"TO STUDY THE ROLE OF SATELLITE COMMUNICATION IN CORIDERATION TOINDIAN SCENARIO"

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Abstract:

India made first attempt in 1975 to launch a satellite and till today 73 Indian satellites are launched successfully which mainly deals with telephony's, broadcasting along with Internet access, VPN personal access and day by day cast as reduced in competition. In this paper I will put focus on Indian projects such ASA Gagan ,GPS Aided Geo augmented navigation systematic.

Key word : ASA Gagan , VPN , PS , Geo augmented navigation systematic

Introduction

When ISRO launched a geosynchronous satellite powered by *indigenous* cryogenic engine. Last year in November, ISRO launched a satellite for the Mission MARS. another significant milestone in India's space journey,

high-definition television and global access to the Internet, satellites also support all forms of communications that range from simple point-of-sale validation to bandwidth-intensive multimedia applications. Satellite solutions are highly flexible and can operate independently, or as part of a larger network. Satellites of course serve traditional markets — telephony and broadcasting — covering large geographical areas using single-beam transmission.

Satellites are on the frontiers of such advanced applications as remote sensing, telemedicine, distance learning, environment monitoring, Voice over Internet Protocol (VoIP) and video on demand (VOD).

Mobile satellite services using a constellation of satellites provide communication services to portable devices such as cellular phones and global positioning systems.

As a result of rising aspirations, there is demand for two-way broadband access over large geographical areas not served by telecom-infrastructure. Satellite providers can offer local-loop services in such areas. The recent report by ITU entitled ―Regulation of global broadband satellite communications‖ explains why satellite broadband technology is vital for expanding multimedia services and applications around the world.

The cryogenic engine CE-20 developed by ISRO to propel GSLV rocket.
America had forced Russia to deny this technology to India.

Operational Basics:

◻◻ C-band (4–6 GHz) fixed-satellite service (FSS)

◻ Ku-band (11–14 GHz) fixed-satellite service (FSS)

◻ Ka-band (20–30 GHz) bent pipe (with no on-board processing in the satellite)

◻ Ka-band (20–30 GHz) with on-board processing in the satellite

◻ L-band (1.5–1.6 GHz) mobile-satellite service (MSS).

Satellites also use commercial frequency bands of C- and Ku-band. Generally C-band operates in the 4-6 GHz range and is mostly used for fixed services such as PSN, Internet Trunking and mobile feeder links. Ku-band in 11 to 14 GHz serves

Internet trunking and video distribution applications. Over the next several years, the use of a new frequency band known as Ka-band is expected to increase. Ka-band operates in the 18-30 GHz range largely for broadband applications. Attenuation and scintillation effects of atmospheric gas, clouds and rain — causing signal fading — become more pronounced with increase in frequency above 1 GHz, and particularly affect the Ka and higher bands. But fade mitigation techniques are implemented to overcome the problem. The footprint of a satellite does not match national borders. This makes it necessary to regulate satellite usage through international agreements such as those reached under the auspices of ITU.

IV. INDIA's PROJECT GAGAN

India is becoming known for low-cost innovation in diverse fields such as healthcare and education. Last November's Mars mission is an example of the ingenuity that produces technology at stupendously low prices. The price tag on Mangalyaan has stirred the global space community. Phones that pick up signals from orbiting U.S. Global Positioning System (GPS) satellites are now commonplace. The phone uses that information to work out the location and display it on a map.

