

Limitations of Selected e-Governance Services in India: Policy Change as Solution for Experience Enhancement of Citizen Services

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Abstract—This paper identifies limitations of existing two e-Governance services viz. railway ticket booking and passport service in India. The comparison has been made as to how in the past these two citizen services were operating manually and how these services are taken online via e-Governance. Different e-Governance projects, investment aspects, and role of corporate are discussed. For Indian Railway online ticketing a comparison has been made between state run booking website and popular private firm run booking websites. For passport service, observations through personal visit to passport center is described. Suggestions are made to improve these services further to improve citizen service experiences.

Keywords—e-Governance, citizen services, Indian Railways, passport.

I. INTRODUCTION

UNLIKE in past, when almost all the services provided by government of India (such as postal services, railway ticket booking, paying municipality tax bills, applying for passport, getting land records, etc.) were on offline platform and done manually with no support of information technology, the government has taken many, if not all, of these services on information technology platform, better known as e-Governance now. Still in India services such as registering for birth, registering a marriage, registering for death etc. are on manual mode. It is not an easy task to take all the citizen services on online mode due to large population of the countries like India and due to investment required. Implementation of e-Governance service projects demands huge investment by government. Chennai (India) based Exemplar Worldwide Ltd [1], a KPO company, says that e-Governance market is 400 billion INR (Indian National Rupees). According to NASSCOM, government of India spent around 200 billion Rupees on I.T. in the year 2013-2014 [2]. Though there are obstacles in implementing e-Governance service projects, especially when private firms deal with government. One of such obstacle is payment related problem faced by private companies. One of the leading business newspapers of India Economic Times wrote that policy challenges are one of the reasons for private companies to take eGovernance projects in India. Moreover, slow payment period and narrow profit margin too make companies shun

government projects. Government of India has outsourced e-Governance projects such as Unique Identification (Aadhaar), and India post service modernization to Indian information technology companies such as Infosys, HCL, Mindtree, etc. Issues such as related to payment and government's resistance to change are also acknowledged by top management of leading Information Technology Company of India. Indian software service companies have faced declined in profit margins to less than ten percent while they have been managing to earn twenty percent profit margin in markets such as the U.S. and Europe. Major reason behind this gap in margin is payment delay in Indian government's e-Governance project taken up by these I.T. companies. A report on India IT-BPO performance [3] depicts government sector as a vehicle for information technology adaptation boost. The report mentions major e-Governance projects such as Indian railways modernization, NeGP (National eGovernance Plan), Restructured Accelerated Power Development and Reform Program (APDRP) etc. Information Technology acceptance gets enhanced through sectoral reforms. The report states that government programs like NeGP, UIDAI (Unique Identification Authority of India)/Aadhaar, etc. create large scale information technology infrastructure and encourage participation from private players or corporate. Both central and state governments have been aggressive on investing in e-Governance projects at a large scale. Published in 2010, this report says that government is planning to invest approx. 340 billion INR (Indian National Rupees) to provide better citizen services with a support of technology in coming years. Government basically adopts information technology to cater not only needs of functioning and administrating its ministry and departments but also to cater large population of the country. From computerized record keeping, focus of the government has been shifting to citizen services. Another report [4] by leading Indian information technology company – Infosys suggests that it is not easy for government to make its welfare benefits reach to the country's citizens. This report is a collection of papers on building and delivering instant citizen services by government. Areas such as e-Voting, Land Record Information Management, cloud computing, Information Communication Technology, mobile devices, etc. are explored. It says that government needs to maintain transparency and efficiency to reach to its citizens through service delivery via e-Governance as it has that capability. To make e-Governance a success, the report suggests to fine-mix a political will and technology. The report states that besides

