryana state in India. As per E-Readiness Assessment Report for States/Union Territories, the state has emerged as one of the aspiring e-government states in India (DIT & NCAER, n.d.).

The research paper is structured as follows. First, the literature review to develop the framework is presented. Using the literature review, the research methodology adopted, the hypothesis tested and the framework developed is set forth. Finally, recommendations and conclusions of the study are presented.

LITERATURE REVIEW

E-Government Initiatives:
Government of Haryana, India

Haryana is one of the pioneering states in India. It has an area of 44,212 Sq Kms. For administrative purposes the state is divided into four divisions - Ambala, Rohtak, Gurgaon, and Hisar. The state government has 20 districts, 47 sub-divisions, 67 tehsils, 45 sub-tehsils, and 116 blocks. (http://en.wikipedia.org/wiki/Haryana). More than 70% of its population is dependent on agriculture for its livelihood. People speak several similar sounding dialects of Hindi.

The state government departments are playing a key role for the overall development of Haryana. The major Haryana government Departments include Agriculture Department, Employment Department, Excise and Taxation Department, Finance Department, Fisheries Department, Food and Supplies Department, Health Department, Home Guards and Civil Defense Department, Information Technology Department, Irrigation Department, Police Department, Public Health Department, Public Works Department, Rural Development Department, Sports and Youth Welfare Department, Technical Education Department, Transport and Civil Aviation Department, and Women and Child Development Department.

The mission of Haryana for proliferation of e-government is to achieve efficiency, transparency, and accountability by providing Information and Communication Technologies (ICTs) enabled access and opportunities for all, anytime, and anywhere. The Secretariat of Information Technology (SIT), Haryana State Electronic Development Corporation (HARTRON) (http://www.hartron.org/), and National Informatics Centre (NIC) (http://home.nic.in/) are playing a vital role in implementing various e-government projects in the state.

The government has framed policies, guidelines, and standards to facilitate e-government in the state government departments. Some of the prominent policies include - IT Policy, Web Sites Policy, E-Mail Communication Policy, Right of Way (ROW) Policy, and Job Work policy etc. (http://haryanait.nic.in/). The government has also conceptualized guidelines for systematic approvals of e-government projects in the State.

The government, in collaboration with NIC, HARTRON, and SIT has implemented various e-government projects for Haryana government departments. Some of the major projects include House Tax Assessment and Collection Information System (HACIS), Online Treasuries Information System (OTIS), Haryana Registration Information System (HARIS), Haryana Land Records Information System (HALRIS), Food Network (Food.NET), Labour Courts Cases Justice Delivery and Tracking System, Automated Employment Exchange System, and Haryana government Employee Portal, etc. (http://haryanait.nic.in/).

Haryana government has established e-government citizen service centers in 8 out of 20 districts of Haryana (http://haryana.gov.in/e-disha.htm) under the preview of New Agent of Information - district Level Integrated e-government Service of Haryana for All (NAIDISHA). The objectives of these centers are to provide hassle-free access to government services at the doorstep, improved quality of service, transparent, efficient and effective delivery, reliable real-time services, effective dissemination under single roof, reduced delivery and opportunity costs, elimination of 'touts' and exploitation, citizen friendly environ-
ment, and quick redressal of citizen grievances. These service centers have been established as front-end interface of Haryana government departments to provide e-government services to its citizens.

The back-end for these e-government citizen service centres is the services received from government departments. To provide effective citizen-centric services, there is a need to monitor the performance of the back-end (departments). Keeping in view the need to strengthen the organizational performance of these departments and to suggest ICTs solutions, the research study was undertaken.

E-Government Organizational Performance Attributes

The attributes of organizational performance varies all over the world depending upon various geographical, demographical, and cultural dimensions. Since, the study deals with organizational performance of a state government in India, it is pertinent to study the organizational performance attributes of the Indian government.

Understanding why organizations fail can be a good start to formulate e-government organizational performance attributes. Government’s problems are rooted in bureaucratic structures designed in the past simply do not function well in the rapidly changing, information-rich, knowledge intensive society and economy. There is a need to have a paradigm shift to ensure continued service in a world of budget reductions, increasing diversity and social challenges.

Ramadoss & Palanisamy (n.d.) while analyzing e-government issues in developing countries including India, stated that the pressure is mounting on the governments to reduce operating cost; service delivery mechanisms are undergoing fundamental changes and moving toward citizen-centric governments. Lack of vision and cultural issues are hindering the progress. There is a need to reengineer the government structures. This calls for a fundamental change to the government model.

According to Vittal (n.d.), the biggest challenge, which government faces in India, is the mindset of the public servants. This mindset needs to be changed radically. Sharma & Palvia (2004) identified various issues for implementing e-government in India. Some of the major issues identified include resistance to change, negative attitude towards the history of government technology adoption, non-citizen and business centric view of the government, and communication approach to offer government services which has been same with only difference that few files are available in electronic format.

According to Saxena & Wadhwa (2004), lack of infrastructure, political determination, leadership, skepticism, awareness, inadequate funding, budgetary resources, and economic climate for accepting and realizing the e-government are major issues of adaptation of Information and Communication Technologies (ICTs). A research study conducted by NASSCOM & Netscribes (2002) in ten states of India has also brought forward various e-government issues. Some of the major issues highlighted by the study include lack of reengineering efforts and seamless integration of various government departments. There is a question mark on sustainability of existing e-government projects, Intellectual Property Right (IPR) issues, low Personal Computer (PC) penetration in the government and state, and financial constraints.

The major attributes of organizational performance summarized include organization culture, and structures, regulatory environment, ICTs infrastructure, human resource management, reengineering, transparency, and citizen centric services.