An important way to meet the demands of civil aviation has been through what is known as a Satellite-Based Augmentation System (SBAS). Satellites in geostationary orbit, where they match the earth's rotation and therefore remain over the same place on the globe, are used to supplement the GPS signals. India is establishing its own system, the 'GPS Aided Geo Augmented Navigation' (GAGAN), a joint effort by the Indian Space Research Organisation and the Airports Authority of India.
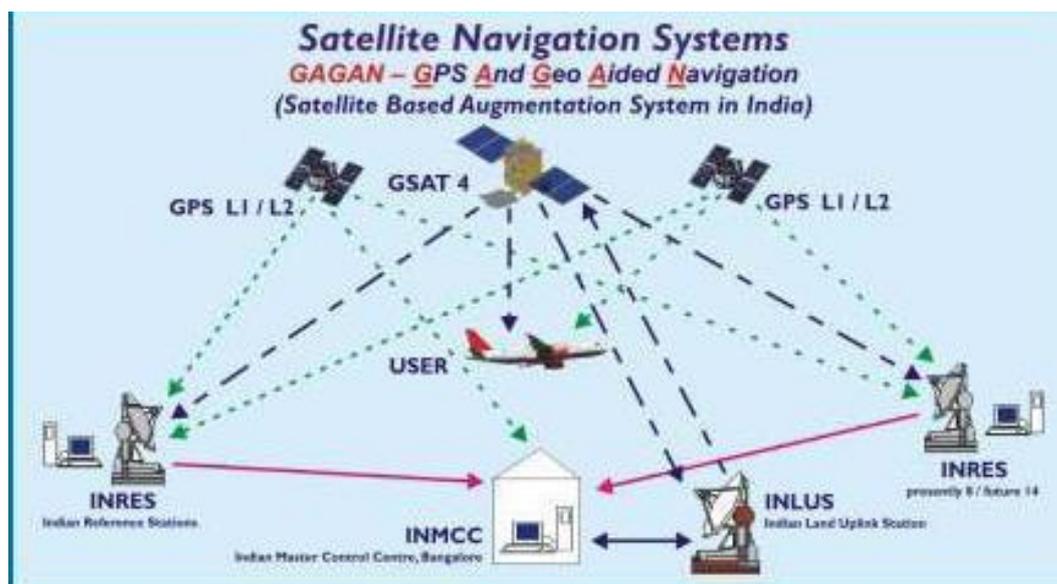
India developed GSLV to launch its satellites indigenously without dependence on foreign aid. GSLV has attempted eight launches to date, since its first launch in 2001.

GSAT-14 is the twenty third geostationary communication satellite of India built by ISRO. The main objectives of GSAT-14 mission are:

i)   To augment the In-orbit capacity of Extended C and Ku-band transponders

ii) To provide a platform for new experiments.

The payloads of GSAT-14 are:

☐ Six extended C-band transponders for Indian mainland and island coverage with 36 dBW

Edge Of Coverage- Effective Isotropic Radiated Power (EOC-EIRP)

☐ Six Ku-band transponders covering the mainland India with 51.5 dBW EOC-EIRP

☐ Two Ka-band Beacons operating at 20.2 GHz and 30.5 GHz to carry out attenuation studies.

Some of the new technologies being tested on GSAT-14 are:
- ☐ Ka band beacon propagation studies
- ☐ Fiber Optic Gyro
- ☐ Active Pixel Sun Sensor
- ☐ Thermal control coating experiments.

TABLE 1 - SALIENT FEATURES OF GSAT-14 SATELLITE

Mass at Lift-off	1982 kg
Overall size	2.0m x 2.0m x 3.6m
Power	2600 W
Attitude and Orbit Control System	Momentum based 3-axis stabilised
Propulsion System	Mono Methyl Hydrazine mixed oxides of nitrogen
Antennae	One 2m and one 2.2m single shell shaped reflector Antennae
Launch Vehicle	GSLV-D5
Orbit	Geostationary, 74 deg E longitude
Mission life	12 years
Launch site	SHAR

Table 2 -- LIST OF SATELLITES LAUNCHED BY INDIA India has launched 73 Indian satellites as of 5 January 2014 of many types since its first attempt in 1975. The Table below provides the complete list.

