<table>
<thead>
<tr>
<th>Section</th>
<th>Page No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.1 Introduction &amp; Literature Review on Student Services</td>
<td>107</td>
</tr>
<tr>
<td>Management using e-Governance</td>
<td></td>
</tr>
<tr>
<td>2.2 Summary and References</td>
<td>141</td>
</tr>
</tbody>
</table>
2.1 Introduction

To have a better insight in the area of e-Governance and e-Services in general and Student e-Services Management in universities and colleges in particular, the review of literature was initiated. A lot of treasure of literature is available, out of which selected significant materials have been incorporated in this chapter. The review of literature proved very helpful in developing theoretical base and preparing questionnaires for the research work.

Andrew Gilmore and Clare D’Souza, in their paper titled ‘Service excellence in e-governance issues: An Indian case study’ have identified efficiency attributes, user convenience attributes and citizen-centricity attributes to access service quality with respect to e-Governance.

The efficiency attributes include speed of delivery of service, compliance to committed service time frame, quality of service, simplicity of user action required for obtaining the service and reliability of the service. The user convenience attributes listed are ease of access to the service, user dependence of time (24 x 7) availability, single window access to several services, integrated services enabling access to several agencies through one request, mechanisms for problem resolution, how smoothly exceptions are handled, availability of alternative processes exist in case of serious problem and suitability of service locations to socially and economically backward areas. To access service quality with citizen-centricity attributes author suggests to access the extent to which user requirements are covered in service design, the use of local language in user interfaces, the extent to which attributes of citizen centricity are these new services being offered other than conventional services offered earlier, reduction of visits to higher level offices to complete the transaction and the extent to which the staff of the service provider at service delivery station familiar with the services packaged for different user groups.

Raposo, Mario, Leitao, Joao and Paco, Arminda, in their paper titled ‘E-Governance of Universities: A Proposal of Benchmarking Methodology’ have opined that the method of e-governance assume a special importance in terms of developing governance strategies that are oriented to the sustainability of public institutions and for university in particular
The one side makes the internal relations (G2G) more efficient and, on the other side, they contribute to the establishment of new kinds of external relations (G2B and G2C). The existence of this kind of platforms should be integrated in institutional information system in order to facilitate the adoption and the subsequent control of the best institutional practices, both at internal and external level. Also, these platforms should be enough to the proposal of benchmarking tools that are now presented and applied in the University. This helps university identify strengths and weaknesses at an internal level, and to face threats and opportunities at the external level, in order to improve the global quality of services and of the efficiency. It makes the improvement in the institutions for global performance, by following best practices.

**Staffan Lindell, Mikael Lind and Olov Forsgren** 3, in his paper ‘Students as e-Citizens - Deriving Future Needs of e-Services for Students’ states that, e-services for students are rapidly becoming more commonplace, but there exists a problem with the way that these e-Services are being developed. The e-services are made from the viewpoint of the organization and as such the accessibility for the student is hampered. A student has to remember several different sets of login requirements just to go about the daily life. The problem that is created by this organizational way of thinking is illustrated through the fact that students sometimes forego the e-service and uses a manual variant instead. It takes up a lot of time just to move between the different locations of the e-services and the multitude of logins creates a barrier which the student has to overcome in order to access the e-service they want.

**M P Gupta, Jaijit Bhattacharya and Ashok Agarwal** 4, in his book chapter ‘Evaluating e-Government’ concluded that, evaluation of e-government is necessary but approaches are not standard. Choice of an evaluation method would depend on what aspect of e-government we want to evaluate. There are three broad identifiable scenario of evaluation: e-Readiness of the context, performance of specific e-government projects overall impact of e-government on various developmental factors. Several approaches have been attempted by them and they recommend the choice to be dependent upon a particular situation.

**Mrinalini Shah** 5, in her paper ‘E-Governance in India: Dream or reality?’ while discussing the concerns for e-Governance in India listed issues of concern for rural
area as lack of infrastructure, less literacy and e-literacy, lack of awareness of the function, fear of bureaucracy, social and economic disparity. The issues she raised for urban area are concern for security and privacy and lack of time.

**R. D. Colle** in his paper ‘Building ICT4D capacity in and by African universities’ claims that, their research in south India and Africa focuses on public access telecenters and especially on issues related to public demand for their services and to their sustainability. According to author telecenters constitute an important force in efforts to build an information society. Researchers experience in India suggests that universities can be valuable actors in providing some of the resources telecenters need for their survival. This suggestion is vital because colleges and universities are enduring entities in most nations, and the social role of the university historically has been to create, store and diffuse knowledge, a collection of activities that partially parallels some telecenters operations. But still few major programs link universities to telecenter as an institutionalized source of information, knowledge and training - the basic commodities of a telecenter. University e-Readiness is a starting point suggested by researcher.

**Subrata Kumar Dey and M. Abdus Sobhan** in their paper ‘Conceptual Framework for introducing e–Governance in University Administration’ states that within a university context, applications of e–Governance include services for all stakeholders by means of exchanging information and/or transacting fund. These services differ according to the organizational vision and mission and ICT capacity of the university, and this diversity has given rise to the development of different e–Governance applications. The applications of e-Governance include University to Citizen (U2C) Applications, University to Business (U2B) Applications, University to University (U2U) Applications, University to Donors (U2D) Applications, University to Regulators (U2R) Applications and University to Employee (U2E) Applications.

The issues affecting the e–Governance implementation and its success are design and development, target group, infrastructure, culture and e–readiness.

The researcher suggests prerequisites for adopting e–Governance by a university. The researcher has suggested following prerequisites based on their investigations and best
practices - Senior ICT decision makers need to agree that low staffing levels should not be a deterrent in adopting available practices and each university needs to implement e–Governance practice based on its educational needs and available resources; improved communication between central and departmental ICT groups across university; communication between ICT personnel, top management and other stakeholders for gradual acceptance of ICT as a valued service provider rather than just a cost of doing business; improved planning and designing of Information Systems considering emerging technologies as a key issue; reduce challenges in measuring performance of e–Governance services, by following suggestions like multiple learning management and email systems causes duplication of efforts and consolidation of systems is required for reduce operational cost and the use of project management methodology, formal training is suggested for ICT stuff; the university should have well defined code of conducts and ethics for disseminating education, research and development, and administration; unlike businesses, universities cannot generate sufficient funds. Therefore, there must be well defined provision of budget for e–Governance. The funding may have to be subsidized and modifications to statutes, ordinances and acts of universities are necessary.

For e–Governance framework, researcher set criterion like competitiveness of the regional influence area; development of human resources; development of entrepreneurial activities; R&D activities including development, innovation and transfer of knowledge; good governance and sustainability of the university, etc. Benchmarking would help universities to identify their strengths and weaknesses at an internal level; face threats and opportunities at the external level.

The author concludes that for a university, web presence is the most powerful way to attract and serve larger segment of citizens. Incorporating more and more web-based services will increase peer competition among universities, which eventually lead them towards e–Governance. The paper highlights the importance and necessity of web-based services leading towards e–Governance of a university. Some of the critical issues for adopting e–Governance by a university are also discussed. Current representative statuses of e–Governance practice at a Bangladeshi university is observed and found to be at a low acceptance level. In this regard, an e–Governance framework for universities is suggested. Finally, benchmarking guidelines are
suggested for the proposed framework. Proper implementation of e–Governance results in: stakeholders becoming accountable; things happening at the right moment; optimum use of resources; and decision making is more effective.

**Wole Michael Olatokun and Opesade** §, in their paper ‘An e-readiness assessment of Nigeria’s Premier University (Part 1*)’ have done assessment based on many parameters including ICT policy awareness levels among staff and students, ICT regulation compliance, punitive measure and execution, ICT deployment in students based activities like learning, student admission , student registration , result checking , transcripts preparation , student accommodation and teacher based activities like teaching, research, staff administration , staff publicity to the global world, intra-campus communications, electronic publishing.