Based on these attributes, a questionnaire for Haryana government departments was developed to assess the organizational performance of Haryana government departments (Annexure-1).
RESEARCH HYPOTHESES
AND PROPOSED MODEL
The government departments in Haryana are involved in providing back-end support to front-end e-government citizen service centers. The practice that measures organizational performance is termed as performance determinant. The organizational performance serves as the criterion variable that contributes to overall performance of the organization. The dependent variable on the other hand is the organizational performance of Haryana government departments. The performance of Haryana government departments has been measured using attributes as listed in the questionnaire (Annexure-1). A factor analysis was performed to identify major dimensions of organizational performance (Table 2). The performance dimensions identified using factor analysis includes transparency, organization culture, ICTs infrastructure, regulatory environment, and citizen centricity.

For testing the existing organizational performance of Haryana government departments, the following null hypothesis is proposed:

H1: Organizational performance of Haryana government departments is satisfactory - organization culture

H2: Organizational performance of Haryana government departments is satisfactory - regulatory environment

H3: Organizational performance of Haryana government departments is satisfactory - ICTs infrastructure

H4: Organizational performance of Haryana government departments is satisfactory - Transparency

H5: Organizational performance of Haryana government departments is satisfactory - citizen centricity

The following null hypothesis was suggested to design the framework:

H6: Organizational performance of Haryana government departments -> is not related to organization culture

H7: Organizational performance of Haryana government departments -> is not related to regulatory environment

H8: Organizational performance of Haryana government departments -> is not related to ICTs infrastructure

H9: Organizational performance of Haryana government departments -> is not related to transparency

H10: Organizational performance of Haryana government departments -> is not related to citizen centricity

Information and Communication Technologies (ICTs) are playing a significant role in enhancing the performance of organizations all over the world. Various items related to information technology were identified using secondary literature review as listed in the questionnaire (Annexure-2). Factor analysis was conducted to identify the dimension structure for these items. The attributes of ICTs identified include (1) Process improvement, GUI, video conferencing and e-CRM; (2) Process reengineering, change management & ICTs infrastructure; (3) HRIS, RTI, Intranet, & E-Mail; (4) e-CRM, intranet & video conferencing; and (5) Electricity Generator & UPS.

To suggest ICTs solutions, the following null hypothesis are proposed:

H11: ICTs solutions suggested for e-government organizational performance framework are significantly differing from expert opinions - Process improvement, GUI, video conferencing & e-CRM
**H12:** ICTs solutions suggested for e-government organizational performance framework are significantly differing from expert opinions -> Process reengineering, change management & ICTs infrastructure

**H13:** ICTs solutions suggested for e-government organizational performance framework are significantly differing from expert opinions -> HRIS, RTI, Intranet, & E-Mail

**H14:** ICTs solutions suggested for e-government organizational performance framework are significantly differing from expert opinions -> e-CRM, Intranet & video conferencing

**H15:** ICTs solutions suggested for e-government organizational performance framework are significantly differing from expert opinions -> Electricity Generator & UPS

To design the ICTs solutions framework, the following null hypotheses are proposed:

**H16:** ICTs solutions -> are not related to Process improvement, GUI, video conferencing & e-CRM

**H17:** ICTs solutions -> are not related to Process reengineering, change management & ICTs infrastructure

**H18:** ICTs solutions -> are not related to HRIS, RTI, Intranet, & E-Mail

**H19:** ICTs solutions -> are not related to e-CRM, Intranet & video conferencing

**H20:** ICTs solutions -> are not related to Electricity Generator & UPS

**RESEARCH METHODOLOGY**

The research objectives of the study include—(1) to suggest e-government organizational performance framework for Haryana government departments involved in providing back-end support to front-end citizen service centers, (2) to suggest ICTs solutions framework for the organizational performance dimensions to enhance efficiency and effectiveness of e-government services provided to citizens.

Two questionnaires were designed, first was for officers of Haryana government departments, and second for e-government experts. Haryana government departments involved in providing back-end support to citizen service

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*Figure 1: E-government organization performance framework*

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Figure 2. E-government organization performance framework: A conceptual diagram

E-Government Organizational Performance Framework

Transparency
- Corruption free environment
- Consistent promotion & reward system

Organization Culture
- Quality control mechanism
- Training
- Sound organization structure
- Involvement of stakeholders
- Alignment with changing environment

ICTs Infrastructure
- Adequacy & reliability
- Uninterrupted power supply
- ICTs for inter-department communication

Regulatory Environment
- Updated rules & regulations
- Autonomy
- Commercial & social targets

Figure 3. ICTs solutions framework

Process improvement, GUI, video conferencing and e-CRM

Process reengineering, change management and ICTs infrastructure

HRIS, RTI, Intranet, and E-Mail

e-CRM, Intranet and Video Conferencing

Electricity Generator and UPS

Path supported

R²=0.706 ITCs Solutions Framework

H16
H17
H18
H19
H20

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centers called ‘government departments’ for the purpose of the study and academicians, consultants, and industry specialists, involved in practicing e-government were called ‘e-government Experts’ for the purpose of the study.

At the time of conducting the survey eight (8) e-government citizen service centers were operational out of 20 districts in Haryana. These districts were Panipat, Gurgaon, Karnal, Kaithal, Ambala, Hisar, Jind, and Panchkula. Based on geographic and demographic attributes, five (5) districts namely Panipat, Gurgaon, Karnal, Kaithal, and Ambala were selected for the study.

Various government departments are involved directly or indirectly providing back-end support to these service centers. Thirty (30) government departments were selected based on random sampling from those five (5) districts where these selected citizen service centers were operational. The sample size was 30 x 5 = 150. The respondents involved were above or equivalent to the rank of officers.

Several experts are involved in providing e-government solutions. The sample size to get experts was Ninety (90). The English draft of government department’s questionnaire was translated into Hindi language as most of the officers preferred local language in answering the questions. The questionnaire to get response from e-government experts was formulated in English language only. The responses for these questionnaires were obtained on a seven-point Likert scale, 1 being strongly disagree, and 7 strongly agree (1-Strongly Disagree, 2-Disagree, 3-Somewhat Disagree, 4-Neutral, 5-Some what Agree, 6-Agree, and 7-Strongly Agree).