NAME	LAUNCH DATE	APPLICATION/ REMARKS
Aryabhata	19 April 1975	Provided technological experience in building and operating a satellite system.
Bhaskara-I	7 June 1979	First experimental remote sensing satellite. Carried TV and microwave cameras.
Rohini Technology Payload	10 August 1979	Intended for measuring in-flight performance of first experimental flight of SLV-3, the first Indian launch vehicle. Did not achieve orbit.
Rohini RS-1	18 July 1980	Used for measuring in-flight performance of second experimental launch of SLV-3.
Rohini RS-D1	31 May 1981	Used for conducting some remote sensing technology studies using a landmark sensor payload.Launched by the first developmental launch of SLV-3.

Ariane Passenger Payload Experiment	19 June 1981	First experimental communication satellite. Provided experience in building and operating a payload experiment three-axis stabilised communication satellite.
Bhaskara-II	20 November 1981	Second experimental remote sensing satellite; similar to Bhaskara-1. Provided experience in building and operating a remote sensing satellite system on an end-to-end basis.
INSAT-1A	10 April 1982	First operational multipurpose communication and meteorology satellite. Procured from USA. Worked for only six months.
Rohini RS-D2	17 April 1983	Identical to RS-D1. Launched by the second developmental launch of SLV-3.
INSAT-1B	30 August 1983	Identical to INSAT-1A. Served for more than design life of seven years.
Stretched Rohini Satellite Series(SROSS-1)	24 March 1987	Carried payload for launch vehicle performance monitoring and for gamma ray astronomy. Did not achieve orbit.

NAME	LAUNCH DATE	APPLICATION/ REMARKS
IRS-1A	17 March 1988	Earth observation satellite. First operational remote sensing satellite.
Stretched Rohini Satellite Series(SROSS-2)	13 July 1988	Carried remote sensing payload of German space agency in addition to Gamma Ray astronomy payload. Did not achieve orbit.
INSAT-1C	21 July 1988	Same as INSAT-1A. Served for only one-and-a-half years.
INSAT-1D	12 June 1990	Identical to INSAT-1A. Still in service. A third stage motor landed from its launch, landed in Australia in 2008.[2]
IRS-1B	29 August 1991	Earth observation satellite. Improved version of IRS-1A.
INSAT-2DT	26 February 1992	Launched as Arabsat 1C. Procured in orbit from Arabsat in January 1998.
Stretched Rohini Satellite	20 May 1992	Carried gamma ray astronomy and aeronomy payload.

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Series(SROSS-C)		
INSAT-2A	10 July 1992	First satellite in the second-generation Indian-built INSAT-2 series. Has enhanced capability over INSAT-1 series. Still in service.
INSAT-2B	23 July 1993	Second satellite in INSAT-2 series. Identical to INSAT-2A. Still in service.
IRS-1E	20 September 1993	Earth observation satellite. Did not achieve orbit.
Stretched Rohini Satellite Series(SROSS-C2)	4 May 1994	Identical to SROSS-C. Still in service.
IRS-P2	15 October 1994	Earth observation satellite. Launched by second developmental flight of PSLV.Mission accomplished after 3 years of service in 1997.
INSAT-2C	7 December 1995	Has additional capabilities such as mobile satellite service, business communication and television outreach beyond Indian boundaries. Still in service.
IRS-1C	29 December 1995	Earth observation satellite. Launched from Baikonur Cosmodrome.
IRS-P3	21 March 1996	Earth observation satellite. Carries remote sensing payload and an X-ray astronomy payload. Launched by third developmental flight of PSLV.
INSAT-2D	4 June 1997	Same as INSAT-2C. Inoperable since 1997-10-04 due to power bus anomaly.
IRS-1D	29 September 1997	Earth observation satellite. Same as IRS-1C.
INSAT-2E	3 April 1999	Multipurpose communication and meteorological satellite.
Oceansat-1 (IRS-P4)	26 May 1999	Earth observation satellite. Carries an Ocean Colour Monitor (OCM) and a Multifrequency Scanning Microwave Radiometer (MSMR).
INSAT-3B	22 March 2000	Multipurpose communication: business communication, developmental communication, and mobile communication.

