

Digital Locker: A Study on the Paperless Future

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Abstract

The government plans a major expansion of the Digital Locker project to push its agenda of a paperless administration. The Digital Locker is an online repository of certificates and important documents such as driving licences and Aadhaar numbers that can be authenticated in real time. The facility is being used by about 9 million people. The ministry of electronics and IT is now on a drive to get more government departments and states to ensure that certificates issued by them are sent directly to accounts in the repository, according to a top official.

Launched in July 2016, so far over 197 crore documents have been placed in the online facility, also known as DigiLocker. Recently, the results of the Central Board of Secondary Education exams and the National Eligibility cum Entrance Test for medical and dental courses were sent directly to the Digital Locker. The Digital Revolution refers to the advancement of technology from analog electronic and mechanical devices to the digital technology available today. The era started to during the 1980s and is ongoing. The Digital Revolution also marks the beginning of the Information Era. The Digital Revolution is called as the Third Industrial Revolution. The paper aims to present about digital locker and its objectives, creating a digital locker, components, stakeholders and progress.

Keywords: *Digital Locker, Paperless Future*

Introduction

Digital revolution is the backbone of economic, technological, and social prosperity after the industrial revolution. It is driven by high-speed Internet connectivity and innovative and services. The medium of communication has changed rapidly and mobile communication has become an inevitable part of life. The internet users rose as mobile devices enabled easy and faster connectivity. Instant messengers and chat rooms replaced the voice communication while e-commerce is bringing a paradigm shift in the way people shop. We are now getting into the era of Internet of Things and Augmented Reality. New technologies based on mobile connectivity, social media, cloud computing and big data are leading the way, driving efficiency and productivity. Indian government would be spending around \$18 billion for digital revolution in the country. The government and private organizations by focusing their efforts on extending the digital technologies will enable equitable and inclusive growth of the rural and remote communities as well. According to the UNESCO, "The digital revolution

has fundamentally altered the way in which cultural goods and services are produced, distributed and accessed. Indeed, the accelerated expansion of social networks and user generated content (UGC), the explosion of data created by cloud computing and the proliferation of connected multimedia devices-smart phones, tablets, phablets, e-readers ' in the hands of the users have had a huge impact on the cultural scene, in both the global North and South. Technological changes have led to the emergence of new players and new logics. Digital India is a programme started by government of India to provide online services or making the country digitally empowered. Its main components are (a) evolution of safe and secure digital infrastructure (b) providing government services electronically(c) spreading digital knowledge across the globe. Digital locker is the most important part of digital India programme (petare et al., 2015).Prime minister Sh. NarinderModi launched this programme on July 1, 2015. Its key purpose is to hold mark sheet, PAN card, passport etc. in digital format. It saves time and energy and also reduces the chances of losing the important documents. Presently, Indian residents will use 10MB storage space increased to 1GB. Currently, the top issuers of Digital Locker are the Unique Identification Authority of India, which administers the Aadhaar project, the ministry of road transport and highways, which issues driving licences and vehicle registration certificates, and the ministry of petroleum, among others. States such as Uttar Pradesh, Himachal Pradesh and Madhya Pradesh have also enabled filing of birth, income and caste certificates directly into Digi Locker accounts. "A Digital Locker enables users to have all their legal documents in a digitized format that is stored online and can be accessed from any part of the country."

Literature Review

Barati and Garg (2016) empirically examine the significance of Digital locker in Indian context and try to explore the determinants such as perceived ease of use, social influence, variety of service and perceived risk and their impact on digital locker utility for citizens of India. They use convenience sampling method and found that Perceived ease of use, variety of services have a positive significant influence on the usage of digital locker while Perceived risk and Social influence has less significant influence on digital consumer .

Digital Locker is one of the key initiatives under the Digital India Programme. This was released by the Department of Electronics and Information Technology (DeitY), Govt. of India in February 2015 to provide a secure dedicated personal electronic space for storing the documents of resident Indian citizens. The storage space can be utilized for storing personal documents like University certificates, PAN cards, voter id cards, etc. There is also an associated facility for e-signing documents. The service is intended to minimize the use of physical documents and to provide authenticity of the e-documents. It will also provide secure access to Govt. issued documents. The aim of Digital Locker is minimizing the usage of physical documents and enables sharing of e-documents across agencies. With the help of this Paper, the sharing of the e-documents will be done through registered repositories thereby ensuring the authenticity of the documents online. Residents can also upload their own electronic documents and digitally sign them using the e-sign facility. These digitally signed documents can be shared with Government organizations or other entities.