The officers of Haryana government departments were reluctant to divulge information on organizational performance of their respective departments. So, specific attributes about their qualification, age, and other demographic information were not asked for in the questionnaire.

Statistical Analysis Processing
In order to analyze the data accrued from this research, t-test, factor analysis, and log linear regression analysis statistical techniques were used. The log linear regression analysis was used to design the model. Factor analysis is a statistical data reduction technique used to explain variability among observed random variables in terms of fewer unobserved random variables called factors. Log-linear regression is a kind of regression aimed at finding the best fit between the data and a log-linear model. The major assumption of log-linear regression is that a linear relationship exists between the log of the dependent variable and the independent variables.

The application software (SPSS 9.0) was used for data tabulation and analysis.
E-GOVERNMENT
ORGANIZATIONAL
PERFORMANCE FRAMEWORK

Factor Analysis
A factor analysis was conducted to identify factors (dimensions) of organizational performance using a sample size of 150. Factor analysis a set of 14 items from the questionnaire of government departments (Q.4—Q.17, Annexure-1) to test priori assumptions about the underlying factor structure. As a result, 5 factors were obtained. Keeping in view the nature of items, factors were logically grouped as transparency, organization culture, ICTs infrastructure, regulatory environment, and citizen centricity (Table 2).

Reliability of Instruments and Testing of Hypothesis
Before suggesting e-government organizational performance framework, it is pertinent to test existing organizational performance of Haryana government departments. Reliability of instruments and testing of hypothesis is given in Table 3.

The reliability of instruments (Reliability Alpha) for most of the dimensions is acceptable for this type of research ranging from .50 to .99. The t-values (*) as given in the Table shows significance of hypotheses (H1, H4) at 5% level. Hence, null hypothesis (H1, H4) was rejected. The hypothesis related to citizen centric services (H5) was accepted which shows that government departments are having sufficient monitoring and control mechanism to provide citizen centric services. However, acceptance of hypothesis at test value (5) does not mean that it does not require ICTs solution to enhance its efficiency. The mean value (4.79) for citizen centric services is still below 5 (Some What Agree), which is not adequate for exclusion for further analysis.

Framework Summary
A log linear regression analysis was used to design the organizational performance framework based on five attributes. Table 4 summarizes the framework.

The F value is significant at 1% level at (5/144) degree of freedom. The R square value (.636) indicates the overall contribution of organizational performance (63.6%) which is significant to design the framework.

Relationship of Individual Factors to the Overall Organizational Performance
Table 5 illustrates the relationship among various factors to the overall organizational performance. ‘Critical Ratio’ was calculated for each relation along with the findings. Most of the hypotheses were rejected, except H10 (citizen centricity). ‘Critical Ratio’ (t-values) calculated are greater than 1.96 and 2.32 which are known to be significant at 0.05 and 0.01 levels, respectively.

Hypothesis from H6-H9 are rejected at .01 and .05 level of significance. Hence, null hypothesis H10 was not found to be significant at .01 and .05 levels. Hence, relationship of citizen centricity to the overall organizational performance was not established in this case.

Factor Contributions
The contribution of each factor to the organizational performance is summarized in Table 6.

The overall organizational performance explained by external factors is 0.636 (63.6%). The transparency has gained highest contribution (0.312) to the performance of Haryana government departments, followed by organization culture (0.306), ICTs infrastructure (0.237), regulatory environment (0.168), and citizen centricity (0.028).

E-Government Organizational Performance Framework
E-government organizational performance framework is shown in Figure 5 along with path co-efficient; Figure 6 presents a conceptual diagram of this framework.
Table 2. Result of factor analysis

<table>
<thead>
<tr>
<th>Dimension(s) along with and items</th>
<th>Factor-1</th>
<th>Factor-2</th>
<th>Factor-3</th>
<th>Factor-4</th>
<th>Factor-5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Factor-1: Organization culture</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q.6 There exists a quality control mechanism to improve services of the department.</td>
<td>0.83</td>
<td>0.08</td>
<td>-0.07</td>
<td>0.00</td>
<td>0.12</td>
</tr>
<tr>
<td>Q.11 Department provides adequate training to its employees.</td>
<td>0.73</td>
<td>-0.03</td>
<td>0.25</td>
<td>0.30</td>
<td>-0.27</td>
</tr>
<tr>
<td>Q.4 There exists a sound organization structure to facilitate departmental activities.</td>
<td>0.72</td>
<td>0.49</td>
<td>0.20</td>
<td>0.06</td>
<td>0.03</td>
</tr>
<tr>
<td>Q.5 Department solicits suggestions from its stakeholders in formulating goals and objectives of the department.</td>
<td>0.67</td>
<td>0.19</td>
<td>-0.03</td>
<td>-0.17</td>
<td>0.52</td>
</tr>
<tr>
<td>Q.12 Employees are able to align themselves with the changing environment.</td>
<td>0.62</td>
<td>0.40</td>
<td>0.20</td>
<td>0.02</td>
<td>0.13</td>
</tr>
<tr>
<td>Factor-2: Regulatory environment</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q.10 Obsolete rules and regulations do not hinder the activities of the department.</td>
<td>0.05</td>
<td>0.86</td>
<td>0.10</td>
<td>0.19</td>
<td>0.01</td>
</tr>
<tr>
<td>Q.9 Department has given full autonomy to its employees to discharge duties.</td>
<td>0.19</td>
<td>0.66</td>
<td>0.09</td>
<td>0.21</td>
<td>0.49</td>
</tr>
<tr>
<td>Q.7 Department has set commercial &amp; social targets for its employees.</td>
<td>0.44</td>
<td>0.63</td>
<td>-0.06</td>
<td>-0.04</td>
<td>-0.06</td>
</tr>
<tr>
<td>Factor-3: ICTs infrastructure</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q.16 There exists a reliable Information and Communication Technologies (ICTs) Infrastructure in the department.</td>
<td>0.12</td>
<td>0.13</td>
<td>0.81</td>
<td>-0.23</td>
<td>0.09</td>
</tr>
<tr>
<td>Q.15 Uninterrupted power supply is available from the Electricity Department for consistent usage of PCs.</td>
<td>-0.08</td>
<td>-0.14</td>
<td>0.71</td>
<td>0.49</td>
<td>0.01</td>
</tr>
<tr>
<td>Q.14 ICT infrastructure is available to facilitate inter-departmental communication.</td>
<td>0.38</td>
<td>0.40</td>
<td>0.52</td>
<td>0.19</td>
<td>0.08</td>
</tr>
<tr>
<td>Factor-4: Transparency</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q.13 Department has set consistent promotion and reward system.</td>
<td>0.43</td>
<td>0.36</td>
<td>-0.12</td>
<td>0.57</td>
<td>0.07</td>
</tr>
<tr>
<td>Q.17 There exists a corruption free environment in the department.</td>
<td>-0.01</td>
<td>0.16</td>
<td>0.06</td>
<td>0.79</td>
<td>0.21</td>
</tr>
<tr>
<td>Factor-5: Citizen centricity</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q.8 There is a proper feedback to enhance services provided to citizens.</td>
<td>0.02</td>
<td>0.00</td>
<td>0.11</td>
<td>0.24</td>
<td>0.89</td>
</tr>
</tbody>
</table>