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GSAT-1	18 April 2001	Experimental satellite for the first developmental flight of Geosynchronous Satellite Launch Vehicle, GSLV-D1.
Technology Experiment Satellite (TES)	22 October 2001	Experimental satellite to test technologies such as attitude and orbit control system, high-torque reaction wheels, new reaction control system, etc.
INSAT-3C	24 January 2002	Designed to augment the existing INSAT capacity for communication and broadcasting and provide continuity of the services of INSAT-2C.
Kalpana-1(METSAT)	12 September 2002	First meteorological satellite built by ISRO. Originally named METSAT. Renamed after Kalpana Chawla who perished in the Space Shuttle Columbia.
INSAT-3A	10 April 2003	Multipurpose satellite for communication, broadcasting, and meteorological services along with INSAT-2E and Kalpana-1.
GSAT-2	8 May 2003	Experimental satellite for the second developmental test flight of Geosynchronous Satellite Launch Vehicle (GSLV)
INSAT-3E	28 September	Communication satellite to augment the existing INSAT System.

NAME	LAUNCH DATE	APPLICATION/ REMARKS
	2003	
RESOURCESAT-1 (IRS-P6)	17 October 2003	Earth observation/remote sensing satellite. Intended to supplement and replace IRS-1C and IRS-1D.
EDUSAT	20 October 2004	Also designated GSAT-3. India's first exclusive educational satellite.
HAMSAT	5 May 2005	Microsatellite (42.5 kilograms) for providing satellite-based amateur radio services to the national as well as the international community.
CARTOSAT-1	5 May 2005	Earth observation satellite. Provides stereographic in-orbit images with a

		2.5-meter resolution.
INSAT-4A	22 December 2005	Advanced satellite for direct-to-home television broadcasting services.
INSAT-4C	10 July 2006	Geosynchronous communications satellite. Did not achieve orbit.
CARTOSAT-2	10 January 2007	Advanced remote sensing satellite carrying a panchromatic camera capable of providing scene-specific spot images.
INSAT-4B	12 March 2007	Identical to INSAT-4A. Further augments the INSAT capacity for direct-to-home (DTH) television services and other communications. On the night of 7 July INSAT-4B experienced a power supply glitch which led to switching 'off' of 50 per cent of the transponder capacity (6 Ku and 6 C-Band transponders).
INSAT-4CR	2 September 2007	Identical to INSAT-4C. It carried 12 high-power Ku-band transponders designed to provide direct-to-home (DTH) television services, Digital Satellite News Gathering etc.
CARTOSAT-2A	28 April 2008	Earth observation/remote sensing satellite. Identical to CARTOSAT-2.
IMS-1 (Third World Satellite – TWsat)	28 April 2008	Low-cost microsatellite imaging mission. Launched as co-passenger with CARTOSAT-2A.
Chandrayaan-1	22 October 2008	Unmanned lunar probe. Carries 11 scientific instruments built in India, USA, UK, Germany, Sweden and Bulgaria.
RISAT-2	20 April 2009	Radar imaging satellite used to monitor India's borders and as part of anti-infiltration and anti-terrorist operations. Launched as a co-passenger with ANUSAT.
ANUSAT	20 April 2009	Research microsatellite designed at Anna University. Carries an amateur radio and technology demonstration experiments.
Oceansat-2 (IRS-P4)	23 September 2009	Gathers data for oceanographic, coastal and atmospheric applications.