The pattern of internet access of staff and students is assessed by authors with the help of questionnaire internet access in the faculty, internet access in the department, internet access in office or classroom, availability of computer laboratory for internet access in the faculty, availability of computer laboratory for internet access in the department. The Mode of ICT Skill acquisition by respondents is also evaluated. The other IT skill of the respondents including Microsoft Office packages, desktop publishing ,computer repairs ,software development , software installations , hardware installations ,computer graphics and animation ,web page design, networking ,data analysis skills are also assessed. The Major challenges facing respondents use of ICT facilities are also assessed in field survey. The particulars considered under this category are Poor electric power supply, inadequate computer systems, poor ICT literacy, inadequate ICT personnel, status discrimination, inadequate ICT infrastructure and inadequate internet access. The availability of departmental computer room, local area network also assessed. Based on data, University of Ibadan E-Readiness calculated.

The major e-readiness indicators used by researcher for study are infrastructural availability, access to Infrastructure, manpower availability, Enabling policy and regulatory framework and ICT deployment.
Vijay Machiraju, Mohamed Dekhil, Martin Griss and Klaus Wurster\textsuperscript{9}, in their paper ‘E-services Management Requirements’ discuss the requirements for effective end-to-end and top-to-bottom management of e-services and introduce the notion of management access protocol, which provides a uniform mechanism to access management information and control hooks on the managed object. There are three important benefits that e-services bring to enterprises: more automation, more federation, and more dynamism. By allowing applications to seamlessly interact with other applications within and outside enterprise boundaries, e-services reduce the amount of human interaction needed to exchange or transfer information, thus enabling an extra degree of automation. On the management requirements author states that, a well-managed e-service exposes sufficient information, measurements, and control points for use by the management system. A good e-service management system uses this information effectively to monitor the state of the service, to analyze and diagnose problems that occur within the service, to control its behavior, and to expose some or all of the metrics and controls points for use by other services, management systems, and graphical interface tools.

E-Services management system helps in collecting information and measurements from all possible sources, aggregating these measurements and information into high level metrics, discovering any deviations of the monitored metrics from desirable levels, understanding or diagnosing the reasons for deviations, fixing the associated problems by controlling the managed service, and sometimes in predicting and proactively managing the service.

To facilitate these tasks, a management system could provide an interface for accepting low-level information and measurements from the managed e-service. In addition, it could also provide the following interfaces for other high-level management systems and graphical interface tools: an interface for exposing some or all of the collected measurements and computed metrics in the form of service state, an interface for accepting input for desirable states in the form of service levels, ranges, base-lines, or policies, and an interface for exposing high-level control points to control the managed e-service.
Vivek Sawant & Aatul Wadegaonkar, in their chapter on ‘Digital University Framework’ published by Computer Society of India SIG on e-Governance, points in the introduction section that, Digital University framework has been implemented in major regular universities across Maharashtra to provide ‘e Suvidha’ to student, colleges and universities at large.

In this way services have been reached to every associated district, city, Tahsils which come under the purview of University. In view of current state of educational e-governance wherein students has to fill number of forms, get in the queues for every concerned activity, have to frequently visit University for various applications and still they face many other hassles. Though some computerization initiatives are taken by Universities and colleges, it failed to provide various required services in an integrated manner. This has most of the times, has resulted into duplication of efforts, loss of productivity, more time consumption and increase in cost at various levels.

If we focus on University and colleges, it is obvious that a university is normally located at a district. Students and colleges have to continuously visit to university or college, though most of the students and college requirements can be fulfilled if we can provide them a common platform on which every entity can perform tasks according to their requirement. This shift still does not give a student leverage to get university services and other career related information. Same is the case with services to colleges and university. ‘eSuvidha’ is a paradigm shift in the working methodologies of colleges and university, and eventually to provide services to ultimate users, i.e. to Students. It allow student of rural districts and tahsils to avail same services and information as his/ her counterpart in a developed district. Lots of information, applications, and forms are now available to students on a single click, for which most of the times, they used to travel to universities or colleges. Colleges even are now getting facilitated by services under eSuvidha.

Universities in districts are now more technological and providing services to students and colleges at much faster pace. Being a very vast framework, it has also given opportunities to develop many other opportunities such as - availability of more computer centers, computer related jobs opportunities, awareness about other jobs, scholarships, competitive examinations and others.
The services to students are Informative Services on portal: About Courses, Colleges, Admissions, Scholarships, Government Schemes, Examinations, Results, Suggestion, Feed backs, News and Events and much more.

Student’s Login on University portal: Student’s Personalized Profile and services

Time Table, Hall ticket, Exam form and personalized e-content push through University Pre-printed Eligibility/Exam/Admission forms, 16 digits unique permanent Registration Number (PRN), personalized SMS/Emails to students. Application requests for Profile correction, re-evaluation, verification, duplicate statement of marks, profile update, change of subject, photocopy of answer-books. EASY (Employment Assistance Services to Youth) portal: This service offers Placement Assistance to students, Job listing and Notice Board, Job/Employer search for students, Employee search for employers, Student’s professional profile, News, Events and Job fairs, Tips and Tests on Interview assistance, Professional CV templates, Job Calendar, SMS/Email Alerts. Various Certificates such as: No Objection, Bona Fide, Character, Transfer, Passing Certificates, ID Cards.

The benefits claimed by authors include Services offered at the doorstep of students. Reduction in data duplication efforts at various levels, system generated outputs with no errors, personalized services to students, customized sms for faster service delivery, profile correction requests, personalized login to students for various applications, single click applications and forms generation of thousands of students studying in university. For example: Examination Form, Hall tickets etc. Reduction in student cycles to colleges and University to submit and receive various applications, Forms, Fees and many others. Direct student facilitation in terms of right information to students at right time through various modes of communication channels such as sms, information in student login, software generated notices in colleges etc. Students online requests for various services through web portal directly reaching to concerned authorities in University followed by subsequent redressal, reduction in work load of university staff and college staff, all previous academic years’ information, records availability in electronic form.
Paper less transaction achieved with in University departments, and across Universities and colleges, various reports generation required in various modules, strong student administration MIS at college level, seamless data transaction between college and university, no data duplication, single time student data entry at the time of admissions. Same data is used wherever required. Human efforts are minimized.

The author’s claims that with e-Suvidha will prove very efficient system and cost efficiency, time efficiency can be achieved. They also expect system to reduce load on college administration for student services management.

Jamal A Farooquie 11, in his paper ‘A Review of E-Government Readiness in India and the UAE’ argues that, reaping benefits from e-government implementation depends on the adequacy and quality of education, economy, and ICT infrastructure. E-government at the national level makes a governmental system interactive, cost-effective, quicker, and provides quality service. It is basically a system that deals with information and knowledge sharing among the stakeholders through information and communication technologies.

Dickson K.W. Chiu, Benny W. C. Kwok, Ray L. S. Wong, S.C. Cheung and Eleanna Kafeza 12, in their paper titled ‘Alert-driven E-Service Management’ have observed that, the wide-spread of Internet connectivity and Web Services gradually changes the way in accessing and use information. Organizations are shifting towards an interoperation paradigm in which quality and timely services are essential. Awareness, accessibility, and responsiveness are the key relationships among organizations in society. In this paper, we looked into the problem efficiently conveying alerts to the right service provider at the right time using Web Services and mobile devices, for Eservice provision under urgency constraints. We have proposed a framework of an alert management system that supports both human and E-service providers. This framework introduces a flexible alert conceptual model that allows users to specify tasks, alerts, roles, and their inter-relations. We have also presented our AMS architecture with an implementation outline with Web Services and described the alert monitoring and routing mechanisms involved.
Stefan Cronholm\textsuperscript{13}, in his paper ‘Communicative Criteria for Usability Evaluation - experiences from analyzing an e-service’ states that, today we are primarily using computers for communication. We communicate via computers as professionals and at our spare time. One growing context of computer use is when we as citizens communicating with authorities. This paper suggests communication criteria for evaluation of public e- services. The suggested criteria are derived from a communication perspective and applied in a case study for evaluation of an e-service. Communication between authorities and citizens are often communication intensive and consequently conditions and consequences of communication should be evaluated.