Note:

a. Extraction Method: Principal Component Analysis
b. Rotation Method: Varimax with Kaiser Normalization.
c. Rotation converged in 9 iterations.
Table 3. Instruments reliability and testing of hypothesis

<table>
<thead>
<tr>
<th>Null hypothesis</th>
<th>Reliability-Alpha</th>
<th>Mean</th>
<th>Sig. (2-tailed)</th>
<th>Mean Difference</th>
<th>95% Confidence Interval of the Difference</th>
<th>Decision</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organizational performance of Haryana government departments is satisfactory-&gt; organization culture</td>
<td>$H_1_0$</td>
<td>.83</td>
<td>-5.50*</td>
<td>4.50</td>
<td>0.00</td>
<td>-0.50</td>
</tr>
<tr>
<td>Organizational performance of Haryana government departments is satisfactory -&gt; regulatory environment</td>
<td>$H_2_0$</td>
<td>.70</td>
<td>-4.33*</td>
<td>4.59</td>
<td>0.00</td>
<td>-0.41</td>
</tr>
<tr>
<td>Organizational performance of Haryana government departments is satisfactory -&gt; ICTs infrastructure</td>
<td>$H_3_0$</td>
<td>.58</td>
<td>-9.81*</td>
<td>4.13</td>
<td>0.00</td>
<td>-0.87</td>
</tr>
<tr>
<td>Organizational performance of Haryana government departments is satisfactory -&gt; Transparency</td>
<td>$H_4_0$</td>
<td>.50</td>
<td>-9.38*</td>
<td>4.04</td>
<td>0.00</td>
<td>-0.96</td>
</tr>
<tr>
<td>Organizational performance of Haryana government departments is satisfactory-&gt; citizen centricity</td>
<td>$H_5_0$</td>
<td>.99</td>
<td>-1.69</td>
<td>4.79</td>
<td>0.09</td>
<td>-0.21</td>
</tr>
</tbody>
</table>

Note:  $df=149$, * Significant at 5% level

Table 4. Framework summary

<table>
<thead>
<tr>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
<th>Change Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td>.798</td>
<td>.636</td>
<td>.624</td>
<td>.1743</td>
<td>R Square Change</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>F Change</td>
</tr>
<tr>
<td>.636</td>
<td></td>
<td></td>
<td></td>
<td>50.359*</td>
</tr>
</tbody>
</table>

Note: Predictors variables / attributes :(Constant), organization culture, regulatory environment, ICTs infrastructure, transparency, and citizen centricity.

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Table 5. Testing of hypothesis (path coefficients)

<table>
<thead>
<tr>
<th>Null hypothesis</th>
<th>Un-standardized Coefficients</th>
<th>Critical Ratio (t)</th>
<th>Sig.</th>
<th>Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Constant)</td>
<td>#</td>
<td>0.026</td>
<td>0.103</td>
<td>0.249*</td>
</tr>
<tr>
<td>Organizational performance framework of Haryana government departments $\rightarrow$ is not related to organization culture</td>
<td>H6$_{0}$</td>
<td>0.306</td>
<td>0.064</td>
<td>4.750*</td>
</tr>
<tr>
<td>Organizational performance framework of Haryana government departments $\rightarrow$ is not related to regulatory environment</td>
<td>H7$_{0}$</td>
<td>0.168</td>
<td>0.070</td>
<td>2.405**</td>
</tr>
<tr>
<td>Organizational performance framework of Haryana government departments $\rightarrow$ is not related to ICTs infrastructure</td>
<td>H8$_{0}$</td>
<td>0.237</td>
<td>0.053</td>
<td>4.459*</td>
</tr>
<tr>
<td>Organizational performance framework of Haryana government departments $\rightarrow$ is not related to Transparency</td>
<td>H9$_{0}$</td>
<td>0.312</td>
<td>0.055</td>
<td>5.698*</td>
</tr>
<tr>
<td>Organizational performance framework of Haryana government departments $\rightarrow$ is not related to citizen centricity</td>
<td>H10$_{0}$</td>
<td>0.028</td>
<td>0.036</td>
<td>0.780</td>
</tr>
</tbody>
</table>

Note:  
Dependent Variable: Q18 (Overall performance), Questionnaire, Annexure-I  
* Significant at $p<0.01$ level  
** Significant at $p<0.05$ level