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		Continues mission of Oceansat-1.
Oceansat-2 (IRS-P4)	23 September 2009	Gathers data for oceanographic, coastal and atmospheric applications. Continues mission of Oceansat-1.
GSAT-4	15 April 2010	Communications satellite technology demonstrator. Failed to reach orbit due to GSLV-D3 failure.
CARTOSAT-2B	12 July 2010	Earth observation/remote sensing satellite. Identical to CARTOSAT-2A.
StudSat	12 July 2010	First Indian pico-satellite (weighing less than 1 kg). Developed by a team from seven engineering colleges from Karnataka and Andhra Pradesh.
GSAT-5P /INSAT-4D	25 December 2010	C-band communication satellite, failed to reach orbit due to GSLV-F06 failure.
RESOURCESAT-2	20 April 2011	RESOURCESAT-2, ISRO's eighteenth remote-sensing satellite, followed RESOURCESAT-1. PSLV-C16 placed three satellites with a total payload mass of 1404 kg – RESOURCESAT-2 weighing 1206 kg, the Indo-Russian YOUTHSAT weighing 92 kg and Singapore's X-SAT weighing 106 kg – into an 822 km polar Sun Synchronous Orbit (SSO).
Youthsat	20 April 2011	Indo-Russian stellar and atmospheric satellite with the participation of university students. It weighed 92 kg
GSAT-8 / INSAT-4G	21 May 2011	Communications satellite carries 24 Ku-band transponders and 2 channel GAGAN payload operating in L1 and L5 band.
GSAT-12	15 July 2011	GSAT-12 communication satellite built by ISRO, weighs about 1410 kg at lift-off. GSAT-12 is configured to carry 12 Extended C-band transponders to meet the country's growing demand for transponders in a short turn-around-time.The 12 Extended C-band transponders of

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		GSAT-12 will augment the capacity in the INSAT system for various communication services like Tele-education, Telemedicine and for Village Resource Centres (VRC).Mission life About 8 Years.

NAME	LAUNCH DATE	APPLICATION/ REMARKS
Megha-Tropiques	12 October 2011	Megha-Tropiques weighs about 1000 kg Lift-off Mass, developed jointly by ISRO and the French Centre National d'Études Spatiales(CNES). PSLV-C18 is configured to carry four satellites in which, one satellite, developed by India and France, will track the weather, two were developed by educational institutions, and the fourth is from Luxembourg.
Jugnu	12 October 2011	Nano-satellite weighing 3 kg developed by IIT Kanpur
RISAT-1	26 April 2012	RISAT-1, first indigenous all-weather Radar Imaging Satellite (RISAT-1), whose images will facilitate agriculture and disaster management weighs about 1858 kg.
SRMSAT	26 April 2012	Nano-satellite weighing 10.9 kg developed by SRM University.
GSAT-10	29 September 2012	GSAT-10, India's advanced communication satellite, is a high power satellite being inducted into the INSAT system. Weighing 3400 kg at lift-off.
SARAL	25 February 2013	SARAL, The *S*atellite with *AR*GOS and *AL*TIKA (SARAL) is a joint Indo-French satellite mission for oceanographic studies.
IRNSS-1A	1 July 2013	IRNSS-1A is the first satellite in the Indian Regional Navigation Satellite System (IRNSS). It is one of the seven satellites constituting the IRNSS space segment.
INSAT-3D	26 July 2013	INSAT-3D is the meteorological Satellite with advanced weather

		monitoring payloads.
GSAT-7	30 August 2013	GSAT-7 is the advanced multi-band communication satellite dedicated for military use.
Mars Orbiter Mission (MOM)	5 November 2013	The Mars Orbiter Mission (MOM), informally called Mangalyaan is India's first Mars orbiter.
GSAT-14	5 Jan' 14	GSAT-14 is the twenty third geostationary communication satellite of India to augment the In-orbit capacity of Extended C and Ku-band transponders.

Observation and conclusion:-

As our study we come on following observations and conclusion:

1. 1 India is growing country and till now attempted to launch 73 indigenous satellites.

2. 2 India has become an independent with respective satellite and have made tremendous growth in design in implementation of satellite.

3. 3 India has not only concentrated on communication but has worked on different aspects such as online data transfer, internet and internet based services positioning system, Remote sensing etc.

4. 4 The real outcome of successful implementation has come across and Indian market has become hot cake for global market and successfully implemented in commerce based application.

5. 5 With the vision of honorable Prime Minister to make India digital country you also expect new policies to be launched by Indian Government which will also make it remark on global market.

