

VoteltRight: Digital Empowerment of Citizens

Chaitali Khandekar

K. J. Somaiya College of Engineering
84/701, Kalpavruksha,
Vasant Vihar,
Thane (W), 400610.

Namrata Devadiga

K. J. Somaiya College of Engineering
A-30/3 Maitri Park, Chembur,
Mumbai, 400071.

ABSTRACT

India is a proven democracy but often it is a result of uninformed and uneducated choices. Right to information has been one of our basic right but we fail to execute it when we need it the most that is when we elect our future leaders [1]. With Digital India the dream to make our country a digitally empowered nation is not very far-fetched [2]. Here we propose a system that stays true to the vision of e-Governance and ensures a collaborative digital platform for facilitating people to select right candidates during elections through the use of information technology available and empower participative governance [11].

General Terms

Cloud Computing

Keywords

Application of Cloud computing, Digital India, India infrastructure

1. INTRODUCTION

India being a democratic nation gives the power to the citizen to choose their body of governance. However what is missing right now is platform to know the candidates of the elections. Many a times, we stay anonymous to the portfolio of the candidate standing for the elections. Every right choice even at the root level (e.g. civic body elections) results in the progress of our country and every wrong choice is an obstacle in this progress. Hence access to information about the candidates leads the citizen to an informed choice.

With the growth of internet, “access” to information is not an issue however the availability of resources from different entities at one place is what we propose in this system [3]. Our system will provide the gateway to access all the information available on different cloud storages in the form of an interface which is citizen-friendly. Our system characterizes important aspects of cloud computing and details out the user interface and its interaction with the servers and the data storage systems of cloud.

2. EXISTING SYSTEM

Elections in India have long been an affair of voting for the person who is more seen, or voting for the person according to the political party affiliation. The current system does not define a way to acquire information about the candidates of the election. It requires us to go and ask for it in different entities and through time consuming and tedious tasks. What has been missing is a resource which satisfies all the questions about the contestants of the future government.

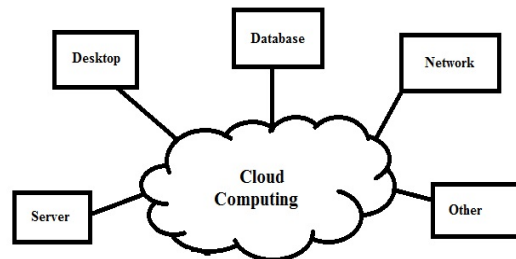


Fig 2.01

Cloud computing is a tool for enabling easy-to-access, on-demand network ingress to a shared pool of configurable computing resources (e.g., networks, servers, storage, applications, and services) that can be provided with rapid elasticity and on self-service basis [4] (Refer fig. 2.01).

Private cloud infrastructure is a provision for absolute use by a single organization consisting of multiple users. The organization, a third party or a combination of both can use, manage as well as operate a private cloud [12].

DigiLocker is service launched by the Government of India in February 2015 under the Digital India initiative. It provides an Indian citizen a dedicated space for information storage electronically which is dually authenticated using the Aadhar card number and a randomly generated number [11]. The main stakeholders of DigiLocker include the residents who can store and share their documents, the issuers who can issue documents and certificates to the residents and the requestors who can request secure access to the particular e-document stored in the repository [8]. (Refer fig. 2.02).

3. MOTIVATION

Cloud computing has also made it possible for any kind of information to be stored and accessed as per need. DigiLocker is a product of Digital India which has made storing government documents in a secured electronic fashion possible [11]. This has opened doors to immense possibilities. However these possibilities are not completely exploited. One of the major reason for this is that some of this information that should be made publicly accessible and available can be requested only by registered organizations. A contest for government requires voters to make a fully informed choice and this can be made possible by digitally empowering them with everything one needs to know about their candidates.

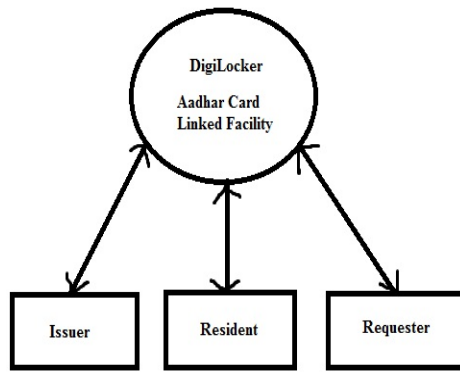


Fig 2.02 : Stakeholders

DigiLocker and similar counterparts for different organizations can be made. For example, a cloud computing facility could be made for all medical records, police records etc. In the current system these facilities are absent.

