

Online Identity Verification

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Abstract— The idea of the online identity verification came from the thread that is evolving all over the world and basically in our own country India. Many other nations have come over it by developing a platform. The Internet was once a more anonymous space. People hid their real identities, coming up with unique and sometimes bizarre pseudonyms to represent themselves on specific websites¹. Everybody have come across people on social networks that appear to be fake. But how can one verify that they are real. There is no online platform in India to securely verifying the identity of person whom they met online. The boundaries between social and commercial websites are blurring. Exposing more personal information about ourselves and revealing our true identities online opens up great opportunities and risks. Organizations must navigate these for their users. So, identifying people online – and confirming that information against their ‘real’ selves – is becoming increasingly important.

Keywords— Online identity verification, Security, Social Network, Trust, Fake identity, Risk.

I. INTRODUCTION

Aadhaar is a 12-digit unique identity number issued to all Indian residents based on their demographic and biometric data. The data is collected by the, a statutory authority established in January 2009 by the Government of India. Aadhaar is the world's largest biometric ID system, with over 1.19 billion enrolled members as of 30 November 2017, representing over 99% of Indians. World Bank Chief Economist Paul Romer described Aadhaar as "the most sophisticated ID program in the world"². Aadhaar was build with a vision To empower residents of India with a unique identity and a digital platform to authenticate anytime, anywhere, and the Aadhaar was started with the mission¹¹:

1. To provide for good governance, efficient, transparent and targeted delivery of subsidies, benefits and services, the expenditure for which is incurred from the Consolidated Fund of India, to individuals residing in India through assigning of unique identity numbers.
 2. To develop policy, procedure and system for issuing Aadhaar number to individuals, who request for same by submitting their demographic information and biometric information by undergoing process of enrolment.
 3. To develop policy, procedure and systems for Aadhaar holders for updating and authenticating their digital identity.
- Ensure availability, scalability and resilience of the technology infrastructure.
4. Build a long term sustainable organization to carry forward the vision and values of the UIDAI.
 5. To ensure security and confidentiality of identity information and authentication records of individuals.
 6. To ensure compliance of Aadhaar Act by all individual and agencies in letter and spirit.
 7. To make regulations & rules consistent with the Aadhaar Act, for carrying out the provisions of the Aadhaar Act.

Social networking sites are online platforms that people use to build social networks or social relations with other people who share similar personal or career interests, activities, backgrounds or real-life connections. The variety of stand-alone and built-in social networking services currently available online introduces challenges of definition. Social networking services are Internet-based applications. Social networking services are interactive Web 2.0 Internet-based applications. User-generated content such as user-submitted digital photos, text posts, "tagging", online comments, and diary-style "web logs" blogs, is the lifeblood of the organization. Users create service-specific profiles for the site or app that are designed and maintained by the Organization. It facilitates the development of social networks online by connecting a user's profile with those of other individuals or groups.

II. NEED OF VERIFICATION

Fake profiles on social media are a problem most users face. Fake profiles of celebrities are rampant, as they also have profiles with fake names and details. These fake profiles are often used to commit cybercrime anonymously or with an untraceable identity. Fake profile can easily get to know about information and can cause us great amount of loss specially getting access to our bank accounts. It's definitely alarming that there has been a 58% rise in such cybercrimes in the last one year³. The cases of Cyber extortion have also increased owing to

excessive personal data available in social networking profiles, and this data is accessible to fake profiles in your friend list. However, in most cases the purpose of making a fake social media profile has a hidden criminal intention of the perpetrator. It is either means to commit the cyber crimes of cyber stalking, cyber defamation.

III. NEED FOR E-KYC

The Reserve Bank of India introduced KYC guidelines for all banks in 2002. In 2004, RBI directed all banks to ensure that they are fully compliant with the KYC provisions before December 31, 2005^[4]. Know your customer is the process of a business identifying and verifying the identity of its clients. The issue arises when the KYC forms are to be filled separately for each and every bank account. With the help of the e-KYC work load for verifying and identifying will be reduced to half. Banks, insurers and export creditors are increasingly demanding that customers provide detailed anti-corruption due diligence information. In the era of digital India there is a need to physically reach to a place and fill the KYC forms, this is not only a wastage of time but also a wastage of valuable resources like paper, money and entering that huge amount of data into the systems to update the user information in the bank server.

