Security Analysis in Digital India

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ABSTRACT : *Computers and digital equipments have evolved from verities of small and large experiments in the 1940s to productive practical data processing systems in the mid 80s. As now and for rely on these systems to process and store useful and vital data and information, as it come to wonder about their ability to protect valuable data.This paper reviews about the concepts of mobile security in Digital India.*

KEYWORDS: - *Digital India,   Mobile Cyber Security, Encryption, DigiLocker , SecureRandom*

I.   INTRODUCTION

[2]Data security is the science, method, techniques and study of multiple and sequenced methods of protecting data in computer and communication and digital systems from unauthorized and malicious disclosure and modification or alteration. The goal of this research is to introduce the security threats and possible case studies of data thefts and poor security of data stored in government based applications and sites and databases. Data security has evolved rapidly since late 75. It have seen rapid and alarming developments in security sectors like cryptography: public-key encryption, digital signatures, Data Encryption Standard (DES), key safeguarding schemes, and so on. After reviewing different papers and journals and also tested it by our own that is government based applications and databases and websites may leak confidential user data, or transmit classified data to malicious and unauthorized users with lower security clearances? The emphases would be showing and mentioning you the possible data security threats and different methods for protecting them.

Security Test Done by Accenture and Now Secure : -"Of the 465 tests completed for banking apps running on Android, 44 or nine percent had low security issues; 48 or 10 percent had medium security issues; and 10 or two percent had high level security issues. For banking apps running on iOS, a total of 315 tests indicated 24 or eight percent low level security issues; 13 or four percent with medium level issues; and none with high level issues," they noted.

II.   MOBILE CYBER SECURITY IN INDIA IS NEEDED UNDER DIGITAL INDIA

Mobiles are believed to play a enhanced role in the successful implementation of the **Digital India** project of Indian government. From mobile commerce to mobile banking, the Indian government is betting big upon mobiles and their use for public delivery of services through electronic means. Of course, this big scale use of mobiles will also give rise to cyber law and cyber security issues that Indian government must be well prepared to deal with in future. Mobile phones have become ubiquitous these days. They are used for multiple purposes ranging from personal use to mobile banking. Cyber criminals have also realised the importance of mobile phones for committing cyber crimes and financial frauds. This is also the reason why malware writers are also writing mobile phone specific malware to steal confidential and sensitive information. Mobile cyber security in India has become a cause of concern these days. Mobile phones are now proposed to be used for mobile banking and mobile governance in India. Naturally, the must ensure robust mobile cyber security in India. An electronic authentication policy of India can help in more active and secure mobile usages in India. Mobile governance and e-authentication in India are also closely related and with the proposed electronic delivery of services in India this is also a must have requirement.

For the time being there is no implementable electronic delivery of services policy of India though it may be in pipeline. Indian government is working in the direction of ensuring electronic delivery of services in India. In fact a legal framework titled electronic delivery of services bill 2011 (EDS Bill 2011) was also proposed by Indian government in the past. The same has still to become an applicable law in India. Once the EDS Bill 2011 becomes an applicable law, governments across the India would provide electronic services through various modes, including mobile phones.

 This requires putting a robust and reliable mobile security infrastructure in India. However, using of mobile phones for commercial and personal transactions in India is also risky. For instance, the mobile banking in India is risky as the present banking and other technology related legal frameworks are not conducive for mobile banking in India. Similarly, it is difficult to establish a well developed e-governance infrastructure in India. As a result India is still not ready for m-governance.

[4]At Perry4Law Organisation (P4LO) the biggest hurdles before the mobile related uses in India pertain to use of weak encryption standards and non use of mobile cyber security mechanisms in India. Absence of encryption laws in India has further made the mobile security very weak in India. The ever evolving mobile malware are further increasing the woes of mobile users' worldwide. As on date the malware are defeating cyber security products and services with ease. It is high time for India to seriously work upon mobile cyber security aspects as soon as possible. The policy decisions in this regard must be taken urgently and must be implemented as soon as possible.