Table 6. Contribution of factors to the organizational performance

<table>
<thead>
<tr>
<th>Construct</th>
<th>No. of Items</th>
<th>B values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall contribution to organizational performance (R Square)</td>
<td>2</td>
<td>0.636</td>
</tr>
<tr>
<td>Transparency</td>
<td>5</td>
<td>0.312</td>
</tr>
<tr>
<td>Organization culture</td>
<td>3</td>
<td>0.306</td>
</tr>
<tr>
<td>ICTs infrastructure</td>
<td>3</td>
<td>0.237</td>
</tr>
<tr>
<td>Regulatory environment</td>
<td>3</td>
<td>0.168</td>
</tr>
<tr>
<td>Citizen centricity</td>
<td>1</td>
<td>0.028</td>
</tr>
</tbody>
</table>

Figure 5. E-government organization performance framework with path coefficients

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The study has suggested an empirically validated e-government organizational framework for Haryana government departments—organizational performance is totally explained 63.6% by the external attributes, which include transparency, organization culture, ICTs infrastructure, regulatory environment, and citizen centricity.

**ICTS SOLUTIONS FRAMEWORK**

Keeping in view the organizational performance dimensions as validated in the framework (Figure 6), another questionnaire was designed for e-government experts to get their opinions and to recommend ICTs solutions.

**Factor Analysis**

A factor analysis was conducted to identify dimensions (factors) using a sample size of Ninety (90). Factor analyzed a set of 16 items from the e-government experts’ questionnaire (Q5-Q20, Annexure-2). As a result, 5 factors were obtained. As per their logical conclusions, factors grouped were (1) process improvement, Graphical User Interfaces (GUIs), video conferencing and Electronic Customer Relationship Management (e-CRM); (2) process reengineering, change management & ICTs
infrastructure; (3) Human Resource Information Systems (HRIS), Right to Information Act (RTI), Internet, Intranet, and E-Mail; (4) Electronic Customer Relationship Management (e-CRM), Intranet & video conferencing; and (5) Electricity Generator & Uninterrupted Power Supply (UPS). Dimensions along with factor loadings are given in Table 7 (factors are placed in descending order of their factor loadings).

### Table 7. Result of factor analysis

<table>
<thead>
<tr>
<th>Factor (s)</th>
<th>Factor-1</th>
<th>Factor-2</th>
<th>Factor-3</th>
<th>Factor-4</th>
<th>Factor-5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Factor-1: Process improvement, GUI, video conferencing and e-CRM</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q.14 The response time to provide services can be improved using improved processes and integrating services.</td>
<td>0.93</td>
<td>0.05</td>
<td>0.12</td>
<td>-0.04</td>
<td>0.11</td>
</tr>
<tr>
<td>Q.9 Open communication, training &amp; extensive usage of Graphical User Interfaces (GUIs) can help to align employees according to dynamic changing global environment.</td>
<td>0.86</td>
<td>0.23</td>
<td>0.03</td>
<td>-0.04</td>
<td>0.27</td>
</tr>
<tr>
<td>Q.16 Video conferencing</td>
<td>0.83</td>
<td>-0.02</td>
<td>0.06</td>
<td>0.28</td>
<td>0.02</td>
</tr>
<tr>
<td>Q.19 Electronic Customer Relationship Management (e-CRM)</td>
<td>0.76</td>
<td>0.39</td>
<td>0.11</td>
<td>0.26</td>
<td>-0.12</td>
</tr>
<tr>
<td>Factor-2: Process reengineering, change management and ICTs infrastructure</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q.18 Process Reengineering</td>
<td>0.12</td>
<td>0.89</td>
<td>0.11</td>
<td>0.09</td>
<td>-0.05</td>
</tr>
<tr>
<td>Q.5 Adequate &amp; reliable Information and Communication Technologies (ICTs) infrastructure is required for meeting desired service levels.</td>
<td>0.17</td>
<td>0.87</td>
<td>0.06</td>
<td>0.06</td>
<td>0.11</td>
</tr>
<tr>
<td>Q.10 Process reengineering can minimize problem of bureaucracy and reduce problem of obsolete procedures and processes.</td>
<td>0.06</td>
<td>0.81</td>
<td>0.13</td>
<td>0.17</td>
<td>-0.16</td>
</tr>
<tr>
<td>Q.17 Change Management Processes</td>
<td>0.42</td>
<td>0.54</td>
<td>0.44</td>
<td>0.20</td>
<td>0.29</td>
</tr>
<tr>
<td>Factor-3: HRIS, RTI, Intranet, &amp; E-Mail</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q.12 Consistency &amp; continuous improvement in employee appraisal, promotion and reward system can be ensured using Human Resource Information Systems (HRIS)</td>
<td>-0.10</td>
<td>0.22</td>
<td>0.83</td>
<td>-0.04</td>
<td>0.23</td>
</tr>
<tr>
<td>Q.13 Right to Information Act (RTI) availability of updated information can help to bring transparency &amp; hence reducing corruption in government departments.</td>
<td>0.24</td>
<td>-0.09</td>
<td>0.71</td>
<td>-0.07</td>
<td>-0.04</td>
</tr>
<tr>
<td>Q.20 Human Resource Information Systems (HRIS)</td>
<td>0.10</td>
<td>0.41</td>
<td>0.64</td>
<td>0.30</td>
<td>-0.14</td>
</tr>
<tr>
<td>Q.8 Internet, Intranet &amp; E-Mail can enhance stakeholders' participation in e-government</td>
<td>-0.06</td>
<td>0.36</td>
<td>0.63</td>
<td>0.50</td>
<td>-0.06</td>
</tr>
</tbody>
</table>