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the fact that it has been a decade of existence of e-Governance, its scale of acceptance is yet to achieve. There are reasons discussed behind yet to achieve the acceptance such as social or political nature of the factors. Three major benefits of e-Governance cited are faster distribution of information, higher administrative efficiency, and improved public service. It is believed that issues such as poor infrastructure, corruption, traffic, pollution, poor healthcare delivery, land dispute etc. can be solved with a tool of e-Governance. The report also bewares that what has worked in other countries may not necessarily work in India. A report by Deloitte-Aegis [5] notes that when social media, mobility, cloud computing etc. are playing huge role, broadband is the lifeline of the Indian government's Digital India project. The government has been attempting to empower every citizen and household with digital technology. The budget has been allocated on e-Governance, computerization, e-Visas, e-Commerce, digital classrooms, etc. and internet technologies can also be utilized for improvement in the sectors such as healthcare, education, energy, agriculture, telecom networks etc. Digital India has been a project targeting to spend more than 1 trillion INR in coming years to create more than 100 million direct and indirect jobs via national broadband plan.

II. LITERATURE REVIEW

A. E- Governance in India

Every project has its challenges, opportunities, problems, and solution. So is true with e-Governance projects in India. Reference [6] lists out different challenges before e-Governance in India. The first challenge, according to the author is reach because as per 2011 Census only 3% households have computer with internet connectivity. Even adding access to cyber café – though it is hardly present in rural India – there will not be a good access of internet to avail online government services such as railway ticketing, paying utility bills, paying income tax, banking etc. Second challenge is user-friendliness of government portals (which is a focus of this paper). India is a multi-lingual country and a very small portion of Indian population is well-versed with English language and English language portals. Though many portals have Hindi version but it is difficult to understand Hindi-translated technical terminologies. Third challenge is cumbersomeness, in which the author has narrated author's personal experience of dealing with passport application online via government portal. Next challenge described is mechanical approach, which is more described as lack of human touch in online services. The issue of waiting time in e-Governance services needs to be addressed. The last challenge is hacking, especially for service providers. Securing finance transactions online is a big challenge for government. Government of India launched its country wide program i.e. the National e-Governance Plan (NeGP) in the year 2006 [7]. To meet demand for connectivity and for hosting e-Governance data, a common I.T. infrastructure was created so that Government to Citizen (G2C), Government to Government (G2G), and Government to Business (G2B)

services could be provided effectively. The report states, "There is also an effort to bring to light the importance of comprehensive citizen data in order to aid better targeting of the benefits and services under the various government schemes." One more paper titled 'Guidelines for Strategic Control in Outsourced Projects' describes various dimensions on control over various e-Governance projects which are outsourced by government to private players. NeGP report consists of various aspects such as Common Services Centers, e-District, State Wide Area Network, State Data Center, eForms, State Portal, State Service Delivery Gateway, Standards for e-Governance, Capacity Building, National Population Register, Guidelines For Strategic Control In Outsourced Projects, Dedicated Project Team, Shared Platforms for e-Governance, Electronic Service Delivery, Awareness Strategy for NeGP, etc. The government has adopted certain standards to smoothen information sharing and make data operable internally among different e-Governance applications. The use of Open Standards is promoted. Under NeGP, and institutional mechanism has been set up and notified under chairperson of Department of Information Technology, and members from NASSCOM and other bodies. A special website – <http://egovstandards.gov.in> has been developed for the standards and guidelines. The Common Service Centers act as access points for Indian citizens to avail different e-Governance services introduced by government of India. More than 600,000 villages in India are covered via more than 250,000 Common Service Centers. In an edited book [8], contributing authors throw light on issues, approaches and project assessment of e-Governance in India, departmental efforts, and various projects such as Government to Citizen (G2C), Government to Business (G2B), Government to Government (G2G), and Government to Employees (G2E). The government of India adopted new policy on standards for e-Governance in 2008 and e-Governance is helping make services more transparent and lessen time and cost. Service delivery which is more convenient to citizens has become possible due to new communications technologies. Still there are problems, particularly social, economic, and political one, which need to be solved. Not technology, but change management is the bigger challenge to make successful implementation of e-Governance possible. The book poses – and makes an attempt to find answer of – questions such as 'Why do we need e-governance?', 'How do we Create a Culture of Learning?', 'Can e-Governance initiative in India bridge the gap between a downturn in outsourcing business and consequent job market?', 'Can technology stop corruption?' etc. The book explores areas such as National e-Governance Plan (NeGP), critical issues in e-Governance, challenges and approaches for assessing e-Governance projects, case studies of government departments' efforts in Indian states such as Kerala, Chhattisgarh, Andhra Pradesh, Gujarat, Uttar Pradesh, and Tamil Nadu. Various Government to Citizen (G2C) projects such as Registry Department, Jan Seva Kendra (Civic Service Centers), e-Arik (e-Agriculture), Internet-based Data Entry and Retrieval – SPIDER Systems, Electronic Citizen Services