The motivation of our system is to use the benefits of the already done research and models on cloud computing and the already existing system of DigiLocker to provide all the necessary information about the candidates contesting for the elections available at one click to every citizen of India and thus digitally empower every citizen to make the right choice at the root level [15].

4. ARCHITECTURE

Cloud computing and its Indian implementation DigiLocker solve the problems of storage and management physical documents and also makes the verification and authentication for easy for organizations [8]. Our system proposes that these components should be intertwined to digitally empower masses by providing access to all necessary information pertaining to individuals who are candidates for the government elections. The proposed system makes use of the already efficient DigiLocker for verifying a candidates personal documents, education certificates etc. and also adds on three other interfaces in terms of cloud storage for police records and aadhar card numbers of residents and an input providing entity in the form of election commission [9]. (Refer figure 4.01).

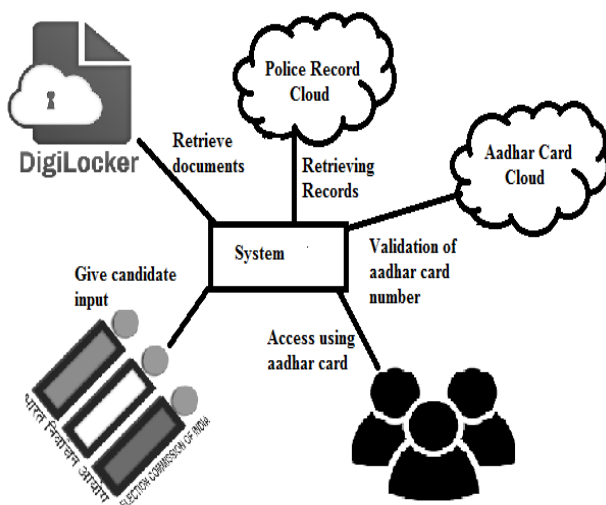


Fig 4.01

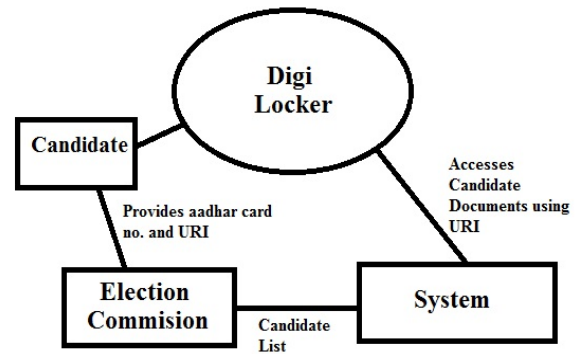


Fig 4.02 : DigiLocker

4.1 DigiLocker

The government formed dedicated electronic storage is used to obtain information regarding the candidate by creating a gateway to his/her digital locker [14]. The gateway is created by the system once it receives the aadhar card numbers and URI (Uniform Resource Identifier) of the candidates contesting for the elections [6]. These numbers are then used to create dedicated links respectively and obtain the documents to be made available to the general public. Here the system is registered as a requestor and obtains the documents from the candidates DigiLocker profile using the Aadhar card number and URI [5]. (Refer 4.02)

4.2 Cloud Storage for Police Records

A candidate standing for elections should ethically be free of any previous criminal records. This information is never accessible to the voters. Hence, in our system we have assumed that the police records pertaining to every aadhar card number are maintained in dedicated cloud storage by the police force. This cloud is accessed by the system and matched with the aadhar card numbers of the candidates. Here the system accesses the police server and relevant information is then obtained to be displayed publicly in the system. This information which was earlier not available to the voters is now easily accessible on one click.

4.3 Election Commission

Election commission is an entity which plays a very important role in the system. Its involvement however for the proposed system is limited to providing the candidate list of every region along with the aadhar card numbers, URI numbers to their DigiLocker and the political parties they are linked to if any. Hence, this list is one primary input to the system which enables all the further proceedings in terms of obtaining information about the candidates standing for election.