District collector Balakiran states that "Digital locker scheme being launched by the Indian Prime Minister Sh.Narinder Modi would help the citizen to secure their e-documents and to

share in the uniform resource identifier to various departments where a copy is to be produced". Gulati and Verma (2016) reports that "Digital locker scheme launched under digital India campaign is provide useful to the people of India to keep their important documents such as PAN card , Aadhaar card etc safe in digital format". Petare et al., 2015 reported that "Digital Locker will deliver safe access to Government issued papers. It uses authenticity services provided by Aadhaar. Digital Locker will reduce the practice of using physical documents by use of the electronic documents. It is easy to validate the authenticity of these documents as they will be issued directly by the registered issuers. Digital Locker will minimize administrative overhead of Government sector and agencies created due to paper work. It became easy for the citizens to get services by saving time and energy as their official papers will be available easily at anytime, anywhere and can be shared electronically".

Digital Locker System

Digi Locker is a key initiative under Digital India. This programme is targeted at paperless governance and is a platform for issuance and verification of documents and certificates digitally. A dedicated cloud storage space is given to all those who register for the Digital Locker account. To make it an easy process, this storage is linked to their Aadhar (UIDAI) number. Organizations that are registered with Digital Locker can push electronic copies of documents and certificates (e.g. driving license, Voter ID, School certificates) directly into the citizens' lockers. As per the official website, there are 39, 64, 008 registered users and 50, 47, 204 uploaded documents. Digital India has been introduced to ensure smooth implementation of e "governance in the country and transform the entire ecosystem of public services through the use of information technology. There is no better way to promote inclusive growth other than through the empowerment of citizens.

This document offers a standardized mechanism to issue government documents to Aadhaar holders in electronic and printable formats, store them, and make it shareable with various agencies. This allows government issued documents to be moved to electronic form and make it available for real-time access in a set of "digital repositories". This solution also offers multiple digital locker providers and access gateways to co-exist to enable healthy ecosystem play. Usage of Aadhaar ensures that document owner is strongly authenticable eliminating document frauds. In addition to supporting new documents to be made electronic and online accessible, this solution also offers a way to digitize older documents. Proposal also offers a mechanism by which "digital lockers" can be offered by service providers and suggestion to provide "a default digital locker" portal and mobile application to residents to view a consolidated list of documents using their Aadhaar number. Digital locker or DIGILocker is an important initiative of Department of Electronics & Information Technology (DEITY) under Ministry of Communications & IT, Government of India. This initiative is in support of the Digital India programme to reduce unnecessary wastage of paper, time and human efforts. This is the centralised system to store and use the documents online to reduce the wastage of time, paper and manpower. Digital Locker provides a secured online space to store important documents in digital format.

Objectives of Digital Locker

- Digitally empower the citizens

- Minimise physical documents
- Authentic documentation to minimise fraud and forgery
- Easy access through web portal and mobile applications
- Reduce government administrative overheads
- Anytime and anywhere access of e-lockers
- Authentic access to resident data

Features of DIGILocker

Digital locker has many useful features for online storage, digitally signing and online sharing of important e-documents. Digital locker has safety and security features for online documents similar to safe locker or folder locker for physical documents.

- **Storage Space**

Digital Locker provides 10MB free online storage to secure important documents and certificates in softcopy in different formats that can be easily shared through e-mail.

- **Uniform Resource Identifier (URI)**

This is the feature through which the link or URLs of the important documents and certificates from various government departments can be stored digitally.

- **The E-sign Facility**

This is the facility provided by the locker through which user can sign the copies of important documents electronically and send them across government and other organisations.

- **Adhaar Linkage**

In order to apply for digital locker, a person should possess a valid Aadhar Card Number and mobile number that is registered with the Aadhar Card.

- **Allowed formats**

Digital Locker allows users to store the document in pdf, jpg, jpeg, png, bmp and gif format within the limit of 1 MB per document.

Application Procedure of Digital Locker

To avail the Digital Locker facility, you have to sign up on the official website for Digital Locker. The following steps are to be followed for availing Digilocker.

Step1. Log on to official website for the Digital Locker, <https://digitallocker.gov.in>

Step2. Register or Sign Up

Step3. Enter 12 Digit Adhaar Card number. Once you do this, you will be given two options to move further i.e. Use One Time Password (OTP) or Use Fingerprint. You may choose any one of the two options as per your preference.