– ECS, Telecenter Project, Property Registration and Land Records Administration, Water Supply and Sanitation, Paperless Admissions to courses, e-Gram (e-Village), Rojgar Wahini (employment portal), Dhan Kharidi-Online (Online paddy procurement system), Emergency Management – EMRI etc. are deliberated upon. Looking at fifteen years of research in India, [9] notes that a rapid rise of e-Governance projects is seen in last a few decades in India. The basic aim of this has been to boost development via improved e-Governance system by introducing Information Communication Technologies. The author, in this book, introduces concepts of development and governance, and proposes an alternative framework with finer levels of political, social and administrative processes. These processes play a role in implementation of e-Governance projects. In last over a decade, India's development ideology, government reforms, information communications technology, etc. have been changed. In this book, the author has presented three case studies pertaining to different social sectors belonging to different Indian states. The book draws attention to the judgment that the historical processes of development and governance should not be surpassed by e-Governance and other such technologies.

B. Indian Railway Ticketing System

Indian Railways is one of the largest networks in the world and not much is researched about past and present of Indian Railways. Reference [10] studied the level of rail-based passenger mobility as well as road-based passenger mobility in India from the year 1995-96 and estimated the mobility for the year 2015-16. The level of road-based passenger mobility was estimated to be 7763 to 9960 billion passenger-kms., while the level of rail-based passenger was estimated to be 405 to 532 billion passenger-kms. This forecasting was based on estimation of S-shaped growth curves. Annual data of the level of passenger mobility from the year 1950-51 to 1995-96 were used. The study found that in future, road transport will play an extremely dominant role in India in providing passenger mobility to the people. By the end of the year 2015-16, road share in passenger movement will touch 95 percent compared to 5 percent for the rail-based. Thus, the expected greater dependence on road will pose a challenge to the policy makers. Moreover, energy availability and environmental concerns will be areas of serious concern. Online buying behavior plays a role in deciding on availing services online. Reference [11] conceptualized 'personality' in the context of online buying and then tested it empirically. Authors explored critical consumer personality traits that influence the online buying decision of people. Authors first conducted a pilot survey on a sample of 100 users of the online railway ticket reservation system to determine the validity and reliability of the survey instrument. Then the study was conducted on a sample of 327 users of online railway reservation facilities, and multiple regressions analyses were applied. The tests were applied to determine the causal impacts of critical consumer personality traits on online reservation of railway ticket by users in the Indian context. Results found that all the critical online buyers' personality traits had a significant impact on