4.4 Aadhar Card Database on Cloud

In the proposed system, authentication of citizens trying to access data about candidates in their area is done using the aadhar cards issued by the government. Here, the database is not duplicated to be run specific to the system, instead it also uses cloud computing to authenticate the citizen over cloud by using the government existing aadhar card database. This allows the system to use the pre-existing databases which will be regularly updated without having to create one if its own [12]. Our system here is again making an assumption of the existence of the database of aadhar card numbers by the government which will be accessible to our system for primary authentication of the user of the system.

5. WORKING OF SYSTEM

In the proposed system, automation of obtaining information is done by creating direct access paths to the respective clouds, merging their results together and displaying them. Hence, once the candidate list is inputted to the system, the next set of inputs are generated using web services/web mashups that which access the DigiLocker server and the police records server and get documents respective to every candidate and sort them together. It works as a query where in all the records matching to an identifier are computed from different databases (stored here on cloud) and are displayed together. The system can be seen so as to generate a view of every candidate and display it to the user. (Refer figure 5.01)

The system is made accessible to the citizens by using a user interface typically in the form of a website. A citizen willing to access information regarding the various contestants of the elections, can access the system using the aadhar card as the primary level of authentication.

Once the user has accessed the system they can now lookup the candidates in their area as per the list provided by the election commission for the area in which the aadhar card is registered. Information about a particular candidate can be accessed by clicking on the name of that candidate which is a link to the page containing all details of that candidate. On selection all the documents such as the identity proof, address proof, education certificates, police records etc. are displayed by the system. The documents related to a candidate are accessed using URI of the candidate [9]. The system accesses DigiLocker for these documents [7]. For the police records the existing database on cloud is accessed and the necessary information is retrieved using the aadhar card number of the candidate.

Our system aims to use the profits of the existing DigiLocker and advancements of cloud computing to create a distributed processing system which enables a user to exercise his right to information [10] thus enabling him to make an educated choice for future of our government. The ease of availability of information of every contesting candidate at one place is the vision of the proposed system so that not only the right to information of every citizen is promoted but also every Indian citizen is made digitally empowered [1].

6. CONCLUSION

Making India transform digitally, is to realize that IT (Indian Talent) plus IT (Information Technology) is equal to IT (India Tomorrow). This movement for digital empowerment can lead to the change at the most fundamental level by making the fundamental right to information an achievable goal in terms of choosing a right representative for one self.

A dedicated server to compute all the relevant data pertaining to an individual can be made possible by interfacing it with several inputs in the form of the police records, the personal identity and education proofs, medical records etc. It's a distributed processing system with cloud computing as its backbone [13]. It is an easy to implement system since it derives its simplicity from database management systems. Like DBMS, here, every candidate about whom we want to acquire information, becomes a query which returns results from multiple servers and multiple cloud storages. Every candidate is a view in the system generated as a result of these queries.

With the advancement in cloud computing and the development of DigiLocker, the ease of developing this system will be high. If developed this system will be very useful for every citizen of India by providing them an easy access for information which they want access about a candidate contesting for elections in their area and will also be a good platform for every candidate to showcase their ability and prove their eligibility to every voter in their constituency without any malpractice.

The main focus of Digital India was to make the workflow of the Government more transparent and automated. The proposed system not only automates the right to information for the elections but also helps in transforming governance by creating more awareness digitally.

Digital Empowerment of Citizens is a vision of Digital India which aimed to satisfy needs of e-governance, e-education etc.[11] E-governance in the form of using all information resources based in cloud storage and their usage to create a platform for acquiring information about the aspiring governance is done in the proposed system – VoteItRight.

In the future scope of things, we see this system to be extendible to any system that needs citizen credentials verified. It can be used by any and every system as the go to system for everything at one place.