The aim of the suggested communication criteria is to be a complement to established traditional usability criteria.

Neeta Verma, Sangeeta Singh and Durga Prasad Misra\textsuperscript{14}, in their paper ‘Citizen Participation in the Process of ICT Enabled Governance: A Case Study’ have opinioned that, Governance encompasses not just government, but also the civil society, the systems, the procedures and processes in place for planning, management and decision-making. Fostering sound public judgment through informed and thoughtful debate is one of the key aspects of the Good Governance. The growing use of Information and Communication Technology (ICT) tools is resulting knowledge based societies and providing greater avenues to the informed masses to participate in the development process. Provision of 'Anytime-Anywhere Access’ to government information and services through Internet has been an important facilitator of Good Governance.

There is a lot to learn from the experiences of different countries in the world applying ICT in streamlining their process, connecting to all the stakeholders, cost optimization, improving the quality of service to the citizens and above all in making the vision of e-Governance a reality for leading the country on the path of “Good Governance”. On the other hand industries as diverse as healthcare, insurance, telecom and banking have all benefitted tremendously by adopting ICT. The purpose of any corporate body is to reduce cost and serve large number of customers and the same applies to governments also.
Ulrica Löfstedt\textsuperscript{15}, in his Doctoral Dissertation ‘e-Services for and by Citizens – Towards e-Participation and Social Systems Design for Development of Local Public e-Services’ states that, the e-Government field emerged in the late 1990s as a context within which different practitioners shared experiences and since then governments at all levels have launched e-Government projects in order to, among other things, provide electronic information and services to citizens, businesses, and other stakeholders. Today e-Government is an emergent research field and currently research is being conducted all over the world. From the beginning research focused on national government and governmental issues, but recently, the local government level and the citizen perspective have acquired more and more attention. Currently citizen inclusion and involvement is strongly accentuated in the development of e-Government, and e-Participation is a rather new research domain within e-Government and is seen as one key to success.

Aziz, F. Ahmet and Zübeyde Alkis\textsuperscript{16}, in their paper ‘E-government concept and e-government applications in Turkey’ concludes that, it was examined the opportunities offered by the developments in information and communication technologies for public services and the developments in information and communication technologies Turkey. Because Turkey has a large surface area and also large population, every type of investment, which is done by the government for its citizens, has high cost. Therefore, e-government applications should be offered in all areas whether they are social or commercial for working more efficiently with limited resources. The most important point is to avoid from repeated works. Therefore, a Higher Committee should be established to organize and manage all attempts executed under the scope of e-government by public and private organizations. This committee should prevent repeating attempts and also ensure that the projects planned or organized by the organizations are executed in a standard way. The systems to be developed should communicate with each other and can produce different data by using data of another.

John Carlo Bertot, Paul T. Jaeger and Charles R. McClure\textsuperscript{17}, in their paper titled ‘Citizen-centered E-Government Services: Benefits, Costs, and Research Needs’ have pointed out that, Government agencies do not as a rule engage citizens in the
development of their E-Government services and resources. Rather, many applications are internally driven to meet cost savings and other government mandates regarding efficiency. Government agencies do not systematically engage users in feedback on designed E-Government services and resources. In fact, though many agencies do have a “contact us” form of feedback, agencies do not have a formal process for handling suggestions for improvement. Government agencies do not systematically solicit service quality, outcome, or other evaluation data. Essentially, once a service is up and running, improvements come largely in the form of system updates and as responses to programmatic changes which force a change in an application. Users identified that the key barriers to E-Government for them included, a lack of an integrated approach across eGovernment, services and resources, which required them to essentially “start from square one” for each service and resource accessed. The inconsistency proved highly problematic for individuals who lacked computing skills, problematic design issues that often served as a barrier to accessing content and services, technology requirements that forced an approach to accessing services and resources, for example, some sites were only accessible with a certain browser, selected browser plugins, and technology configuration, language barriers that served to make some content inaccessible, requirements to accessing services and resources such as forms of payment, documentation, the necessity for an e-mail address, and other items.

Syb Groeneveld, Alexandra Haché and Stefano Kluzer, in their report as contribution to the "e-Inclusion: be part of it!" campaign of the European Commission states that, A number of names and abbreviations exist for the projects under research: PICs (Public Internet Centers), PIAPs (Public Internet Access Points), telecenters, Digital Playgrounds, Cybercafés etc. The interviews in this research show that these names no longer fully reflect the objectives and the activities carried out by the projects as they are no longer simple physical locations to access ICT. The missions of the projects are increasing in their complexity; apart from providing an access point to computers and the Internet, training programs are offered, community activities organized and new services introduced. The centers often function as a node to activate social capital in the neighborhood: they empower people at the local level to speak out and to team up with the help of ICT. This
increasingly complex and multidisciplinary approach has consequences for the way the centers work, are organized and offer services. For these reasons, this research intends to capture the variety of approaches through the concept 'PESCE': Public E-Service Centers in Europe.

**Dr. Sita Vanka, K. Sriram and Dr. Ashok Agarwal**, in their summary of panel discussion ‘Critical issues in e-Governance’ states that, the Government of India’s e-Governance projects should be based on Enterprise Architecture, which defines a set of business processes and Technology standards to be followed throughout the Government enterprise, providing services which are Citizen Centric, Open, Standards Based, Interoperable, Transparent, Flexible, Secure, Result Oriented and Dynamic. Enterprise Architecture addresses most of the architectural issues and leads to following benefits- improves business flexibility, and at the same time, business process and system optimization, it helps reduce process, system, and infrastructure costs and complexity, it helps ensure enterprise security and compliance, and it drives standardization, consistency, and scalability.

**Aykut Arslan**, in his paper ‘Cross cultural analysis of European E-Government adoption’ concludes that, cultural dimensions are simple but useful tool to measure the extremely complex concept of culture. The study shows that, culture does plays a significant role in e-Governance adoption for European countries. The sub-cultural values of European countries on e-Governance adoption are worth to consider.

**Dave Griffin and Eddie Halpin**, in their paper ‘An Exploratory Evaluation of UK Local e-Government from an Accountability Perspective’ states that, the findings of the initial phase of the study of the relationship between public accountability and electronic service delivery by UK local authorities. The councils consulted in this research consider local residents to be the principal stakeholder to whom they are accountable for e-government progress. We suggest that members of the public may not be equipped to scrutinize these activities. It is questionable as to whether they have the desire to scrutinize e-Government implementation specifically. It is unlikely that local residents will be interested in the same set of performance data as the Government and, as we have found in this study, there are complications associated with measuring e-Government progress.
In accountability theory, the present study clearly illustrates the lack of sanctions available to discretionary principals such as the public. This principal is limited, in the main, to utilising what one interviewee described as ‘embarrassment sanctions’. One of the participants in this study questioned whether delivering accountability on a wider scale would undermine the role of those who are elected. This issue has not been specifically addressed in this research, but it does indicate the political dimension of accountability. The relationship between the Council Executive (the steward) and the Scrutiny Committee (representing the local Principal) is a complex arrangement. For example, the principal both has power over the steward but, at the same time, as this study has shown, is dependent upon the steward for continued participation in the process.

R Chandrashekhar, Sanjay Dubey, Rajeev Chawla, Prakash Kumar, Nitin Kareer, Sanjay Verma, V Venkata Rao and Subhash Bhatnagar 22 in Colloquium on Impact Assessment of e-Governance Projects: A Benchmark for the Future has pointed out that, citizens indicated an overwhelming preference for computerized systems. Only in case of land records in Delhi and transport in case of West Bengal, an overwhelming majority preferred the manual system. In the case of passport, the reduction in number of trips and waiting time was marginal as only submission of application was partially computerized, leaving most of the back-end processes in their old inefficient form. Incidence of bribery was high for police verification (as much as 44%) and small (a little over 4%) in the case of passport office, but the impact in both the cases was not significant.