the intention of buyers of booking or purchasing railway tickets online in India. A similar research is done in the context of Taiwan. Reference [12] surveyed 236 international travelers who had purchased airline tickets from 30 different airline service websites in Taiwan. The authors investigated customers' perceptions of quality of e-service experiences and service satisfaction. Considering customer perceived trust and usefulness, authors applied a technology acceptance perspective to predict consumer behavior when purchasing airline tickets online from e-traveling service companies. Results showed that perceived trust and perceived usefulness play a major role in predicting customers' attitudes toward online shopping and purchasing intention. These also play a role in moderating of the perceptions of international travelers of e-service quality and service satisfaction for e-travelling service consumers. The authors found that perceptions of the customers for trust and usefulness positively moderate the relationship among – (1) E-service quality, (2) Perception of service value, and (3) Service satisfaction. Perceptions of the customers were the factors of the technology acceptance perspective. Because of the reduced waiting time compared to offline transactions, E-service markets for airlines have been growing fast over the past several years. Reference [13] evaluated the quality of passenger Rail Service of Indian Railways. Authors modified Grönroos Technical and Functional Quality model with modified attributes. They identified the attributes to evaluate the quality of Railway Passenger Services and developed a comprehensive instrument RAILQUAL by adding three new dimensions viz. Service Product, Social Responsibility and service delivery to the original five SERVQUAL dimensions viz. assurance, empathy, reliability, responsiveness, and tangibles. Empirical study was conducted at Secunderabad Railway station of South Central Railway, India, using a purposive sample of 200 respondents. Authors also identified the order of importance for these eight factors. Service delivery was identified as the most important and social responsibility was identified as the least important factors. Indian Railways can use this instrument to collect feedback from passengers, to monitor, to control and to improve the service quality. Reference [14] argued that a good governance framework can be used to develop an e-Governance strategy that focuses on governance outcomes. One such framework is developed by the Institute on Governance (IOG). The authors used the case of Indian rail transport to examine how the Institute on Governance framework can help in developing involvement to achieve governance outcomes. Authors did studies on various functional areas of Indian Railways and discussed relevant applications of e-Government and highlighted the present e-Government applications. It was both-practical and feasible to use a good governance framework as a method of developing an e-Governance strategy. The strategy could facilitate the stakeholders in monitoring and evaluating governance outcomes. The need for further research to examine opportunities and the deficiencies using this method were highlighted. In his thesis, [15] wrote that rail transit systems were very expensive and it consumes long time to be built.

Countries such as Puerto Rico have opted for an alternative procurement strategy. The Tren Urbano in San Juan, Puerto Rico is one of the examples. The thesis focuses on responsibilities of a public agency during procurement process. Author recommended setting up a two-tier structure for management and control, changes which are likely when there are changes in procurement strategies, the basic questions addressed with regard to the capacity to sue and be sued, the advantages in fixing limits on the liability, ability to raise finance, and dispute resolution. Studying number of projects, [16] showed project risk factors derived. The authors found that the risk factors were widely applicable while the success factors depended on the organizational and external environment of each case. The success factors reduced the risks. The authors noted that computerization of the passenger reservation system had been the most successful project undertaken by the Indian Railways. Passenger Reservation System was designed and implemented in the year 1985 as a pilot project on two trains. The system had been increasingly upgraded. It processes over a million transactions daily, across 1200 locations in India. The system serves thousands of customers over the Internet. In their teaching case, [17] depicted challenges faced by the technology managers at Indian Railways in the scenario of a reviving national economy tied with increasing customer expectations. Authors noted that amid increasing competition from road transportation industry and from the low-cost airlines, Indian Railways had changed its business rules to retain its customers. The Railway Ministry expected a rapid response from Centre for Railway Information Systems (CRIS) to incorporate all these changes in the Passenger Reservation System (PRS). This case revealed the dilemma faced by the head of CRIS. CRIS is an agency for information technology (IT) implementation in Indian Railways. The dilemma was whether Indian Railways should continue using the previous PRS technology or should it take the risk and replace it with a new state-of-art technology? Reference [18] presented a system dynamics model of the Indian railway system and generated probable scenarios of performance of Indian railway system up to the year 2011, emphasizing on technology upgradation and energy. They described the structure of this model, the relationships among the variables, and the flow diagram used to develop the system dynamics model. Authors examined introduction of technological innovations in the railways and their impact on railway energy demand. Authors forecast that upgrading technology will not only ensure maximum return on capital investment but also provide very important passenger and goods transport services at the lowest possible cost.

C. Passport Services in India

The research on online passport services is not totally new. Reference [19] studied importance, objectives, and implementation of online services by Jordanian ministries and government departments. The study focused on civil status and passport services. The study explored ways to convert these offline services into online mode with model