*continued on following page*
Table 7. continued

| Factor-4: e-CRM, intranet & video conferencing |       |       |       |       |       |
| Q.11 Electronic Customer Relationship Management (e-CRM), audit, review & control mechanisms can ensure effective feedback. | -0.05 | 0.17 | 0.08 | 0.83 | 0.26 |
| Q.15 Integrating government services using Intranet | 0.38 | 0.23 | -0.16 | 0.71 | -0.13 |
| Q.7 Communication and coordination among government departments can be improved by using Intranet and video conferencing tools. | 0.29 | -0.07 | 0.53 | 0.66 | -0.02 |
| Factor-5: Electricity Generator & UPS |       |       |       |       |       |
| Q.6 Electricity generator, Uninterrupted Power Supply (UPS) can provide uninterrupted usage of PCs. | 0.20 | -0.09 | 0.04 | 0.10 | 0.92 |

Table 8. Reliability of instruments and testing of hypothesis

<table>
<thead>
<tr>
<th>Null Hypothesis</th>
<th>Instruments Reliability</th>
<th>#</th>
<th>Alpha</th>
<th>t value</th>
<th>Mean (2-tailed)</th>
<th>Mean Difference</th>
<th>95% Confidence Interval of the Difference</th>
<th>Decision</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICTs solutions suggested for e-government organizational framework are differing from expert opinions -&gt; Process improvement, GUIs, video conferencing &amp; e-CRM</td>
<td>H11</td>
<td>.90</td>
<td>3.21*</td>
<td>5.45</td>
<td>0.00</td>
<td>0.45</td>
<td>0.17</td>
<td>0.73</td>
</tr>
<tr>
<td>ICTs solutions suggested for e-government organizational framework are differing from expert opinions -&gt; Process reengineering, change management &amp; ICTs infrastructure</td>
<td>H12</td>
<td>.86</td>
<td>8.06*</td>
<td>5.87</td>
<td>0.00</td>
<td>0.87</td>
<td>0.65</td>
<td>1.08</td>
</tr>
<tr>
<td>ICTs solutions suggested for e-government organizational framework are differing from expert opinions -&gt; HRIS, RTI, Internet, Intranet, &amp; E-Mail</td>
<td>H13</td>
<td>.77</td>
<td>15.74*</td>
<td>6.17</td>
<td>0.00</td>
<td>1.17</td>
<td>1.02</td>
<td>1.31</td>
</tr>
<tr>
<td>ICTs solutions suggested for e-government organizational framework are differing from expert opinions -&gt; e-CRM, intranet &amp; video conferencing</td>
<td>H14</td>
<td>.63</td>
<td>8.49*</td>
<td>5.80</td>
<td>0.00</td>
<td>0.80</td>
<td>0.61</td>
<td>0.99</td>
</tr>
</tbody>
</table>

Note: df=89, * Significant at 5% level

continued on following page
Table 8. continued

| ICTs solutions suggested for e-government organizational framework are differing from expert opinions -> Electricity Generator & UPS | H15.9 | .97 | 1.23 | 5.23 | 0.22 | 0.23 | -0.14 | 0.61 | Accepted |

.63 to .97. Table shows significance of most of the hypothesis (H11.9-H14.9) at 5% level. The hypothesis related to electricity Generator & UPS was not found to be significant which shows that e-government experts do not agree on Electricity Generator and UPS as the permanent solution to solve the problem of consistent usage of PCs. Very high mean values (5.23-6.17) were observed for these hypothesis (H11.9-H14.9) which indicates e-government experts are agree with the suggested ICTs solutions.

Framework Summary
A log linear regression analysis was conducted to design the framework based on predictor’s variables. Table 9 given below summarizes the framework.

F value shows significant at 1% level at (5/84) degree of freedom. The R square value .706 (70.60%) indicates the overall contribution of ICTs solutions in this framework, which is very much accepted.

6.4. Relationship of individual dimensions (factors) to the overall ICTs Solutions Framework

Table 10 illustrates the relationships among the various factors studied to the ICTs solutions. ‘Critical Ratio’ (t-value) is calculated for each relation along with the findings.

The values of critical ratio (t) greater than 1.96 and 2.32 are known to be statistically significant at 0.05 and 0.01 levels, respectively. The critical ratios are consistently higher. All Hypothesis from H11.9-R15.9 is rejected at .01 and .05 level of significance. Hence the relationship of all the predictor variables with the overall ICTs solutions is established.

Factor Contributions
The contribution of each factor to the ICTs solutions is given in Table 11.

The overall contribution of ICTs solutions explained by external variables is 0.706(70.60%). Process improvement, GUIs, video conferencing and e-CRM has higher contribution (0.724) followed by process reengineering, change management and ICTs infrastructure (0.676); HRIS, RTI, Intranet, and E-Mail (0.216); and Electricity Generator and UPS (-0.137).

Table 9. Framework summary

<table>
<thead>
<tr>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
<th>Change Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.840</td>
<td>0.706</td>
<td>0.688</td>
<td>0.132</td>
<td>R Square Change</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>F Change</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>df1</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>df2</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Sig. F Change</td>
</tr>
</tbody>
</table>

Note: Predictors variables: (Constant), (1) process improvement, GUI, video conferencing & e-CRM; (2) process reengineering, change management & ICTs infrastructure; (3) HRIS, RTI, Intranet, & E-Mail; (4) e-CRM, Intranet & video conferencing; and (5) Electricity Generator & UPS.
Table 10. Testing of hypothesis (path coefficients)