Governance opens up the door to a vast opportunity for transforming governance. It goes beyond the computerization of government processes and into the realms of good governance which include issues of efficiency of service delivery, empowerment of citizens, transparency, and accountability. Very rarely is an assessment made on an ongoing, constructive basis and looked at simply as a way of describing a glass that is neither completely full nor completely empty, just stating something that exists.

The key mantra of e-governance is ‘citizens first.’ It was therefore vital that the existing projects are assessed with a focus on the nature and quantum of impact on users. These assessments should be looked at more like a thermometer which tells you
the temperature; that is the fact of life. The participants from the government may say it is viral, typhoid, or something else. The major challenge is to provide a citizen-centric solution by offering hassle-free, easy-to-use, round-the-clock services to the consumers.

Ahmed Al-Omari and Hussein Al-Omari, in their paper, ‘E-Government Readiness Assessment Model’, study presents a general framework model for E-Government Readiness Assessment. There are six necessary key factors to implement any E-government initiative worldwide. These factors represent the basic components to be assessed before launching the "e-initiative" to guarantee the right implementation in the right direction. The organization building blocks need to be assessed are: Organizational Readiness, Governance and leadership Readiness, Customer Readiness, Competency Readiness, Technology Readiness and Legal Readiness. In the Organizational readiness, bureaucratic nature of E-Governments, business process, long process delay and need for reengineering will be discussed. In the Governance and Leadership Readiness, the importance of leadership and governance for the e-initiative, the importance of procedures, service level agreement, the way public officials perform, commitment and accountability for public jobs, all will be shown. In the Customer readiness, the main public concerns regarding accessibility, trust and security will be highlighted. In the Competency readiness, the lack of qualified personnel in the public sector and the different alternatives to overcome this issue will be discussed. In the Technology readiness, too many issues worth to be considered, such as hardware, software, communication, current technology, legacy systems, sharing applications and data and setting secure infrastructure to exchange services. The last factor is the Legal readiness where the adoption of the Jordanian Temporary law No 85 in the year 2001 “Electronic Transaction Law” ETL paved the road towards the big shift for e-initiative and privacy.

Tung X. Bui, Siva Sankaran and Ina M. Sebastian, in their paper ‘A framework for measuring national e-readiness’ have opinioned that one would normally expect that the higher the e-readiness score, the higher the ability of a country to compete in the new economy. What is actually more appropriate for an economy is to find e-readiness factors that would best align with its business strategies and national trade
priorities. According to author the most important contribution of the proposed methodology is to remind policy makers that e-business is part of a complex and general economic structure, and its success depends on that structure.

**Department of Information Technology (DIT) and National Council of Applied Economic Research (NCAER)** in their report on E-Readiness Index of the States in India 2005, have reported that, the framework used in the study is based upon the following premises: There are three important stakeholders to consider in the development and use of ICT: individuals, business and Governments. The degree of usage of ICT by (and hence the impact of ICT on) the three stakeholders is linked to their degrees of readiness (or capability) to use and benefit from ICT. There is a general macroeconomic and regulatory environment for ICT in which the stakeholders play out their respective roles. The index rated Delhi, Chandigarh, Kerala, Karnataka, Haryana, Tamilnadu as level 1 among states in India.

**Department of Information Technology (DIT) and National Council of Applied Economic Research (NCAER)**, in their report INDIA: e-Readiness Assessment Report 2008 for States and Union Territories rated Karnataka, Chandigarh, Maharashtra, Tamil Nadu, Delhi, Andhra Pradesh as leaders, West Bengal, Kerala, Haryana, Gujarat, Punjab as Aspiring Leaders. Andaman and Nicobar, Madhya Pradesh, Goa, Orissa, Assam, Himachal Pradesh, Uttar Pradesh, Bihar as Expectants, Chhattisgarh, Uttarakhand, Jharkhand, Sikkim, Rajasthan as Average Achievers, Tripura, Nagaland, Pondicherry, Meghalaya as Below Average Achievers and Manipur, Mizoram, Jammu and Kashmir, Arunachal Pradesh, Lakshadweep, Dadra and Nagar Haveli, Daman and Diu as Least Achievers.

**United Nations Global E-government Readiness Report 2005**, titled ‘From E-government to E-inclusion’, rated India 5th among South and Central Asia with 0.4001 index. The UN Global E-government Readiness rankings in 2005 place the countries of North America (0.8744) and Europe (0.6012) in the leadership position in the world in e-government readiness. In the rest of the world, South and Eastern Asia (0.4922); and South and Central America (0.4643) had the highest indices followed by Western Asia (0.4384); the Caribbean (0.4282); South and Central Asia (0.3448);
The United States of America (0.9062) is the world leader followed by Denmark (0.9058). Sweden (0.8983) has bypassed the United Kingdom (0.8777) to arrive at the 3rd global position. Among the developing countries the Republic of Korea (0.8727) leads with Singapore (0.8503), Estonia (0.7347), Malta (0.7012) and Chile (0.6963) close behind. The World e-government readiness is 0.4267 in 2005.

The Economist Intelligence and IBM\(^\text{28}\), report E-readiness rankings 2009, have identified that the 2009 e-readiness rankings reflect this complex environment. Digital development marches on, and millions more people across the globe continue to be connected to and use broadband Internet and other advanced communications technologies. But the Economist Intelligence Unit’s long established definition of e-readiness emphasizes that a country’s digital advancement is dependent on progress in other, interconnected areas, such as the business environment, education, support for innovation, legal frameworks, and government policy and vision. In part because of the wide-scale deterioration of countries’ business environments over the past 12 months, the e-readiness scores of all but nine of the 70 countries in the study have declined in 2009.

But scores also fell because this year’s rankings now cover ICT usage in addition to availability. The availability of technology is not enough to deliver the full socioeconomic benefit to countries that ICT can provide. For this, digital technologies must be used, and used effectively. Tracking actual ICT use is a tricky endeavor, but we have introduced several new indicators this year which compare countries on the extent to which their businesses and individuals use online channels. Since technology usage tends to lag availability, countries’ e-readiness scores have declined further.

This confluence of factors has also led to a shuffling of places in the rankings table. Denmark has reclaimed the world’s e-readiness leadership in 2009, a position it relinquished to the US last year. Other north European countries such as Sweden (2nd), the Netherlands (3rd) and Norway (4th)—having, among other attributes, high levels of ICT usage—have reaffirmed their places among the top ten e-readiness countries or, in the case of Norway, have advanced into this tier. Meanwhile, the US (5th) and UK (13th), whose business environments have been hit particularly hard in the past year, have fallen a few rungs. Scoring criteria categories and weights are
connectivity and technology infrastructure 20%, Business environment 15%, Social and cultural environment 15%, Legal environment 10%, Government policy and vision 15%, Consumer and business adoption 25%. The report ranks India 54th with index 4.17.

**GeoSINC International** in an e-Readiness Guide for Developing Countries have identified that, the basic e-Readiness framework can be divided into a number of focus areas: Access and Connectivity, Training, Education and Public Awareness, Public Administration and Government Leadership Business and Private Sector Initiatives, Society Development. The e-Readiness model is comprehensive, when apart from infrastructure and connectivity are used at the start of the e-Readiness process, it clearly gives an equal importance to other factors, not linked to technology.

**Mehdi Asgarkhani** in his paper ‘The Effectiveness of e-Service in Local Government: A Case Study’ have opinioned that, e-Technology has become a catalyst for enabling more effective government through better access to services and the democratic process. As public interest in the Internet and e-Technology solutions continues to grow, there is an increasing expectation that they will be utilised in national and local governments for not only more efficient governance but also improving public access to information and services. The author examines the value and the effectiveness of e-Services within the public sector with a focus on four specific facets of effectiveness: the view of management and ICT strategists; social, cultural and ethical implications; the implications of lack of access to ICT; and the customers and citizens view of the usefulness and success of e-Service initiatives.