applicability in online passport service systems. The authors suggest that different government services required to be collaborated with different ministries and departments, there should be an electronic interface, and secured online payment to be setup. Reference [20] observed that still today there is less usage and familiarity with eGovernance in spite of its implementation momentum and investment in eGovernance. The authors gave examples of countries like Canada and town like Dhar (India) where familiarity of eGovernance and its use has been not high. In their research, authors focused on individual's acceptability of eGovernance, particularly in Saudi Arabia. The research paper guided the way to implementing eGovernance projects in developing countries. Government of India has joined hands with leading information and technology company Tata Consultancy Services for passport processes management. One of the case studies [21] on this calls it a complex type of public sector project and sees a risk associated in it due to public transformation and due to influence of various stakeholders in this type of project. The case study exemplifies TCS-Indian Passport Project as a successful PPP (Public-Private Partnership) and appraises on time delivery and budgetary achievements of the project. The case study further denotes that the passport project was initial project under the National e-Governance Plan (NeGP) that government of India launched in the year 2006. One of the objectives of NeGP was to demonstrate a picture perfect to citizen of India. Under this project, seventy seven passport centers introduced [22]. India is a country with a diverse set of regional languages. Thus seventeen languages are supported in this project. Besides well planning, there are some challenges, particularly involving private players to successfully implement e-governance projects. Reference [23] in an article in leading financial newspaper of India finds three reasons for top Indian information technology companies having difficulty in executing government projects. These reasons are delay in projects, changes in leadership and increased public scrutiny. Companies referred here are TCS (Tata Consultancy Services), Infosys, and Wipro. In June 2014, market capitalization of TCS, Infosys, and Wipro was 4.7, 1.8, and 1.3 trillion Indian rupees respectively [24]. Also one of the concerns had been delay in TCS-Indian passport service project. A technology company officer working on Indian Railways project said, "*For us, increased scrutiny and frequent changes in joint project teams pose tremendous challenges...*" TCS was once asked to pay penalties of 200,000 INR every week of delay in the e-Passport project but it believed to be normal in the industry according to managers of I.T. firms as they are more concerned about finalizing contract. Delays in projects – which are sometimes due to legal issues – make companies waste their mobilized resources too.

III. DISCUSSION

The following two sections discuss aspects of e-Governance and citizen experience on two different services provided by Government of India – train ticket booking and passport service:

A. Indian Railway Online Reservation System

Online reservation system of Indian Railways has been empowered by BroadVision. Until the launch of IRCTC's online ticket booking website, passengers had to visit the railway stations personally to buy tickets. Indian Railways has fourth largest railway network in the world, after the network of the United States, Russia, and China. Managed by the Ministry of Railways, Indian Railways comprises of about 64,215 kilometers of tracks laid, 7083 railway stations, over 30 million passengers and 2.8 million tons of freight daily. It is one of the world's largest commercial or utility employers. It has more than 1.6 million employees. It owns over 230,000 (freight) wagons, 60,000 coaches and 9,000 engines. In India, 42 railway companies operated in the British colonial era were nationalized and run by the government after Independence. The Indian Railways has become the second largest rail network in the world [16] Indian Railways is divided into Zones, and further into Divisions. In 1951, there were 8 zones, and in 2010, there were 17 zones and sixty-seven Divisions. The Ministry of Railways launched the official website of Indian Railways – www.indianrailway.com in January, 1999 with the objectives to enable transparent functioning of the railways and to allow access of the information to the public. Later, Indian Railways also developed websites such as www.trainenquiry.com and www.indianrail.gov.in. These websites has been providing information on planning the trip, getting train schedule, checking train availability, seats availability, reservation enquiry, passenger status, details on trains between stations, details on PNR (Passenger Name Record) status, fare enquiry, special train list etc. These websites are more useful for searching for train lists and selecting trains but there is no online booking facility availability on these websites. For online booking, while clicking on 'Internet Reservation' button on www.indianrail.gov.in, the website automatically directs the users to www.irctc.co.in in a separately opened window. Ministry of Railways, Government of India established Centre for Railway Information Systems (CRIS) in 1986. The objective of CRIS is to provide IT innovations and consulting to Indian Railways. It has a team of excellent software professionals. The CRIS team has won the Prime Minister's Award for Excellence in Public Administration for providing a system for providing ticketing service all over the country, even in the remote parts. Incorporated in 1999, Indian Railway Catering and Tourism Corporation Ltd. (IRCTC) is a Government of India (Ministry of Railways) enterprise. It manages promoting national and international tourism, catering, hospitality, Internet ticketing and reservation etc. In the year 2008-09, IRCTC accomplished function of internet ticketing worth 748 million Indian National Rupees (INR) from the previous year's record of 391 million (INR) and from 97 million INR to 279 million INR in tourism function. IRCTC earned net profit of 465 million INR in the year 2008-09 compared to 207 million INR in the year 2007-08. In the year 2006-07, customers booked tickets worth 17 billion INR; this figure was 38 billion INR in the year 2007-08. The