IV. READY FOR CHANGE

The purpose of providing demographics information in the QR code is to enable its use in scanning machines. There are almost 11 million Aadhaar cards issued by the UIDAI till January 2018 that means the concept of Aadhaar is not new to India now. Figure 1 shows trends of generation of Aadhaars over last one year, February 2017 to January 2018. The government needs the change in their service for the people of the nation. The idea of such concept was developed so that people make a step towards digital verification. A better option exists for information retrieval via the eKYC API. But that requires use of a biometric device. The QR code contained information is therefore one of convenience when a person is carrying the card and the other party does not have a biometric device, but is happy with just the demographics information contained in the card. It wasn't meant to be scanned by you. The XML format is extremely useful when you have to feed data into many different programs by scanning it from any third party scanner and by passing that data into the XML parser and can be easily read by any application^[5]. That is the purpose of this QR code, to quickly enter the details of the card holder into the scanner's database/software by encoding the data in a format that is uniform across platforms. This XML encoded data is issued by the UIDAI and is difficult to counterfeit and with the presence of UIDAI API, It is almost impossible to get through with fake Aadhaar cards on the online verification platform. Enrolment Ecosystem consists of Registrars and Enrolment Agencies. Registrar is an entity authorised or recognized by UIDAI for the purpose of enrolling individuals. Enrolment Agencies are appointed by Registrars and are responsible for collecting demographic and biometric information of individuals during the enrolment process by engaging certified Operators/Supervisors.

In co-ordination with the Registrars, the Enrolment Agencies set up Enrolment Centres, where residents can enrol for Aadhaar. Multiple fingerprint scanners, iris scanners, and cameras used for enrolment are certified by STQC and UIDAI, and all connect to the UIDAI designed standard Application Programming Interface (API). Appointment of multiple registrars, multiple enrolment agencies, and multiple technology providers has created an environment of healthy competition within^[12].

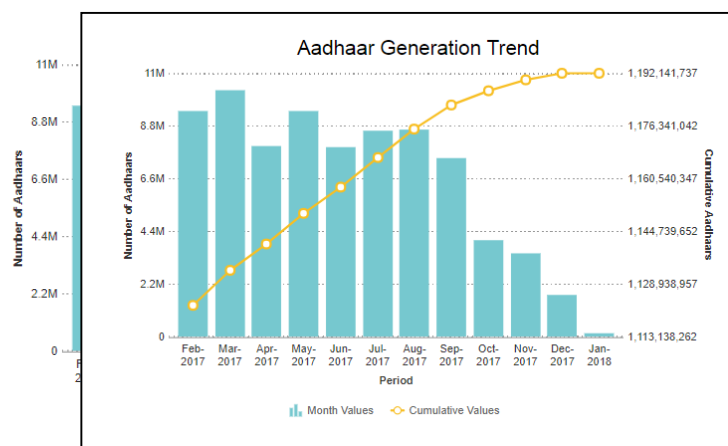


Figure 1 Aadhaar Generation Trend^[8]

V. INDIA VS. WORLD

There are 21 companies across the world trying to solve this problem but none targeted Indian audience. Even in India no one took this issue seriously due to lack of such strong resource like Aadhaar. Even there were many id proofs earlier but there was no online platform of any digital identity option was given by the issuing authority. Therefore it was meaningless to build an online verification platform on those identity proof as it would require a lot more manpower as compared to a digital identity like Aadhaar.

On the other hand, every year \$500 millions are spent by Cooperates worldwide just to know their customers. Majority of companies are U.S. based companies which uses SSN and this is not yet applicable in India. Due to which India is still lacking behind. Even though there are many resources available in India there are still very less number of service that are shifted to e-verification and linking phone number to Aadhaar card is one of them. Aadhaar card will make it possible even in India to establish such strong base for online identity verification.

VI. AUTHENTICATION

Aadhaar authentication means the process wherein Aadhaar Number, along with other attributes, including biometrics, are submitted to the Central Identities Data Repository for its verification on the basis of information or data or documents available with it. UIDAI provides an online service to support this process. Aadhaar authentication service only responds with a “yes/no” and no personal identity information is returned as part of the response. As depicted in the Figure 2, the authentication request is sent to Authentication User Agency^[9] that communicates with Authentication Service Agency^[10] Aadhaar to get the authentication done for the user.

The UIDAI has set up a scalable ecosystem for the purpose of instant authentication of residents. The Aadhaar authentication ecosystem is capable of handling tens of millions of authentications on a daily basis, and can be scaled up further as per the demand. The UIDAI has appointed a number of Authentication Service Agencies (ASAs) and Authentication User Agencies (AUAs) from various Government and non-Government organisations. The UIDAI, in partnership with STQC, has also laid down the technical standards for biometric devices, and certified a number of them.

Since the authentication service is provided online and in real-time, the UIDAI has also established two data centres where authentication and other online services such as e-KYC are deployed in active-active mode to ensure high availability. Banks and payment network operators have embedded Aadhaar authentication into micro-ATMs in order to provide branch-less banking anywhere in the country in a real-time, scalable and interoperable manner^[12]. Number along with certain demographic information such as name, date of birth, etc. helps to provides for simple authentication needs.

Aadhaar authentication uses XML as the data format for input and output. Aadhaar authentication provides a convenient mechanism for all Aadhaar holders to establish their identity. It provides a platform for identity authentication and can be used to deliver services effectively to Aadhaar holders across the country. Features for integrating into an online verification platform are^[7]:

1. **Uniqueness:** This is achieved through the process of demographic and biometric de-duplication. The de-duplication process compares the resident’s demographic and biometric information, collected during the process of enrolment, with the records in the UIDAI database to verify if the resident is already in the database or not. An individual needs to enrol for Aadhaar only once and after de-duplication only one Aadhaar shall be generated. In case, the resident enrolls more than once, the subsequent enrolments will be rejected.