III.   REVIEW OF LITERATURE : -

The research work reviewed in this document has been separated into different categories. [5]A list of the categories and the work in each category can be found in table below. The broad explanation of the mentioned topics is done on the below sections: -

On the screen Safety	Content Security	Transaction Methodology	unencrypted communications	TLS traffic data sensitivity	Transport Security

As Per ELK ASIA PACIFIC JOURNAL OF MARKETING AND RETAIL MANAGEMENT
Dynamic

The Digital India program is a lead program of the Government of India with a dream to change India into a carefully enabled society and information economy. Advanced India is a fantasy to guarantee that taxpayer driven organizations are made accessible for all nationals electronically by enhancing on the web foundation and by expanding the adequacy of Web network with one mission and one focus on that is to take country forward carefully and monetarily. This activity was taken to guarantee that the natives are getting occupied with the development procedure which is fundamental for the monetary development and reasonable advancement of the nation. With a specific end goal to understand the maximum capacity of this program, it is important to address certain difficulties in the method for its fruitful usage like advanced lack of education, poor foundation, low web speed, absence of coordination among different divisions, issue relating to tax assessment and so on. On the off chance that actualized appropriately, it will open different new open doors for the natives of the nation and accordingly it requires a great deal of endeavors and devotion from all divisions of government and in addition private segment considering the present status of the program. Watchwords Development, Digital, Infrastructure, E-administration, Government, Internet get to Presentation assembling and openings for work and so on. Computerized India was propelled by the Prime Digital India plans to give the genuinely necessary Pastor of India on second July 2015 with well-concentrate on the nine mainstays of development regions, characterized goal of associating rustic zones to be specific Broadband Interstates, with Access to Availability, fast Web systems furthermore, Versatile General Open enhancing computerized education. The vision of Internet Access Program, e-Governance: Computerized India is comprehensive development in numerous ranges Reforming Government through Technology, such e-Kranti - Electronic Delivery of Services, as electronic administrations, products.

Data for All, Gadgets Prof. Singh started with the fundamental review of Assembling, IT for Jobs and Early Harvest what Digital India involves and drove an exchange Projects. Each of these regions is a complex of calculated structure of the program and program in itself and cuts over various inspected the effect of "Computerized India"Services and Departments. Advanced India is to activity on the mechanical division of India. be actualized by the whole Government He reasoned that this activity must be with general coordination being finished by the supplemented with alterations in labor laws Division of Electronics and Information of India to make it an effective battle. Innovation. Arvind Gupta expects to state that Digital Writing REVIEW India development will assume a vital part in 'Computerized India' activity has been a range of powerful conveyance of administrations, observing enthusiasm of various looks into from different execution, disciplines due to its awesome criticalness enhancing administration. An Integrated Office also, impact on the economy all in all and of Innovation and Technology to accomplish the especially the mechanical segment. same, overseeing for issue ventures tackling, also, sharing applications and information administration will Sundar Pichai, Satya

Nadella, Elon Musk be the way to quick outcomes, given that most examined divisions take a shot at their own particular storehouses. Following about Computerized India furthermore, its readiness to make occupations openings in and the data area. He inferred that centrality since India has been occupied making new employments ought to be proceeded with burning through cash in purchasing innovation that we moving more specialists into high profitability have not utilized successfully or at times not employments keeping in mind the end goal to give long haul push to the even achieved usage arrange. Sharing mechanical area in India. learning's

[5]Microsoft CEO, Satya Nadella means to turn into India's accomplice in Digital India overseeing what's more, the best ventures hones accept over offices should be driven by this Office of Technology. program. He said that his organization will set up Gupta and Arora (2015) contemplated the effect ease broadband innovation administrations to of advanced India venture on India's provincial area. 5lakhs towns the nation over. The examination found that many plans have been ELK ASIA PACIFIC JOURNAL OF MARKETING AND RETAIL MANAGEMENT ISSN 2349-2317 (Online); DOI: 10.16962/EAPJMRM/issn. 2349-2317/2015; Volume 8 Issue 3 (2017)