company has won many awards such as National award for E-Governance, Best Citizen Centric application for the year 2007-08, National Award for E-Governance jointly by Department of IT, Government of India, National Tourism Award for Travel Portal – Raitourismindia.com in Feb 2008, EMPI Indian Express IT Innovation Award for excellent work in Citizen Centric Services 2008-2009, National Tourism Award and Award of Excellence by Ministry of Tourism, Government of India for the Buddhist Circuit Special Train in Feb 2009, CNBC Awaaz – Special Commendation for redefining Indian Railways Award-2009, etc. In addition to number of other uses of internet, people use internet for online train or air ticket booking widely. Technology has always played a key role in making life of the people easier and convenient. Customers do not mind to pay little more in order to save time and efforts. Earlier, passengers were required to visit railway station, stand in a long queue in front of booking windows, pay cash and commute a little to come back home. Now, ticket booking agents are playing a role between Indian Railways and passengers in making tickets available in the hands of the customers. Customers can cut short their trip to booking agents or cyber café, instead of visiting railway station. There are websites such as www.MakeMyTrip.com, www.ClearTrip.com, www.yatra.com etc. that charge nominal amount for providing online railways ticket booking services in India and allow customers to take prints of the booked tickets. Customers can not only get registered on these websites and get Login id and password but also make the websites remember customers' details such as their name, e-mail address, names of the family members, their age etc. when they login again to book more tickets. Online ticketing companies ask customers to pay for ticket and service charges through Credit cards, debit cards, Net banking, cash cards, or EMI (e.g. Citi bank EMI). Customers do not have to worry about availability of cash on hand, whatsoever the amount of ticket is. Customers need to make sure only about availability of sufficient balance in their bank account.

Ticket booking through www.irctc.co.in is one of the most convenient ways of booking tickets online and printing booked tickets. The users can send their feedback by clicking on any of radio button out of Good, Average or Poor regarding online experience such as on Look and Feel, Navigation, Ease of booking etc. related to www.irctc.co.in. Table I shows comparison of features provided by selected four online ticket booking websites – www.irctc.co.in, www.makemytrip.com, www.cleartrip.com, and www.yatra.com. The more the number of features, the more convenient it for users to book tickets quickly.

Table I shows that the number of features offered by selected websites differs. www.makemytrip.com, www.irctc.co.in, www.cleartrip.com, and www.yatra.com provide 10, 14, 17, and 18 features respectively. IRCTC online booking website offers fourteen out of twenty four features mentioned in the above table. E-Governance can help introducing ten more features to enhance users' online booking experience.

TABLE I
COMPARISON AMONG ONLINE TRAIN TICKET BOOKING WEBSITE

Sr. No.	Features	Websites			
		MakeMyTrip	IRCTC	Cleartrip	Yatra
1	Showing Train name	Yes	Yes	Yes	Yes
2	Showing Train No.	Yes	Yes	Yes	Yes
3	Showing Departure time	Yes	Yes	Yes	Yes
4	Showing Arrival time	Yes	Yes	Yes	Yes
5	Showing Arrival Date	No	No	Yes	Yes
6	Showing Distance (km.)	No	Yes	No	Yes
7	Showing Fare	Yes	Yes	Yes	Yes
8	Showing Days of run	Yes	Yes	No	Yes
9	Showing Seat availability	Yes	Yes	Yes	Yes
10	Showing Duration	No	Yes	Yes	Yes
11	Showing No. of stops	No	No	Yes	Yes
12	Search train without selecting a date, with a class	No	No	Yes	No
13	Search train without selecting a class, with a date	No	Yes	No	Yes
14	Search train without selecting a class, without a date	No	No	No	No
15	Route details	Yes	Yes	Yes	Yes
16	Showing total number of trains running	No	No	Yes	Yes
17	Arrange search result by Train names	No	No	Yes	Yes
18	Arrange search result by Class	No	No	No	No
19	Arrange search result by Departure/Arrival time	Yes	Yes	Yes	Yes
20	Arrange search result by Fare	No	No	Yes	No
21	Filter search result by stations	Yes	Yes	Yes	Yes
22	Arrange search result by journey duration	No	Yes	Yes	Yes
23	Save/E-mail train search result	No	No	No	No
24	Sharing train search result on Social Networking sites	No	No	No	No
	Summary	10 Yes, 14 No	14 Yes, 10 No	17 Yes, 7 No	18 Yes, 6 No