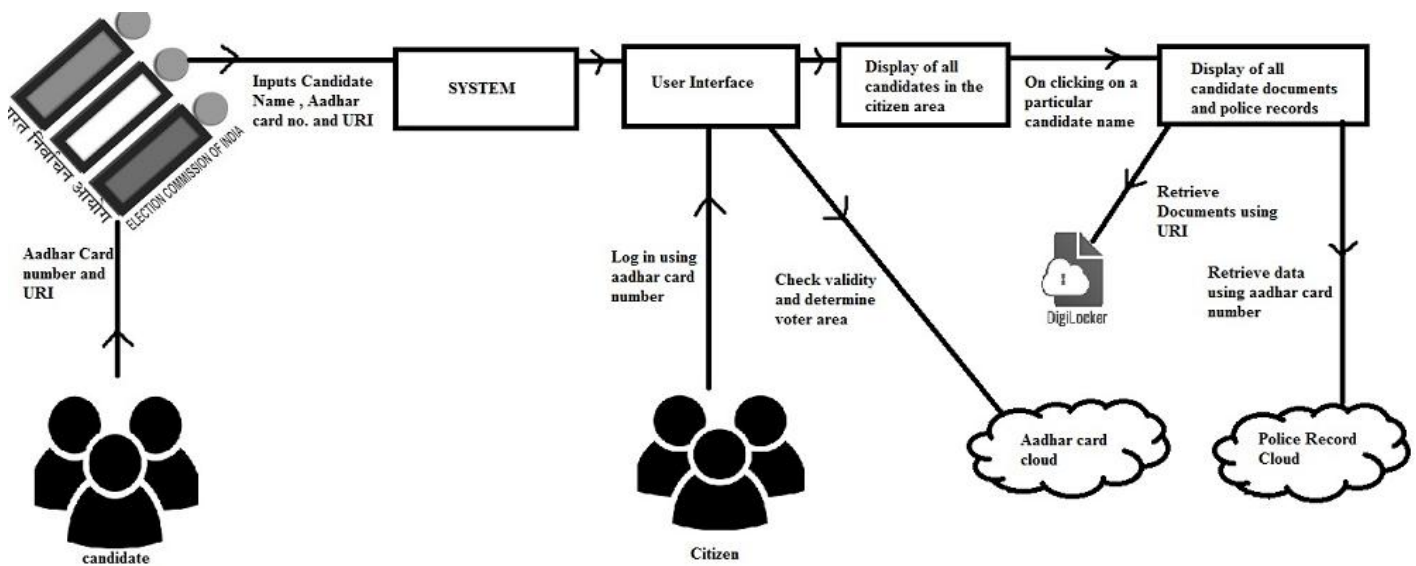


Fig 5.01

Thus we would like to conclude that this system will be a very well founded and well-grounded step for digital empowerment of India.

7. ACKNOWLEDGMENTS

Our thanks to the Mr. Prasanna Shete, Associate professor of our University for your guidance and your prompt response to every query we ever had.

8. REFERENCES

- [1] P. N. Thomas (2012), Digital India, understanding information, communication and change [online], Available: <http://espace.library.uq.edu.au/view/UQ:277812> –.
- [2] M. S. Kedar (2015), Digital India New way of Innovating India Digitally [online], Available: <http://irjms.in/sites/irjms/index.php/files/article/view/29> -
- [3] T. J. Kumar (September 20, 2015), Internet and its impact on Society [online], Available: <http://www.indianscholar.co.in/downloads/11-dr.-t.-jeevan-kumar.pdf> -.
- [4] Pmell, T Grance (2011), The NIST Definition of Cloud. [online]. Available : <http://faculty.winthrop.edu/domanm/csci411/Handouts/NIST.pdf>
- [5] TNN (Jun 29, 2015), Times Of India, Available : <http://timesofindia.indiatimes.com/tech/how-to/Government-of-Indias-DigiLocker-How-it-works/articleshow/47860326.cms> - Government of India's DigiLocker and how it works
- [6] Nandagopal Rajan (Jun 25, 2015), Indian Express, Available : <http://indianexpress.com/article/technology/technology-others/meaning-digital-locker/> - This is how Narendra Modi's DigiLocker works.
- [7] Sriram Sharma (Jun 26, 2015), Huffington Post, Available : http://www.huffingtonpost.in/2015/06/26/is-digilocker-safe_n_7621736.html - Should you trust the DigiLocker?
- [8] <https://digilocker.gov.in/>
- [9] <http://www.relakhs.com/>
- [10] www.digitallockers.in
- [11] <http://vikaspedia.in/e-governance/digital-india/digilocker>
- [12] <http://www.thoughtsoncloud.com/2014/02/how-does-cloud-computing-work/>
- [13] <http://computer.howstuffworks.com/cloud-computing/cloud-computing.htm>
- [14] <http://indianexpress.com/article/india/india-others/centres-digital-locker-to-empower-citizens/>