A Digital Identification which will check absolutely evacuate the computerized hole between the
the end client. provincial and urban India. A Bank represent Immediate Benefit A portion of the offices gave under the Exchanges of endowments and installments. A Mobile for overall access to all administrations. activity of Digital India are as per the following:

1-DIGI LOCKER

The aggressive 'Computerized India' venture has The administration was propelled as an essential continuously been in news for all the great reasons. office to store vital archives like Voter
The undertaking having an aggregate overlay of Rs 1 lakh ID Card, Pan Card, BPL Card, Driving crore intends to change the India into a License, instruction testaments, and so forth in the information economy. It plans to guarantee simple cloud. get to to innovation foundation what's more, taxpayer driven organizations to natives. Computerized India

2MYGOV.IN

is a fantasy task of the administration for the MyGov.in is a stage to share inputs and residents and Industries of India which could thoughts on issues of approach and administration. It help in associating the different over a wide span of time is a stage for subject engagement in ventures to convey India to a worldwide stage. administration, through a "Talk about", "Do" and Through this venture taxpayer driven organizations are "Spread" approach. accessible for urban and country natives carefully or, then again electronically. The thought is to accomplish advanced advancement and make positive effect for the individuals living in provincial and urban ranges. It will unquestionably pull in interest in all item

IV. SECURITY ANALYSIS AMONG MOBILE APPLICATION'S : -

- World-writable files (i.e. other apps can have write access to the files)

- Broken SSL check / sensitive data in transit (i.e. unencrypted communications). Curiously enough, none of the tested iOS apps had this problem

- Writable executables – a failing that can be combined with other issues and lead to additional app vulnerabilities, including remote code execution ones.

- Lack of obfuscation of the app source code, allowing for easy reverse-engineering (some 60% of the tested Android banking apps are guilty of this)

- Weak SecureRandom implementation(This class provides a cryptographically strong random number generator (RNG). ... Many **SecureRandom** implementations are in the form of a pseudo-random number generator (PRNG), which means they use a deterministic algorithm to produce a pseudo-random sequence from a true random seed.)

- Dynamic code loading

- Inappropriately set "HttpOnly" flag (to prevent XSS attacks)

- Inappropriately set "Secure" flag (to prevent the sending of cookies over insecure channels)

- TLS traffic with sensitive data (80% of tested iOS banking apps had sensitive values intercepted while proxying SSL and Transport Layer Security (TLS) app communications (i.e. username, password, GPS coordinates, etc.)

- Lack of app transport security (60% of tested iOS banking apps had ATS globally disabled, which allows a connection regardless of HTTP or HTTPS configuration, connection to servers with lower TLS versions and a connection using cipher suites that do not support forward secrecy).

A domain name server (DNS) helps the users to reach a particular website hosted on a particular server. With the advance in technology, the DNS service has been upgraded to dynamic DNS service. The dynamic DNS service helps a domain name to point to Internet resources hosted on changing public IP addresses. However, dynamic DNS service has both advantages and disadvantages just like all other technologies. On the positive side, the dynamic DNS service helps small scale businesses who need to provide consistent content or services to their customers. These small scale businesses use the IP assigned to them by their ISP, and every time their IP changes, they notify their dynamic DNS provider to update its name servers so that the customer's domain points now to the new IP. On the negative side, the dynamic DNS service, especially the free dynamic DNS service, are being abused by cyber criminals for various cyber crimes and cyber attacks. Some of the nefarious activities of cyber criminals abusing dynamic DNS service include malware implants in websites, targeted spear phishing, establishing of C&C for botnet, spamming, etc. Abusing dynamic DNS service helps the cyber criminals escape the <u>authorship attribution</u> for their cyber crimes. It provides a layer of anonymity and <u>anti forensics</u> to the criminal activities of those abusing dynamic DNS service. This is more so when IP address cannot be solely relied upon to <u>secure a conviction</u> in a cyber crime case.