B. Passport Service

Passport is an important evidence of citizenship and a requirement for travelling abroad. Government of India passed THE PASSPORTS ACT, 1967 substituting THE PASSPORT (ENTRY INTO INDIA) ACT, 1920. The act deals with information on and provisions for classes of passports and travel documents, applications for passports, refusal of passports, powers etc. There are THE PASSPORT RULES, 1980 also, which describes Passport authorities, classes of passports, form of applications, financial guarantee, named foreign country, application fee payable, appellate authorities, etc. Though Government of India has taken entire process of passport application to online platform, there is a scope of improving citizen experience. Following sections discuss the previous and current process of applying for passport in India, limitations, and suggested solutions. The older procedure of applying for Indian passport was offline. Applicants needed to acquire and fill up printed application form, stick passport size photographs, visit District Superintendent of Police (DSP) office of the town/city of the applicants' residence, and submit the form. There were passport agents who used to get good number of clients as it was not easy to understand the passport application form and fill it correctly. In order to avoid the situation of making errors in application form details and later process or correcting errors, applicants used to rely on passport agents. Now the new online passport application facility has partially reduced – if not eliminated – the active role of passport agents. Though this agent dependency is

decreasing but not reduced to zero. There are such examples still prevalent [25]. Also an option of applying for passport offline is still available; the second option of applying online is quite convenient and quick. Three major factors that encourage passport application online are – 1) Ubiquitous PC/Laptop, 2) Proliferation of Cyber cafés, and 3) Easy access to internet. All that applicants need is a PC/laptop, internet connection, and an e-mail account, which many urban citizens have in India. A facility of cyber café also encourages applicants to avoid taking comparatively lengthy route of paper application. Moreover, internet is now easily accessible via portable devices such as dongles and on phones. Government of India issues passport under Passport Seva-Consular, Passport & Visa Division-Ministry of External Affairs. The dedicated website - <http://passportindia.gov.in/> is informative, simple and user friendly website developed by one of the leading information technology company TCS (Tata Consultancy Services) for passport application. On this website following menu are available:

- List of Passport Offices in India
- Consular Functions & Responsibilities
- Apply (for Passport)
- Document Advisor(Fresh/Re-issue)
- Contact details
- Quick Guides
- FAQs
- Forms & Affidavits
- User Assistance and Grievance

- Value Added Services (SMS and App)
- Media Corner
- RTI (Right To Information)
- Visa Services