2. **Portability:** Aadhaar gives nationwide portability as it can be authenticated anywhere on-line. This is critical as millions of Indians migrate from one state to another or from rural area to urban centres etc.

3. **Scalable Technology Architecture:** The UID architecture is open and scalable. Resident’s data is stored centrally and authentication can be done online from anywhere in the country. Aadhaar Authentication service is built to handle 100 million authentications a day.

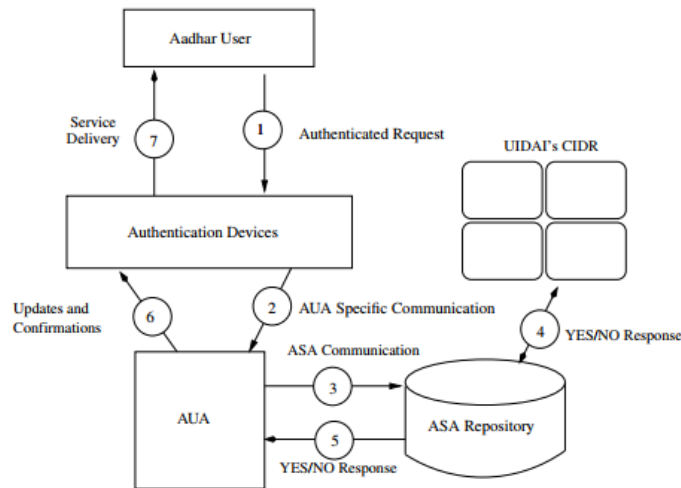


Figure 2 UIDAI Authentication Architecture^[6]

VII. PROPOSED SYSTEM

The proposed system is an android based application that will be used to verify the identity of a user online. The application will be built using the features of Aadhaar and will be using the UIDAI API available online for authentication of the user. A user will be logging in to the application and scanning his Aadhaar's QR code, the demographics read from the QR code and the Aadhaar number will be authenticated from API and if the user is verified, he'll be able to do the following tasks as depicted in Figure 3:

1. Upload verified status from the app to facebook that contains a verified signature from the application.
2. Create a temporary and secure session where two users are allowed to share their demographics temporarily with each other, all data shared will be encrypted and the screenshot service will be blocked during the session.
3. Fill and share eKYC with the companies the user want to. The basic idea is to build a decentralized network for sharing and storing bits of identity securely over a network.

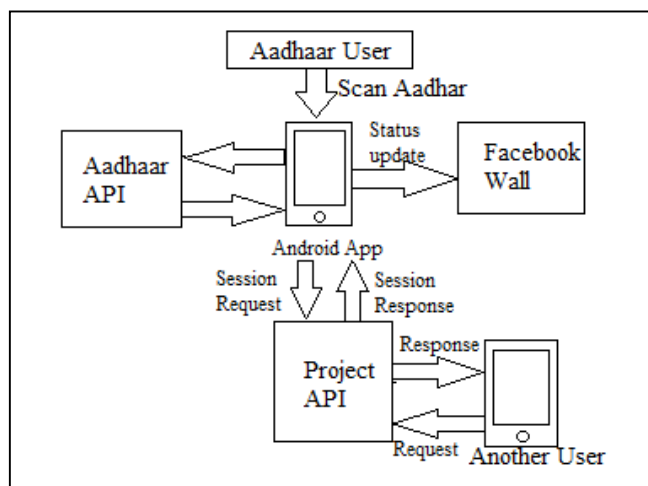


Figure 3 Proposed System Architecture

VIII. FUTURE SCOPE

The proposed system would be in the form of a smart phone application with integrated UIDAI API as well as Facebook SDK to achieve the goals of a complete online identity verification and eKYC platform. The Facebook SDK will help in updating a verified status update from the application itself that will contain a signature of the verifying application, since facebook is one of the most powerfull social networking platform and therefore, the place with highest probability of online frauds. Building a platform integrated with facebook, and creating temporary and secure sessions to create a decentralized platform for sharing identity could turn out to be the basis

of secure and authenticated Indian users on the social networks. Besides this, there will be a certificate of authentication that will be provided to the verified user which can be shared and verified by anyone anywhere without creating any issue to the sensitive and personal information of the user. Being a decentralized platform, the confidential information of the user will be secure with him unless he approves to share it with a specific organization or user.

IX. CONCLUSION

Indian government with the help of UIDAI has taken a step towards digital verification with a vision to provide a digital platform for citizens to get authenticated anytime and anywhere will be supported with the proposed system by building a secure and verified network of authenticated users and reduce the number of cyber frauds marginally. India is now not far behind from other countries having digital identities and platforms to get authenticated.

A. Abbreviations and Acronyms

KYC- Know Your Customer
e-KYC- electronic- Know Your Customer
QR code-Quick Response code
SSN- Social Security Number
UIDAI- Unique Identification Authority of India
API- Application programming interface
SDK- Software Development Kit

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