Further, using dynamic DNS services can also help in bypassing the IP blacklisting deployed by various service providers to prevent DNS abuses. The malware can be continued to be used to infect the computers of end users by using constantly-changing hosting IP addresses. These IP addresses usually belong to law abiding and innocent users whose computers are compromised and made part of the botnet. These IP addresses may also belong to compromised public websites where the malicious payloads may be installed. There may be a situation where domains themselves may be blacklisted. To circumvent domain blacklisting, cyber criminals can also use randomly-generated disposable sub-domains under the dynamic DNS domain to point to the next hop in a redirection chain or to the final malware hosting IP. This behaviour seems similar to fast flux method but in practice dynamic DNS and fast flux are different concepts. Dynamic DNS operates at a micro level whereas fast flux operates at a macro level. Dynamic DNS operates at a regional level whereas fast flux operates at international level. Further, the authoritative name servers for a dynamic DNS domain physically belong to the dynamic DNS provider, whereas with fast flux, double fluxing is possible where the name servers can be made point to constantly changing IP address of physical hosts located in different countries. In practice, dynamic DNS domains map to a much smaller set of IP addresses than fast flux.

So what is the purpose of using the fast flux method? Fast flux is a DNS technique used by cyber criminals to hide phishing and malware delivery sites behind an ever-changing network of compromised hosts (botnets) acting as proxies. It can also refer to the combination of peer-to-peer networking, distributed command and control, web-based load balancing and proxy redirection used to make malware networks more resistant to discovery and counter-measures. Fast flux may be a single-flux or double-flux. [6]The seeds of a carefully associated India were sown in the mid 2000s with a number of assorted however disjoint e-administration programs. Be that as it may, these brought about constrained effect on residents. In 2014, the UN put India at the 118th opening universally (out of 182 nations) in the e-government rankings. With a remarkable order and a reasonable vision, the present government is pushing ahead the Digital India activity, which can possibly change the lives of nationals over the length and broadness of the nation. Computerized India varies from past endeavors as it gives a consolidated vision and an extensive execution design, bringing together different divisions and in addition existing and new projects that are checked what's more, affected midway by the administration. Innovation is critical to the vision of a Digital India. [7]

Online networking, Mobility, Analytics what's more, Cloud are the establishments that will empower the Digital India dreams of giving "administration and administrations on request" and "carefully enabling residents" and support the social incorporation plans being propelled by the administration. Alongside general society division, the private segment will assume a critical part in satisfying the vision of Digital India by giving the last mile get to, area particular Wi-Fi get to (e.g., schools, colleges, open Wi-Fi) and advancement of utilizations that give cloud-construct administrations with respect to request to subjects, as branchless keeping money, remote wellbeing, remote instruction, aptitude improvement and e-equity. The Digital India activity will, throughout the following couple of years, expand the compass of taxpayer supported organizations and basic plans to the remotest parts of the nation, giving subjects on-request, cloud- based administrations and making a large number of employments. Notwithstanding the expanded concentration and pace, execution remains the most critical test for the administration. Giving "foundation as an utility to each subject" is one of the key dreams of the program. Be that as it may, the lead computerized framework venture, National Optical Fiber Network (NOFN) driven by BBNL has been postponed by a few a long time. At the present pace the NOFN program, which intends to give high- speed fiber network (100 Mbps) to 250,000 gram panchayats, is relied upon to be finish in the 2018/19 time allotment. As on date just ~1% of the objective (~2,500) gram panchayats have been associated. On the remote front, starting at 2015 around 45,000 towns stay detached. This paper gives a far reaching audit of the lead programs propelled what's more, observed under the Digital India activity, distinguishes the advance to date, usage holes and difficulties confronted. Furthermore, some key regions to center for shutting the hole have been examined.