The first step is New User Registration to create Login Id and password. There are two types of passport i.e. Normal, and Tatkaal (Urgent). Current procedure for acquiring normal passport is discussed here. There are two ways to apply online for Indian passport. One is by downloading electronic version of passport application form from the website – <http://passportindia.gov.in> and the other is by filling details online directly on that website. In both the ways, generating user id and password is necessary. In case applicants select the former option, they need to fill details, save form, and then upload that form. There is no requirement of downloading or uploading any document in later option as information is saved real time. After successfully applying online, applicants need to make payment and schedule an available appointment to visit the passport office or center (known as *Passport Seva Kendra*) in their town/city. An acknowledgement receipt with application number is generated after booking an appointment. Applicants can anytime (and end number of times) check their application status, payment details, and appointment details by logging in to the website. Next step is to visit passport office with original documents on given date and time of appointment. Major documents required to be produced at passport office, generally, are proof of residence, proof of age, and valid photo identity card, and other documents, if necessary, for example, in case of applying for passport for minor. The processing of passport at passport offices/centers is managed by TCS–Tata Consultancy Services. There are four sections processing passport application – 1) Collecting photocopy of necessary documents after verifying them with original documents and issuing token number. 2) Verifying document copies, scanning and uploading original documents, taking applicant's photograph, receiving payment for an optional SMS service. 3) Verifying original documents. 4) Verifying original documents once again. 5) Collecting documents to be submitted, issuing feedback form, and Exiting. After visiting passport office, within three weeks the police station of the area of applicant's residence calls the applicants. Applicants need to visit the police station along with two persons whose details the applicants have given at the time of making application. After police verification, the passport reaches to applicant's given address via India post service.

The passport in India is far better when it is online now. But there is always a scope for improvement. To further improve passport service, limitations of present process and suggestions for improvement are discussed to enhance citizen service experience in the next section.

At present, the passport portal allows to apply at the most three applications under a single user Id. Suppose when an applicant is applying for self and for three family members (wife and two minors, say for example), the applicant needs to create two user ids (same password is allowed) and schedule two different sets of appointment to visit a passport center.

When an applicant applies for four applications, there would be a gap between appointment time received for initial three family members and the time received for fourth family member. At passport center, entry to applicants is granted as per appointment time. There, three family members will be allowed to enter passport center at say 12:45 and fourth family will not be allowed before, say 15:45. At least six applications should be allowed to make under a single user id– assuming a family of self, spouse, two children, father, and mother. The better solution to this is to process passport applications under two categories – 1) Single/Sole Application, and 2) Family Application (couple/family). Applicants under second category should be allowed to apply under single User Id. They should be allowed to produce only one set of photocopy of address proof, photo Id proof, and marriage certificate. They should be allowed to process together at counters for document verifications. On the passport portal, Registered Rent Agreement (for a period of more than one year) is mentioned under a valid document as a proof of address for passport application [26]. In India, in most of the cities the rent agreement (Leave & License agreement between house owner and tenant) is made for the tenure of eleven months, generally [27]. Even if the applicant produces rent agreements with last two consecutive tenures, in the passport centers—such as at Vijay Char rasta center, Ahmedabad, India—rent agreements are not accepted as valid address proof most of the time. Though the applicant's employment letter or applicant's last twelve-month bank statement (public sector) or passbook with entries of last twelve month's transactions are accepted as address proof. Again, in order to open an account with a public sector bank, valid address proof such as rent agreement is required to produce at bank.

The solution to this problem is to accept notarized rent agreement of last eleven month's tenure as a valid address proof. Applicants who have relocated to other cities and those applicants whose all the address proofs have their city of birth mentioned, would need to rely on rent agreement only.

IV. CONCLUSION

E-governance is needed but its acceptance by a wide base of citizen is necessary. At present government in India has been trying to bring almost all the citizen services on online platform but still there is a scope for improvement. This improvement is required to provide citizen-friendly i.e. convenient, hassle free, and time saving processes with a focus on environment-friendly and cost effective way of service delivery. Selected two citizen services viz. railway ticket booking and passport services are well managed at present. While corporate manage bringing technological advantages in e-governance projects, government should focus on providing best possible citizen experience of using the e-governance portals such as www.irctc.co.in and passportindia.gov.in. www.irctc.co.in is widely used website of Indian Railways but it does not enjoy the monopoly in e-ticketing industry. There are private players' websites competing with www.irctc.co.in in the online railway ticket booking industry. Therefore, it is need of the hour to improve customers' online ticketing

experience on www.irctc.co.in in order to make existing customers revisit this website and to attract new users to the website. www.irctc.co.in is very well designed and informative website, which is also a user friendly one. Nevertheless, as far as customer convenience and satisfaction is concerned, continuous improvement is necessary. The same is applicable to passportindia.gov.in. Though compared to interface related improvement, more policy changes are required in e-passport services and its portal.

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