- Use One Time Password (OTP) - If you choose OTP option then you will get a text message for OTP. You have to enter the OTP at the prescribed place and click on validate OTP

button. You can generate Username and Password once the OTP is accepted.

- Use Fingerprint - You need to have a biometric device to scan the fingerprint. If your mobile number is not registered, then you can authenticate using the fingerprint. Fingerprint will be captured and matched with the fingerprint recorded at the time of Aadhar registration. You will be asked to generate username and password after validation of the fingerprint.

Step4. Create Your Username and Password in prescribed manner

Step5. First time login to the official website

With these simple steps, you have your DigiLocker Account. You can login to your digital locker account in three different ways.

- Using Aadhar Number and OTP.
- Using Username and Password.
- Using Facebook or Google ID validation.

Working of Digital Locker

There are many government organizations and departments such as Income Tax and CBSE that issue documents and certificates in digital format to individuals, firms and corporate entities. While availing services from various government and private organizations, these documents and certificates are to be submitted. User of the digital locker can share the stored documents with the respective departments and government agencies. Users of the Digital Locker can upload, view, electronically sign and share the digital documents using the username and password provided while signing up.

Stakeholders of Digital Locker

There are three categories of stakeholders involved in Digital Locker. Here is a discussion on each of them.

- **Issuer**

The entities issuing electronic documents are called issuers. Government departments, government agencies, trust and corporate entities are the major issuers of the documents and certificates in electronic format. They make the standard format of the document and make the softcopy of the documents available to other entities.

- **Requester**

The government agencies asking for the electronic documents are called requesters. The electronic documents and certificates need to be submitted to various government departments and agencies such as Central Board of Direct Taxes (CBDT), Central Board of Excise and Customs (CBEC), Universities, Regional Transport Office and Passport Office. They need the digital copy of the documents for various procedures.

- **Residents**

An individual that avails the Digital Locker service is known as a resident. All the residents of India who possess a valid Aadhar Card No. may avail the Digital Locker.

Components of Digital Locker

There are three components in Digital Locker facility.

- **Repository**

The storage space where the electronic documents are stored in the standard Application Program Interface (API) is called repository. The main functions of the repository include collection of digital documents and keeping them in standard API for authentic real-time access.

- **Access Gateways**

This is the mechanism through which Digital Locker Users and requester agencies may get real time access to electronic documents. Through access gateways, the documents may be availed in uniform way across repositories.

- **Digital Locker Portal**

Digital Locker Portal is the directory of the registered issuers, gateways, repositories, guidelines, policies and forms. Digital locker portal can be considered as a dashboard that provides real time transaction volumes of the total electronic documents accessed.

- **Digital India Vision**

The Digital India programme cleared by the cabinet in August 2014 seeks to 'prepare India for a knowledge future'. There are three key objectives; (a) to create a digital infrastructure for online digital identity, mobile phone and a bank account, (b) to service and govern a real-time online financial transaction platform, and (c) to digitize all documents and records of the residents and make them available on a real-time basis. This vision of electronic resident document system should address two key aspects:

- Minimizing usage of physical documents (no scan/photocopies, no physical papers) via electronic formats and sharing across agencies
 - Eliminating usage of fake documents (no fake govt/degree certificates, no fake usage of someone else's certificate) via a mechanism to verify "authenticity" of government issued documents online.
- " Provide a default "digital locker" for people to store and access Government issued documents in the Government cloud if they wish to subscribe.

Characteristics of Electronic Documents

To meet the key goals and the solution objectives, architecture should ensure that all government issued "electronic documents" stored in digital repositories are:

- **Machine Readable** - documents in electronic format should be machine readable eliminating human workflow for viewing and verifying the documents. Document structure should adhere to common XML structure for application usage and interoperability. a. Documents should have a common set of "meta" attributes such as "issuer agency code", "document ID", "issue date", "Aadhaar number(s) of the individuals to who the document is issued to", "expiry if any" along with document type (domain) specific sub data structure (e.g.

school certificates will have different data elements compared to marriage/ caste certificates).