<table>
<thead>
<tr>
<th>Null hypothesis</th>
<th>Un-standardized Coefficients</th>
<th>Critical Ratio (t)</th>
<th>Sig.</th>
<th>Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Constant)</td>
<td>#</td>
<td>-1.069</td>
<td>0.225</td>
<td>-4.758</td>
</tr>
<tr>
<td>ICTs solutions framework -&gt; is not related to Process improvement, GUI, video conferencing &amp; e-CRM</td>
<td>H16&lt;sub&gt;o&lt;/sub&gt;</td>
<td>-0.137</td>
<td>0.045</td>
<td>-3.022*</td>
</tr>
<tr>
<td>ICTs solutions framework -&gt; is not related to Process reengineering, change management &amp; ICTs infrastructure</td>
<td>H16&lt;sub&gt;o&lt;/sub&gt;</td>
<td>0.216</td>
<td>0.088</td>
<td>2.446**</td>
</tr>
<tr>
<td>ICTs solutions framework -&gt; is not related to HRIS, RTI, Internet, Intranet, &amp; E-Mail</td>
<td>H18&lt;sub&gt;o&lt;/sub&gt;</td>
<td>0.676</td>
<td>0.146</td>
<td>4.639*</td>
</tr>
<tr>
<td>ICTs solutions framework -&gt; is not related to e-CRM, Intranet &amp; video conferencing</td>
<td>H19&lt;sub&gt;o&lt;/sub&gt;</td>
<td>0.724</td>
<td>0.095</td>
<td>7.616*</td>
</tr>
<tr>
<td>ICTs solutions framework -&gt; is not related to Electricity Generator &amp; UPS</td>
<td>H20&lt;sub&gt;o&lt;/sub&gt;</td>
<td>0.112</td>
<td>0.034</td>
<td>3.319*</td>
</tr>
</tbody>
</table>

Note:  
Dependent Variable: Q21 (Overall ICTs solutions), (Questionnaire, Annexure-2)  
* Significant at p<0.01 level  
** Significant at p<0.05 level

Table 11. Factor contributions

<table>
<thead>
<tr>
<th>Construct</th>
<th>No. of Items</th>
<th>B values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall contribution to ICTs solution (R Square)</td>
<td>4</td>
<td>0.706</td>
</tr>
<tr>
<td>Process improvement, GUI, video conferencing &amp; e-CRM</td>
<td>4</td>
<td>0.724</td>
</tr>
<tr>
<td>Process reengineering, change management &amp; ICTs infrastructure</td>
<td>4</td>
<td>0.676</td>
</tr>
<tr>
<td>HRIS, RTI, Internet Intranet, &amp; E-Mail</td>
<td>4</td>
<td>0.216</td>
</tr>
<tr>
<td>e-CRM, Intranet &amp; video conferencing</td>
<td>3</td>
<td>0.112</td>
</tr>
<tr>
<td>Electricity Generator &amp; UPS</td>
<td>1</td>
<td>-0.137</td>
</tr>
</tbody>
</table>

ICTs Solutions Framework

A framework for ICTs solutions is shown in Figure 7 along with the path co-efficient and Figure 8 presents a conceptual diagram of this framework.

The ICTs solution framework empirically validates the ICTs solution suggested to improve the effectiveness of items proposed in e-government organizational performance framework.
CONCLUSION AND RECOMMENDATIONS

Government of Haryana after examining the need to fine-tune processes of its departments has taken various ICT initiatives. The major initiative of the state government has been the establishment of e-government citizen service centres in eight (8) out of twenty (20) districts. These citizen service centres have been established for providing various e-government services keeping in view the success achieved by other state governments.

Citizen Service Centre initiative has been found to be a one-sided view of the government without taking into consideration the views of citizens as well as studying the loopholes in the existing system. Currently, citizen service centres are functioning as front-end for citizens in terms of access to various e-government services. This front-end is getting help from the back-end (the Haryana government departments) to provide various services to citizens. Through focused interviews with selected officials of Haryana government departments and users of e-government services, it has been found that without strengthening the back-end; the e-government objectives through citizen service centres can not be achieved.

Hence, research study focused on identifying the organizational performance attributes; measuring their performance in Haryana government departments (back-end), and recommending ICTs solutions. A factor analysis was conducted on the items of organizational performance as identified through secondary literature. The major attributes of organizational performance identified include transparency, organizational culture, ICTs infrastructure, regulatory environment, and citizen centricity. Based on these five (5) attributes null hypothesis
were proposed (H1-H5) assuming that existing organizational performance of Haryana government departments is satisfactory? A t-test was performed on these attributes to test the hypothesis. The results (Table 3) rejected most of the null hypothesis except citizen centricity.

The following conclusions and recommendations have been made in this research study by designing an organizational performance framework (Figure 5 and 6) and ICTs solutions framework (Figure 7 and 8):

**Transparency**
Transparency has been figured out as a major catalyst for improving trust among citizens in accessing e-government services. The consistent promotion and reward system for departmental employees can help to bring transparency in the departmental functioning and hence enhancing morale of employees. There is a need to strengthen efforts to provide corruption free environment to improve fair access to e-government services by the citizens.

Right to Information Act, ready availability of updated information to the citizens can also help to bring transparency and hence reducing corruption in government departments. Bhatnagar, 2003 his in e-government case study has demonstrated the potential impact of transparency in reducing corruption in government departments. Also, Cho et al., 2005 established that transparency and accountability is the core of the management system. The citizens and the city officials tend to have favorable opinions on the impact of its corruption control and its effect on transparency.

**Organizational Culture**
Another prominent attribute, organizational culture needs immediate attention in terms of enhancing effectiveness by setting up quality control mechanisms in e-government services. Sound organizational structure is required to facilitate departmental activities. Training of government officials has been identified as very crucial component in enhancing the quality of services. The involvement of citizens in formulating goals and objectives of the departments can help the government to incorporate citizens’ views. There is an emergent need to align departmental employees to the fast changing environment.

Change management and process reengineering has found to be the major ICTs initiative to improve organizational culture, structure, quality, and provide necessary training to departmental employees. According to Gulledge, et al., 2002, public organizations by changing their organization structures can resolve the problem of obsolete procedures and processes. Hughes et al., 2006 in their research to investigate the role of business process redesign in creating citizen-centric e-government in Ireland has validated the importance of improving processes and successful deployment of e-government services.

Internet, Intranet, e-mail, and video conferencing can enhance stakeholders’ participation in government departments. Tan et al., 2003 proposed a model for understanding into how organization-stakeholder relationships can be efficiently managed to bring about an effective overhaul of business processes. According to Shackleton et al., 2006, for the local government sector, Internet offers significant potential for the delivery of government services.