**Martin Henkel and Erik Perjons and Jelena Zdravkovic** in their paper on ‘Towards Guidelines For The Evolution Of E-Service Environments’ argued that, different domains, such as the health care domain, can benefit from an increased use of e-services. However, factors such as vendor lock-in, the lack of standardized infrastructure and quality criteria can slow down the creation and use of e-services in a domain. To encourage the development of e-services there is both a need for simplicity to enable new actors to use and provide e-services, and a need for regulation, such as defined standards and quality levels. Author presents the concept of a service collaboration environment - a sustainable model for e-service evolution that facilitates the maintenance of the balance between simplicity and regulation.
Authors use the theory of competitive market forces to define a set of service collaboration environment guidelines that aims to enable increased use of e-services by stimulating new service consumers and providers to enter the environment.

Richard Hull, Michael Benedikt, Vassilis Christophides and Jianwen Su in their paper ‘E-Services : A Look Behind the Curtain’, it is argued that, their research has attempted to reveal some of the fundamental characteristics of the emerging paradigm of e-services and their composition, to identify how existing theoretical perspectives and results can be used to understand those characteristics, and to highlight directions for new research. The discussion of the paper can be summarized in three broad themes. First, under the assumption of bounded queues, composite e-services can be studied using tools from the verification community, including automata-based models, temporal logics, and synthesis algorithms. The e-services area raises generalized versions of those problems in the context where data manipulation is incorporated, as in the Relational Mealy Machines discussed here. Second, it is useful to study a model of composite e-services with unbounded queues. Under this assumption the behavior of e-compositions is quite different. We present some initial results in the unbounded queue case relevant to the domain of e-services, including a handful of characterizations of the global behavior of e-compositions, and some early progress towards understanding synthesis. And third, the use of XML in many aspects of e-services raises opportunities to apply techniques from the data management community in the context of specifying compositions of e-services. These range from revisiting the classical notions of types and subtypes for input/output signatures, to the application of XQuery and XML constraint tools to e-composition specification.

Lorena Batagan, Aadrian Pocovnicu and Sergiu Capisizu in their paper ‘E-Service Quality Management’ points out that, e-services are offering speed, efficiency, flexibility and innovation to their users. In most of the cases they are available 24/7 and accessible from any location. E-services are mostly paperless which therefore they have a lower environmental impact than traditional paper based public administration services. E-Service Quality Management Framework provides benchmarking capabilities and comparative assessment of e-services. It also supports making decisions in improving the quality of service and overall customer
satisfaction. The advances in mobile devices technology have increased the functionality of cell phones. This enabled development of new applications for mobile phones like: contacts management, email capabilities and Internet browsing. It also made possible the development of just-in-time services, or mobile services that literally offer anytime and anywhere access to services like: mobile banking, mobile learning, mobile commerce, etc. as long as the cell phone has a broadband internet connection enabled. This allows users to either update their skills or pay their bill while waiting in the airport for their flight, while waiting at the bus terminal for their bus or while commuting.

Harekrishna Misra 34, in his paper ‘Managing Rural Citizen Interfaces in e-Governance Systems: A Study in Indian Context’ states that, in business parlance, management of “user interfaces” is one of the most challenging tasks for the organizations using information and communication technologies (ICT). Despite prolific advances in ICT, maturity in development of innovative ICT enabled tools for business processes, challenges of managing user expectations are still many. Dimensions of such challenges are quite diverse in the e-governance parlance as well. In most of the countries today, government systems are gradually and effectively embracing ICT in various forms to provide simple, moral, accountable, responsive and transparent (SMART) governance for their citizens. These governments are also facing challenges similar to the enterprises because of the same unique reason i.e. “user interface”. Indian government systems are quite aggressively incorporating ICT enabled government processes to provide SMART governance in the country. National e-Governance Plan (NeGP) is formulated to provide the required support. NeGP recognizes “citizen interface” as an important link in the delivery system. Drawing experiences of “user interface” and its effect in successful implementations for enterprise wide ICT enabled processes and services; it is quite relevant that “citizens” are the most critical “users” in the e-governance systems. In Indian context, this carries enormous challenge to cater to the varied needs of rural citizens who are influenced by diverse socioeconomic conditions and digital divides. Thus there is a need to study this important “citizen interface” issue. In this paper, it is argued that in addition to SMART governance systems, a demand driven “citizen interface” would enhance the success of e-governance services in India. Since a large section of India
resides in rural areas, successful “citizen interface” is mostly contingent upon provisioning of demand driven services in these areas. Rural citizens in India reside in villages and their aggregated needs do not reflect adequately at the state and/or national level. However, various common services including e-governance services are rendered at the village level based on the policies framed at state/national level. Therefore, it is important that gross national estimates of demand on e-governance systems.

Vinod Kumar, Bhasker Mukerji, Irfan Butt and Ajax Persaud, in their paper titled 'Factors for Successful e-Government Adoption: a Conceptual Framework' opined that, user characteristics and website design directly influence e-Government adoption. User characteristics consist of perceived risks associated with using services such as financial and performance risk as well as data security and privacy. Also important are perceived control over the process, as consumer are unaware how their personal information is being used, and the extent of Internet experience, such as the length of time users have been exposed to the Internet, the frequency of usage, and the time spent on each visit. Website design variables, based on the technology acceptance model, are perceived usefulness and perceived ease of use. User perception as to the usefulness of the online information or services provided by the government could significantly increase the adoption rate. However, the perceived usefulness goes hand in hand with perceived ease of use, i.e., how easy it is for users to access, navigate, and consume the information. Service quality has a direct bearing on user satisfaction, which in turns influences the adoption of e-Government.

D. L. Scapin, in his paper “E-government HCI: a genuine research field? ” concluded that - E-Governance constitutes a genuine and specific HCI field as software application for e-governance concentrate design and evaluation constraints, from a user-centered perspective, both concerning user’s population and software application characteristics. The potential e-Governance users will eventually include all citizens. This will include the so-called “average user or novice user”, but will also span from a highly educated technical person to illiterate grandmothers in the countryside villages. This
is certainly not a characteristic shared by typical computer-based applications. The nature of e-governance interactions is rather simpler than others, which makes it similar in some way to the consumer products field, including the concept of walk-and use products.

**Andy Smith, Kaushik Ghosh and Aniruidha Joshi** 37, in their paper ‘Usability and HCI in India: cultural and technological determinants’ concludes that, authors believe that providing services to the developed part of world is only the .tip. of the proverbial iceberg of the potential that usability professionals and HCI designers have in India. The market of the western or westernized, urban, office going, predominantly English-speaking, predominantly male (the market of the first billion, as it is sometimes referred to) will saturate out eventually, and as India emerges out of its status of a .developing country,, the attractiveness of the business model described above will decrease. On the other hand, India itself represents a huge, un-served market of ICT products and services. We believe that such products and services will go a long way in solving the problems and improving efficiencies in the resource starved developing countries of the world. There are many huge challenges of bringing about change in conditions here, but so are the opportunities. The designers here will have every opportunity to exercise their skills. There will be no ready design specifications to follow, no specified user requirements to meet. There will be more freedom in the process. There will not be many legacy systems to take care of. The designers will have to bear the brunt of skeptics and pessimists. They will have to prove their concepts in the field several times and develop new techniques and processes to design. Every design idea will have to compete tooth and nail for limited resources, and only the best will survive. Those which do will define the future.

**France Be’lange and Lemuria Carter** 38, in their paper ‘Trust and risk in e-government adoption’ concludes that, as technology continues to become ingrained in society, citizens’ perceptions of the accuracy and reliability of e-services will increase in importance. If government agencies expect citizens to provide sensitive information and complete personal transactions online, they must acknowledge and enhance citizens’ views concerning the credibility of e-government services.