[8]Hemant JoshiMessage from ASSOCHAM ASSOCHAM respects the Digital India program being propelled as of late by the Hon'ble Prime Minister as a leader program with a dream to change India into a carefully engaged society and information economy. As residents turn out to be more mindful of their right, they have turned out to be all the more requesting in terms of better and snappier administrations from Government. Successful open administration today is more about straightforwardness, productivity and responsibility. E-administration activities in India have generally being stood up to with the double difficulties of computerizing government offices and taking on the web administrations to the basic man. Be that as it may, now e-administration has moved past government divisions simply having a gateway. It is never again limited to simply streamlining and computerizing forms. It is tied in with changing the way governments work and rethinking individuals' cooperation in the vote based process. It is tied in with enabling both the government and the native. [9] Innovation will be the empowering influence for the national to rise above the limits of offices and services, and give a solitary stage to collaboration with its natives, in this manner advancing participatory administration and expanded straightforwardness and reforming open administration conveyance. [10]ASSOCHAM's drive in making mindfulness about the idea and routine with regards to e-administration is over 10 years, where endeavors have been made to welcome support from the Center as well as from state governments on one side furthermore, guaranteeing interest from industry pioneers on the other, on a typical stage. The eleventh e-Governance National Summit with the topic 'Comprehensive Growth Through Computerized Empowerment' is another progression toward that path. We truly trust that all the partners will massively pick up from the considerations at this national summit and accomplish the goal of making an 'Advanced India'. I pass on my great wishes for the achievement of the eleventh National Summit on e-Governance and Digital India.

ASSOCHAM Message from ASSOCHAM Gone for making a carefully met society, the Digital India program gives the best open door that we have ever needed to make quick and strong advances in social and monetary improvement. [8]Making a computerized society will be enter in the intensity of countries in the up and coming years. Computerized Society is more extensive than 'computerized economy.' An advanced society incorporates every social circle and loans a focused edge to the general economy. This is the time of broadband – and we as a whole perceive the key significance of broadband as a social and monetary improvement apparatus, and as a basic part of keen society. The Digital India program is gone for additionally spanning the separation between advanced "haves" and "the less wealthy". It is an advantageous time for both the business also, the legislature to from a synergistic association towards reinforcing India's financial advancement through computerized strengthening. The activities of e-wellbeing, e-instruction and a wide assortment of resident administrations, can be conveyed to rustic subjects subject to favorable and dynamic strategy activities by the legislature and with the interest of the whole biological community. Notwithstanding, the need of great importance is to embrace a grassroots approach beginning from the State-level with key empowering influences being mindfulness building and soaking up the advantages of e-benefits particularly for the underserved parts of the nation. [11]

The eleventh National Summit on e-Governance and Digital India is gone for giving a fillip to the Digital India battle by handling grassroots issues in from of tending to advanced infra bottlenecks, benefit conveyance system and limit building. All things considered, Advanced India must be accomplished when it achieves the

States and its kin to make huge numbers of occupations and release undiscovered segments, for example, provincial BPOs and a wide assortment of government-to-resident administrations in type of e-training, portable fund and m-wellbeing among others. The wide range of members will give a stand-out consultation with the center of making a Digital India. I wish eleventh National Summit on e-Governance and Computerized India a great achievement.

V.   CONCLUSION : -

Some of these phishing and malware delivery websites are hosted on bullet proof server with mirrored hosting facilities. Mirrored hosting is a powerful mirrored web hosting management platform that uses multiple specially designed virtual servers to host website with 100% uptime. This is supported by powerful automated control panels. No one is able to trace original IP of the server or the place where the files are hosted so the websites/domains hosted have a 100% Uptime. The security vendors must have been working on this issue and they may come up with state of the art and innovative methods to deal with this situation.

ACKNOWLEDGEMENT

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