- **Printable** - all electronic documents should have a printable format "attached" to it allowing continued printing of certificates for individuals and for backward compatibility with existing paper based systems.
- **Shareable** - residents can easily share the documents with other agencies/ departments just by proving the unique document URI without having to share photocopies, scan copies, document uploads, etc. Since all one needs is a small URI, such sharing can easily be done even on feature phones even via SMS and text based systems.
- **Tamper Evident** - documents in electronic form should be digitally signed by the issuing department/agency which allows any tampering to be detected electronically. This also allows agencies to be compliant to IT Act.
- **Verifiable** - most importantly, government documents and certificates issued can be verified online for "authenticity" (validating if the document shared by an individual indeed was issued by appropriate authority) eliminating the use of fake documents/certificates. In addition, Aadhaar attached documents/certificates ensure ONLY the owner Aadhaar holder can indeed use the certificate, thus eliminating misuse of someone else's certificates.
- **Secure** - it is critical that documents in the repositories are secure in terms of storage and access. In addition, specific documents (based on type of document) may only be shareable via owner authentication to ensure sharing and access is "authorized" by the document owner.

National Digital Locker Directory, Portal/Mobile Application and Dashboard

DeitY, as the Digital Locker nodal agency would include an Digital Locker directory (providing details on Issuer ID, requestor ID, Gateway ID, etc.) on the national Digital Locker portal. The portal would also provide all Standards published via electronic documents for public access. Following key features must be incorporated within this Digital Locker Directory:

- Provide public access to view the list of Issuers (name, ID, registration date), empanelled repositories (name, URL, date of empanelment, contact details), gateways (name, URL, date of empanelment, contact details), etc.
- Provide repository and gateway empanelment guidelines, application form, and other details.
- Provide link to request Issuer ID - this application must allow new issuers to request a unique ID. This should be a simple electronic workflow to request, approve, and publish new ID.

The Digital Locker directory will play a critical role in ensuring that the e-Documents repositories which are under consideration for on boarding follow a defined work flow to ensure eligibility prior to becoming certified repositories and are listed on the directory. The Digital Locker Directory will serve as a single window for discovery/browsing of various eDocuments repositories, issuers, requesters, gateways, and document types.

Digital Locker Interface

To provide a central view (inbox of sort) of all his/her documents and storing self-signed legacy documents, it is recommended that this "digital locker" feature is added via the National Digital Locker portal along with a mobile application.

Digital locker may provide the following features:

- Ability for residents to register for digital locker service with optional Aadhaar verification.
 - a. Also, a mechanism to "opt-out" or "de-register" should be provided if residents do not want to the digital locker.
- Ability to "download" a "copy" of the e-document from appropriate repository to this digital locker by providing URI for backup and portability.
- Ability to "upload" a self-signed or notary signed legacy certificate/document into the digital locker.
 - a. A limited storage may be provided for storing such legacy documents.
 - b. A mechanism to manage (tags them, delete them, etc) will have to be provided for completeness.
- Additional features such as "share" (either URI or e-document) can be added as a valueadded feature. This feature can allow residents to share with departments/agencies who may not have full provisions to automatically access via gateways. This feature also allows legacy documents to be shared.
 - a. Features such as "document sets" can be created and shared (like shared folder)
 - b. Sharing can be one time (via unique secure URL) or using push authentication via mobile application, OTP, etc). Sharing can be at document or document sets level.
- Authentication, auditing, etc should be built-in to ensure security of the digital locker.
- Digital locker must provide a mechanism to "subscribe" to "access notifications" (if any entity accesses a document within a repository, digital locker software can pull the anonymized audit and provide a notification scheme).
- Ability to request Issuers to "push" document copy or just URI to resident's digital locker ID (e.g., user-id@mygov.in) via SMTP protocol.

Conclusion

Benefits of Digital Locker Digital Locker facility will help citizens to digitally store their important documents like PAN card, passport, mark sheets and degree certificates. National Optical Fiber Network (NOFN) proposes seven lakh kilometers of optical fiber to be laid to connect 250-gram panchayats in three years. Public Wi-Fi spots will be provided around the clusters after that and all villages will be provided with internet connectivity. Digital India initiative as, "India would become a very powerful digitally connected world. This would lead to a good architecture for electronic delivery service. The entire contour of India is change. India is sitting at the cusp of a big digital revolution. "Digital Locker is a programme launched by government of India under the Digital India to place important documents in safe custody. This programme will bring more transparency, authenticity and eradication of corruption. This is a refreshing move towards making India 'a digitized economy' and thereby ensuring broadband connectivity in the rural areas. Thus, for the program to be a success, it becomes

imperative that there is absolute coordination between the departments and utmost commitment on the part of ministries".

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