**Stefan Cronholm** 39, in their paper ‘Communicative Criteria for Usability Evaluation - experiences from analyzing an e-service’ have identified that, there are nine
suggested communication criteria. The criteria are: Actor clarity, Intention clarity, Satisfying communication needs, Clear action repertoire, Action transparency, Support for reading and formulation, Utilization of the medium potential, Integration of contextual information integration, Categorize information and use menu items that are unequivocal.

Chowdhury Golam Hossan, Md Wahidul Habib and I. Kushchu ⁴⁰, in their paper, ‘Success and Failure Factors for e-Government projects implementation in developing countries: A study on the perception of government officials of Bangladesh’ observes that, extent of digital dividend is numerous. One way to attain the benefit is to ensuring access to government services through electronic media. There is strong presence of digital divide among developing and least developed countries. However, in terms of access to ICT recent raise of middleman access agencies are playing vital role to bring access to network to under-privilege citizens in Bangladesh. Middleman access agencies are the small business entrepreneur who runs cybercafé and they provided value added services by browsing on behalf of the customer. One of the recent phenomena was application to USA diversity visa application where application needed to be lodged online served as an evident of the demand and presence of middleman access agencies. The middleman access agencies, for a fee, submitted the applications of their customers. It shows that access to internet and other electronic media is possible to bring through middleman agencies even to the rural people if there are enough motivating reasons. Internal political desire, Overall vision and strategy, Dominance of politics, self-interest, Strong change management, Effective project management, Competencies among the officials, Adequate technological infrastructure are factors for success of e-Government listed by authors, while as per author identifies lack of internal political desire for failure.

Arpit Jain, Maj. Gen. Dr. R K Bagga and KS Vijaya Sekhar ⁴¹, in their chapter ‘Capacity building for e-governance learning by doing methodology’ published by CSI SIG on e-Governance states that, with a host of impressive initiatives taken by Department of Information Technology (India’s strides in Information and Communication Technology continued unabated in DIT) of Government of India for reaching and serving the masses. The National e-Governance Plan (NeGP), approved
by the Government, takes a holistic view of e-Governance initiatives across the country, integrating them into a collective vision: The ultimate objective of NeGP is "Make all Government services accessible to the common man in his locality, through common service delivery outlets, ensuring efficiency, transparency, and reliability of such services at affordable costs to realize the basic needs of the common man".

NeGP comprises of 27 Mission Mode Projects (MMPs) encompassing 9 Central MMPs, 11 State MMPs and 7 Integrated MMPs. It also includes 8 program support components aimed at creating the right governance and institutional mechanisms, core infrastructure, policies, standards, and the necessary legal framework for adoption of e-Governance in the country. NeGP is being implemented at the Central, State, and Local Government levels. As of date, all Central MMPs have crossed the stage of conceptualization and moved to design-and-development and implementation stages, schemes having been approved for 8 of the 9 MMPs.

The International Institute of Information Technology at Hyderabad is taking efforts to train budding engineers in the domain of e-Governance. The positive feedback encouraged the authors to attempt a new approach of Learning by Doing Methodology for its applicability across the country, for training thousands of e-Governance specialists required in e-Governance domain.

Kedar Kadam 42, in article ‘Usability: High value proposition for successful e-Governance in India’, opinioned that, the challenges of implementing an e-Governance project in India are abundant. The user size is huge and diverse. A democracy is a government of the people by the people and for the people, so the expectations of citizens from the government are very high. In such a scenario when any e-Governance system is introduced and is found not usable by the citizens or by government officials, it’s not just a failure but also a waste of citizens hard earned money. Usability if used to the best of its potential is a virtual guarantee for successful e-Governance Project in India.

Sameer Sachdeva 43, in his paper, ‘Twenty Five Steps towards e-Governance Failure’ concludes that, the e-governance projects should be properly conceptualized and planned. If required help of an external agency may be taken. While defining the scope of the project the situation on the ground may be considered and efforts must
also be taken to ensure to understand the limitations in which the Government operates. The top leadership should be highly motivated for the project. The efforts should be to concentrate on Governance than on IT component. Vendor driven projects should not be considered at all. Further it is better to lapse the Department Budget than to purchase unwanted stuff from the same. The consultation should be spread over all stakeholders and proper timelines should be kept. Efforts should be to institutionalized the projects than individualize it. The projects should automatically continue even after the individuals leave. Government must respect innovation and protect the reformers. The politics of e-Governance must be avoided and it should be ensured that there are no blame games. Radical and big changes must be discouraged and sudden surprises must be left out of scope of e-Governance. Efforts should be there to have right public private partners who may lead to e-Governance success. In short the twenty five pitfalls as mentioned above must be avoided to succeed in e-Governance implementation.

Åke Grönlund and Thomas A. Horan,44 in their paper ‘Introducing e-governance: history, definitions, and issues’ states that, The e-Governance field (also called Electronic Government, Digital Government, Electronic Governance, and similar names) emerged in the late 1990’s. But the history of computing in government organizations can be traced back to the beginnings of computer history. A literature on “IT in government” goes back at least to the 1970s Just like the term e-Commerce, the term e-Government was born out of the Internet boom. However, it is not limited to Internet use or publicly accessible systems for direct use by customers or citizens. E-Governance started as a practitioner field, basically convening practitioners struggling to meet the new challenges of the Internet medium by implementing new systems creatively.

Doria Pilling and Heike Boeltzig,45 in their paper ‘Moving Toward E-Government – Effective Strategies for increasing Access and Use of the Internet Among Non-Internet Users in the U.S. and U.K.’ opined that, increasing penetration of the Internet for government service delivery (e-government) poses new challenges for the users of those services, especially groups of people who are less likely to use the Internet but are more likely to use government services - people on low incomes, older people, and people with disabilities. Internet access in itself does not mean that
those who could benefit most from government online services will use them. While there are many initiatives intended to increase access to and use of the Internet, some of which have an element of increasing use of e-government, there are few detailed accounts of what makes an initiative successful.

**S Ghatak and S. Singh**\(^{46}\), in their paper ‘Measuring Citizen’s Perception and Acceptance of e-Suvidha in relation to TAM: An Empirical Study’ have observed that, the adoption of Information and Communication Technology (ICT) in governance is meant to move beyond the passive information giving the active citizen involvement in the decision-making. The recent advances in communication technology and particularly Internet provide opportunities to transform the relationship between government and citizens in a new way. Despite of these advantages some e-governance initiatives fail because either there is challenge of e-readiness or there is a challenge in design-reality implementation gap. E-government initiatives have shown improvement over the previous year. In India it is still in a very nascent stage, thus various experiments are being conducted to implement and improve the e-governance initiatives. Aligning itself with the rest of the nation’s e-governance momentum, the Uttar Pradesh (UP) government has finally registered the State Smart City Project unit as ’eSuvidha’. It commenced its operations from 8\(^{th}\) August 2006. This has been launched as a pilot project in Lucknow, the capital city of UP, and has plans to extend to other cities based on the success, challenges and issues faced in Lucknow. Thirty four integrated service centers are in operation. The concept of e-governance in Uttar Pradesh appears to be in an inferior state due to lack of connectivity between government departments. The state was found to be a slacker on citizen satisfaction and e-readiness.