Open communication, training and Graphical User Interfaces (GUIs) can improve organizational culture in government departments. Lonti et al., 2003 after analyzing the adoption of work design and employee involvement practices in Canadian government workplaces has found that there is a high incidence of both flexible work design and employee involvement practices along with training found in government departments.

**ICTs Infrastructure**
ICTs infrastructure needs improvement in terms of providing adequate power backup for the consistent usage of PCs. The inter-department communication needs improvement for better coordination among departments. E-government experts’ suggested that by proving adequate and reliable Information and Communication Technologies (ICTs) infrastructure
the government can meet desired service levels in e-government services.

**Regulatory Environment**  
The existing regulatory environment in Haryana government departments needs overhauling by updating existing rules and regulations. There is an emergent need to provide full autonomy to officers in discharging their duties. It has also been felt that by setting social and commercial targets for the departments, a competitive environment can be established to enhance e-government services.

Electronic Customer Relationship Management (e-CRM), audit, review and control mechanism can ensure effective feedback and control mechanism in providing e-government services. The feedback given by stakeholders can be used to provide autonomy to departments and hence setting commercial and social targets. King, 2006 in his research study has established that CRM-enabling call centers and the provision of routine transactions can help in understanding stakeholders better in terms of providing efficient regulatory environment in e-government services.

**CONTRIBUTIONS OF THE STUDY**  
The research study has suggested e-government organizational performance framework and ICTs solutions framework to enhance efficiency and effectiveness e-government services provided to citizens for the Government of Haryana. The structure of this framework can be used as a reference point to suggest similar other models for the government.

**REFERENCES**


ANNEXURE-1

Questionnaire: Haryana Government Departments

District: ______________________

The objective of this questionnaire is to know performance of your Department. The information provided by you will be kept confidential and will be used for academic purposes only.

I. Respondent’s Profile

1. Officer’s Name (Optional)
2. Designation
3. Department

II. Organizational Performance

Please give your ranking out of 7:

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Disagree</td>
<td>Disagree</td>
<td>Some What Disagree</td>
<td>Neutral</td>
<td>Some What Agree</td>
<td>Agree</td>
<td>Strongly Agree</td>
</tr>
</tbody>
</table>

4. There exists a sound organizational structure to facilitate Departmental activities.

5. Department solicit suggestions from stakeholders in formulating goals and objectives of the department.

6. There exists a quality control mechanism to improve services of the Department.

7. Department has set commercial & social target for its employees.

8. There is a proper feedback & control mechanism to monitor services provided to citizens.
9. Department has given full autonomy to its employees to discharge responsibilities.
   1 2 3 4 5 6 7
10. Obsolete rules and regulations do not hinder the activities of the Department.
    1 2 3 4 5 6 7
11. Department provides adequate training to its employees.
    1 2 3 4 5 6 7
12. Employees are able to align themselves with the changing global environment.
    1 2 3 4 5 6 7
13. Department has set consistent promotion and reward system.
    1 2 3 4 5 6 7
14. ICT infrastructure is available to facilitate inter-department communication.
    1 2 3 4 5 6 7
15. Uninterrupted power supply is available from the Electricity Department for consistent usage of
    PCs.
    1 2 3 4 5 6 7
16. There exists a reliable Information and Communication Technologies (ICT) Infrastructure in the
    Department.
    1 2 3 4 5 6 7
17. There exists a corruption free environment in the Department.
    1 2 3 4 5 6 7
18. I am satisfied with the performance of the Department.
    1 2 3 4 5 6 7

III. Suggestions

Thanks for your cooperation

ANNEXURE-2

Questionnaire: E-Government Experts

Location: _______________________

The objective of this questionnaire is to obtain your opinion for possible Information and Communication
Technologies (ICT) solutions to design an e-government framework for Haryana Government. The
information provided by you will be kept confidential and will be used for academic purposes only.
I. Respondent’s Profile

1. Expert’s Name
2. Specialization
3. Designation
4. Affiliation

II. Information & Communication Technologies Solutions

Please give your ranking out of 7:

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Strongly Disagree</td>
<td>Disagree</td>
<td>Some What Disagree</td>
<td>Neutral</td>
<td>Some What Agree</td>
<td>Agree</td>
<td>Strongly Agree</td>
</tr>
</tbody>
</table>

05. Adequate & reliable Information and Communication Technologies (ICT) infrastructure is required for meeting desired service levels.
   1 2 3 4 5 6 7

06. Electricity generator, Uninterrupted Power Supply (UPS) can provide uninterrupted usage of PCs.
   1 2 3 4 5 6 7

07. Communication and coordination among government departments can be improved using Intranet and video conferencing tools.
   1 2 3 4 5 6 7

08. Intranet & e-mail can enhance stakeholders’ participation in e-Government
   1 2 3 4 5 6 7

09. Open communication, training & extensive usage of Graphical User Interfaces (GUI) can help to align employees according to dynamic changing global environment.
   1 2 3 4 5 6 7

10. Process reengineering can minimize problem of bureaucracy and reduce the problem of obsolete procedures and processes.
    1 2 3 4 5 6 7

11. Electronic Customer Relationship Management (e-CRM), audit, review & control mechanisms can ensure effective feedback.
    1 2 3 4 5 6 7

12. Consistency & continuous improvement in employee appraisal, promotion and reward system can be ensured using Human Resource Information Systems (HRIS)
    1 2 3 4 5 6 7

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13. Right to Information Act, ready availability of updated information can help to bring transparency & hence reducing corruption in government departments.

14. The response time to provide services can be improved using improved processes and integrating Government services.

Do you recommend e-Government integrated platform using following ICT tools?:

15. Integrating Government services using Intranet

16. Video Conferencing

17. Change Management Processes

18. Process Reengineering

19. Electronic Customer Relationship Management (e-CRM)


21. I am satisfied with the solution recommended as above to solve problems in providing e-Government services to citizens by the Government Departments

Thanks for your cooperation

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