**Mauricio S. Featherman and John D. Wells**\(^{47}\), in their paper ‘The Intangibility of e-Services: Effects on Perceived Risk and Acceptance’ states that, the research makes four theoretical contributions to the services marketing, IS and HCI literature. First this research helps clarify why the intangibility of e-services is a problem that can and needs to be solved to facilitate increased e-service usage. The physical intangibility of the e-service and the evaluation cues used to portray it are manifested in higher consumer mental intangibility that affected how the e-service was evaluated including increasing the perceived risks of usage. Second, this research helps to clarify that the
perceived ease of using an e-service functions as a risk-reducing strategy for e-services but only when consumers’ mental intangibility is low and consumers’ have a clear mental model of e-service processes and outcomes. Third, support for a higher-order risk variable is found. Prior marketing literature has theorized but never tested for a higher-order risk variable. A multi-faceted measure of perceived risk is leveraged, that also increases the precision of the research, helping to clarify the effects of mental intangibility. Fourth, the research suggests that eservice adoption decisions can be modeled as an evaluation of the potential risks and benefits derived from usage.

Soonhwa Lee-Klenz, Pedro Sampaio and Trevor Wood-Harper, in their paper ‘A Requirements Elicitation Framework and Tool for Sourcing Business-IT Aligned e-Services’ opinioned that, the technical advantage leads to new demands for unbundled software services sourced and delivered online. In this new setting, the service consumers search and contract separate pieces of independent services with an adequate extent of autonomy from different Application Service Providers (ASP). When unbundled services are provided over the internet marketplace, it must be possible for the service consumer to select services across ASPs. With the growing trend towards reengineering existing applications into on-demand services and the potential development of E-services marketplaces in the near future, companies will be faced with the need to find, source the services in the marketplace that they need to support their business strategies. In this context, two key factors will underpin IT sourcing decisions: identifying and eliciting service requirements that are aligned with strategic business needs, and facilitating the process of searching services available in the marketplace that best match the service requirements.

Saad Haj Bakry, in his paper ‘Toward the development of a standard e-readiness assessment policy’ it is argued that his work initiate new dimensions for important future efforts toward implementing the proposed policy development process and developing and using the target issues associated with STOPE elements, on the one hand, and knowledge on the related statistical indicators usually considered by national and international development organizations, on the other. Another dimension is concerned with the relative weights of the various components of the issues associated with STOPE elements, STOPE elements and DIAMOND
determinants, and DIAMOND determinants and the top root measure. Field studies can enhance the evaluation of these weights. A third dimension is related to the practical testing of the above. For this purpose, case studies, with known previous development of e-readiness can be used. This would provide feedbacks to the above potential studies, and would help confirming their validity. Practical studies using the above would make a fourth dimension. Such studies would provide attractive evaluations, and useful recommendations for various countries.

T. P. Rama Rao, V. Venkata Rao, S. C. Bhatnagar and J. Satyanarayana 50, in E-Governance Assessment Frameworks (EAF Version 2.0) report for Department of Information Technology, Government of India, states the service orientation attributes under three broad sub-groups namely are efficiency, user-convenience, and citizen-centricity. The technology and its robustness are important for a project's performance. The attributes measuring technological base are its architecture, compliance to standards, inter-operability, security, scalability, and reliability. The sustainability of a project depends on the organizational sustainability, commercial sustainability, and legal sustainability. The cost-effectiveness will have to be assessed from the view point of users (citizens, enterprises), service providers and the government. The factors contributing to replicability of e-Governance project are: functional replicability, technological replicability, and commercial replicability.

Nazli Choucri, Vincent Maugis, Stuart Madnick, Michael Siegel 51, in paper ‘Global e-readiness - for what?’ argued that, the rapid rate of Internet penetration throughout the world, coupled with dramatic advances in uses of information technology in business and industry, is creating an extensive literature on various aspects of ‘e-Business’ and ‘e-Commerce’ as well as a special interest in ‘e-Readiness’ both here and overseas. Recent studies showing the increasing knowledge intensity of economic activities in almost all of the industrial countries contributed to an accelerated interest in e-venues for growth in the developing countries. National and international institutions alike appear to be focusing on the e-potentials for growth in private as well as public sectors, and almost every developing country is now mounting a national information technology (IT) development plan. A wide range of studies on e-Readiness, undertaken over the past several years, constitutes the ‘first generation’ in our understanding of e-Readiness. These are
pioneering efforts and have begun to chart unknown terrain. Their contributions are commendable. But, as with all pioneering efforts, these studies are fraught with uncertainties and ambiguities in both theory and practice and lack robust foundations for empirical analysis. As such, they provide little guidance for business and government, thus obscuring the realities as well as the opportunities. For example, current e-Readiness studies and attendant indices assume a fixed, one-size-fits-all set of requirements, regardless of the characteristics of individual countries or the demands for specific applications.

Devendra Potnis and Theresa A. Pardo 52, in their paper ‘Evolution of Readiness Indicators’ claims that, calculating “risk-to-reward index” based upon risk-to-reward ratio for investment decisions made by a government might better evaluate “capacity” and “willingness” of a government thereby devising a better e-Readiness Index, in the future. For instance, for offering some advanced level online services, a government from a developing nation might compete against greater number of competing interests compared to a government from a developed nation. Thus, the risk-to-reward ratio will be higher for a government from a developing nation; hence, the degree of “willingness” for offering government services and products electronically demonstrated by a government from a developing nation could be interpreted as “higher” compared to that of its counterpart in a developed nation.

Renu Budhiraja andSameer Sachdeva 53, in their paper ‘E-Readiness Assessment (India)’ have opinioned that, there are many of factors that promote the countries to be e-ready. It will not only lead to a Simple, Moral, Accountable, Responsive and Transparent (SMART) Government, it will also lead to making the citizens life easy. ICT promises various social and economic benefits as well. Secondly, the countries are facing a threat of being left behind. Third, international leaders, foreign donors, and lending agencies are integrating ICT into development and aid programs. Again ICT is a key weapon in the war against world poverty. When used properly, it offers a tremendous potential to empower people in developing countries to overcome development obstacles; to address the most important social problems they face; and to strengthen communities, democratic institutions, a free press, and local economies.

Tamara Almarabeh and Amer AbuAli 54, in their paper ‘A General Framework for E-Government: Definition Maturity Challenges, Opportunities, and Success’ states
that, the world moved from the industrial age into the information age. The manifestations of this transformation and the emergence of the transition terms and concepts have become part of our daily lives, in the field of economics emerged concepts such as E-commerce, E-business and electronic money, In the area of contact: E-mail, E-learning, and in the area of public sector: E-government. This paper introduces a general framework for the E-government through discussing answers to 3 main questions related to E-government: What, Why and How E-government? The answers to these questions summarized in giving different definitions, maturity for E-government, addressing the challenges and opportunities for developing a successful E-government, and discussing different factors for achieving the success for E-government projects and the role of ICT.

Indrajeet Dutta and Dhananjay Joshi⁵⁵, in their article ‘Bridging Digital Divide in Higher Education through ICT’ concludes that, the existence of digital divide in not universally recognized. The digital divide should soon disappear in case. The knowledge of computers will become less important as they get smarter and easier to use. In the future people will not need high-tech skills to access the internet and participate in e-commerce or e-democracy.

Alan Dix, Janet Finlay,Gregory D. Abowd,Russell Beale⁵⁶, in their book ‘Human-Computer Interaction’ states that, query technique is one of the evaluation method through user participation. Interviews and questionnaires are two types of query techniques. Questionnaire method can be used to reach wider participant group, it takes less time to administer, and it can be analyzed more rigorously. There are number of styles of questions that can become part of questionnaire. It includes general, open-ended, scalar, multi-choice and ranked questions. The question types are to be selected as per purpose.

Debbie Stone, Caroline Jarrett,Mark Woodroffe,Shailey Minocha⁵⁷, in their book ‘User Interface Design and Evaluation’ states that, Human-computer interaction (HCI) is the study of how humans interact with computer systems. Many disciplines contribute to HCI, including computer science, psychology, ergonomics, engineering and graphic design. Good user interface is important.
Shafi Al-Shafi and Vishanth Weerakkody⁵⁸, in their paper titled ‘Understanding citizens' behavioral intention in the adoption of e-government services in the state of Qatar’ point out that; citizens using e-government may benefit from the services and consequently encouraged to adopt e-government. If the government provides more benefits to its citizens in terms of convenient access and prompt services, when compared to the old and traditional means, then possibly this practice might spread the use of e-government services throughout the Qatari society. Three constructs (namely, performance expectancy, effort expectance, and social influence) significantly influenced the behavioral intention of citizens for adopting e-government services in Qatar.

Govt. of Maharashtra, Dept. of Higher and Technical Education⁵⁹, in the Government Resolution issued on 19 June 2006, have emphasized the need of ‘e-Suvidha’ for the students of higher and technical education under the ministry. To save students time, money and efforts the need of ‘e-Suvidha’ is mentioned in the resolution preamble. The e-Suvidha meant to provide academic and administrative information, information about employment and self-employment assistance at one place. The Government Resolution has made it mandatory for all state universities and affiliated colleges to sign MOU with implementing agency MKCL and offer e-Suvidha to students for which moderate fees of Rs.50 will be charged per year from each beneficiary student.

Directorate of Higher Education, Maharashtra State, Pune⁶⁰, in the circular issued to all all 10 Joint Directors of Higher Education and registrars of All 12 State and 14 Deemed Universities regarding implementation of MKCL’s ‘e-Suvidha’ states that Govt. of Maharashtra, Dept. of Higher and Technical Education have entrusted a task of Development of e-suvidha software to Maharashtra Knowledge Corporation Limited (MKCL) for the online Admission procedure under Higher Educational institutes in the state of Maharashtra (i.e. in different Universities and in their affiliated colleges), It was mandatory to sign a MOU (Memorandum of Understanding) with MKCL vide the Govt. Resolutions issued by Ministry in this regard. MKCL reports that that many universities have still not signed MOU with MKCL. The progress of e-Suvidha is not satisfactory. Hence it is herewith instructed
that those universities who have not signed the MOU should sign it before 15th May, 2010. Many Universities have signed MOU but the details of some courses are not included in e-Suvidha. It is essential that the details of all courses should be included in e-Suvidha for all the colleges affiliated to your Universities. University/College Administration should have to enroll the student information while making the admission of a student for a particular course and Eligibility procedure too through e-Suvidha only. Whereas the universities can use their own software for the Examination and Result process of the students and the data of the Examination results can be migrated in digital university portal after declaration of the results.

S.L. Rao 61, Calcutta Telegraph, India - 7 Oct 2007 in his article titled ‘Indian higher education is over-regulated but under-governed’ referring to National Knowledge Commission report writes that, the report is easy to read, brimming with good intentions, and very comprehensive, covering issues like libraries, networking, e-governance, and so on. The approach is that higher education must expand its reach and improve in quality and that problems must be dealt with, not agonized over. The report covers five key areas: access, concepts, creation, application and services. In these areas, it deals with a wide range of subjects, comprehensive reform of higher education, overhaul of public libraries, creation of knowledge portals, transforming vocational education, re-engineering of government processes and regulation, and making e-governance citizen-friendly.

The report’s approach to governance is correct but unusual for a government committee. It does not trust the bureaucracy to govern higher education, and in a manner to meet the report’s ambitious objectives. However, it ignores governance at the political level. Education is a concurrent subject in the Constitution. In many states, the political compulsion of providing ministerial portfolios has led to a proliferation of ministries. Education is split between ministers for primary, secondary, higher and professional education. This is obviously not conducive to coordinated development of education. The report also needs to consider how there could be involvement of local communities and parents in appointing teachers, introducing some flexibility in remuneration, evaluating performance, and so on.

This report is well-meaning and concerned about improving the quality of the “demographic dividend” that India is said to get in the coming years because of the
rising population of youth. It is weak on specifics about the legislative, administrative, regulatory and financial measures needed to implement its good intentions.

Swati Shinde 62, Times News Network, Nov. 14, 2010, Pune in her article titled ’20 Lack students benefit from MKCL’S e-Suvidha’ reported that, the e-Suvidha, a technology enabled model introduced by Maharashtra Knowledge Corporation Limited(MKCL) has touched the 20 lack mark, as students from across the state continue to benefit from it. She also reported Rajesh Tope, minister of higher and technical education saying ‘Maharashtra has brought a revolution in universities and colleges by transforming the traditional student’s life cycle process into delightful experience , through digital frameworks such as digital university, employment assistance services to youth(EASY) and online application solutions and integrated services (OASIS) , with the help of MKCL’. The reported also quoted Vivek Sawant, Managing Director, Maharashtra Knowledge Corporation Limited saying ‘ With the advent of new information and communication technologies, the higher education scenario in the country is going through a significant change and universities are exploring new models of governance to keep pace with the changing scenario.’

Vivek Kothari 63, Times News Network, Education Times, April 27, 2011, Pune in his article titled ‘State sponsored e-Suvidha scheme a must for all varsities’ reported quoting director for higher education R.V.Kirdak and MKCL Managing Director Vivek Sawant that “The state government has made it mandatory for all universities, including deemed universities and autonomous institutions , to adopt the e-Suvidha scheme which provides online facilitation services for students, teachers and administrators. Already close to 20 lack students are benefiting from the services from seven universities, the move to make scheme mandatory will make another 15 lack students under the ambit of services”

DNA Correspondent 64, Apr 27, 2011, Pune in his article titled ‘17 varsities in Maharashtra yet to implement e-Suvidha’ reported that, Despite the government making adaptation and implementation of e-Suvidha in all universities in the state mandatory, only 10 universities in the state have signed a memorandum of
understanding (MoU) with the Maharashtra Knowledge Corporation Limited (MKCL) for providing e-Suvidha services.

As per a circular issued by the department of higher and technical education on February 11, it is mandatory for all universities and colleges in the state to sign a MoU with the MKCL on or before May 15 for implementation of the e-Suvidha scheme to bring all universities and colleges on a single standard digital platform.

Seventeen universities are yet to implement the scheme, which was initiated in 2006. Under this scheme the MKCL has designed and developed Digital University and Digital College software framework for providing e-services to students, teachers, administrators and other stakeholders.

In the last three years, approximately 20 lakh students in more than 2,800 colleges and study centers under ten universities have benefitted through e-Suvidha. And with its further implementation 15 lakh more students will benefit.

Express News Service, PTI 65, Apr 28, 2011, Pune in their article titled ‘E-Suvidha finds few takers among universities’ reported that, Out of 17 universities in the state that haven’t yet signed the Memorandum of Understanding (MoU) for implementation of e-Suvidha scheme, eight are from Pune. The Department of Higher and Technical Education has sent a letter to the universities to sign the MoU on or before May 15 as it is mandatory for all the universities in the state to do so. However, if the universities choose not to sign the MoU, no action will be taken against them. The report quoting Vivek Sawant, managing director, MKCL, said, "The e-Suvidha scheme is for the greater benefit of students. Information regarding various courses, different universities, colleges, scholarships and examination results will be available at a single click. The government wants each and every university in the state to make use of this scheme. The universities do not have to make any extra investment for the implementation of the scheme as the infrastructure is already available. We have appealed to the universities to sign the MoU as it is for the good of the students."

Directorate of Higher Education, Maharashtra State, Pune 66, in the letter to Principal System Analyst, SDU-National Informatics Centre have asked for Development of MIS of Higher Education in the state of Maharashtra. It will augment existing e-Suvidha implemented in institutes of higher education. MKCL will support
NIC in the development of comprehensive MIS of Higher Education, which will be very useful in effective decision making with respect to higher education of the state.

2.2 Summary:

The literature gone through this research study which formed base of fair understanding and support to conduct research gets highlighted in this chapter. Literature in the area of e-Governance, e-Services, e-readiness, e-services management, Human Computer Interaction, usability analysis and student e-services management with e-Suvidha were referred and gets reported in this chapter.

References:


64. Correspondent, DNA. 17 varsities in Maharashtra yet to implement e-Suvidha. *DNA*. Pune, April 27, 2011.