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SOFTWARE DEFINED NETWORK AS A FALICIATOR FOR INTERNET OF THINGS

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Abstract:
Software Defined Networks technology offers enormous benefits to network control and opens new ways of communication by defining powerful but simple switching elements i.e. Forwarders. This paper gives overview how benefit provided by Software Defined Network acts as a solution to Internet of Things to let the devices connect to the heterogeneous networks to communicate to each other.

Keywords: Software Defined Network (SDN), Internet of Things (IOT)

1   Introduction

Internet of things concept has imposed new complex requirements to both networking &internetworking schemes in current & future networks specially the internet. To make this concept implement or work networks welcome heterogeneity in devices , networking behaviour & underlying protocols.

Each IoT object has been configured or even designed, to accomplish specific objectives. Most widespread approach to build such view is adoption of common protocol i.e. IP for internet.

The opposite perspective of network comes to the SDN approach. This scheme proposes a conceptual centralized brain that knows the topology & state of network which takes decision about packet forwarding, represents them into forwarding rules & communicate them to forwarding entities by interacting with the SDN controllers. This paper is organized as first we explained what is Internet of Things (IOT) and its challenges with applications. Then we conclude with conclusion how software defined network helps to solve some challenges of IOT.

2. Body of Paper:

Internet of Things (IOT):

  The Internet of Things (IoT) is an interconnected ecosystem of uniquely addressable physical objects with varying degrees of sensing, processing, and actuation capabilities, sharing the ability to communicate and interoperate through the Internet as their common denominator [1].

Challenges of IoT:

Security: As IOT connects more devices together it provides more entry points for malwares.

Trust and Privacy: With remote sensors and monitoring a core use case for IoT,there will be hightened sensitivity to controlling access and ownership of data.

Complexity,confusion and Integration issues: With multiple platform, numerous protocols and large number of API's,IoT systems integration and testing will be a challenge to say the least. The confusion around evolving standards is almost   sure to slow adoption.

Evolving architectures,protocol wars and competing standards: There are multiple standards that evolve based on different requirements determined by device class,powerrequirements,capabilities and uses.

Concrete use cases and compelling value propositions: Lack of clear use cases or strong ROI examples will slow down adoption of the IoT.

There already exist IoT-oriented communication protocols, such asMQTT and CoAP, We still do not have a standard for a truly open IoT. While every object needs connectivity,not every object needs to be Internet-capable, but only capable enough to get its data to a gateway. Software Defined Networking (SDN) and Network Function Virtualization (NFV) techniques promise to deliver the next generation of networks.

Applications of Internet of Things [2]:
Wearables: Wearable devices are installed with sensors and software's which collect data and information about the users. This data is later per-processed to extract essential insights about user.

Connected car: A connected car is a vehicle which is able to optimize own operation, maintenance as well as comfort of passengers using on board sensors and internet connectivity.

Industrial Internet: It is empowering industrial engineering with sensors, software and big data analytic to create brilliant machines.

Smart Cities: Smart city is another powerful application of IoT generating curiosity among worldspopulation. Smart surveillance,automated transportation, smarter energy management systems, water distribution, urban security and environmental monitoring all are examples of internet of things applications for smart cities.

IoT agriculture: Smart farming is one of the fastest growing field in IoT.
Sensing for soil moisture and nutrients, controlling water usage for plant growth and determining custom fertilizer are some simple uses of IoT.

Energy Engagement: The basic idea behind the smart grids is to collect data in an automated fashion and analyze the behavior or electricity consumers and suppliers for improving efficiency as well as economics of electricity use.

IoT in Poultry and Farming: Livestock monitoring is about animal husbandry and cost saving. Using IoT applications to gather data about the health and well being of the cattle, ranchers knowing early about the sick animal can pull out and help prevent large number of sick cattle.

2 Conclusion:

Internet of Things is a concept where each and every device or things can be connected to a network. Each device or things on the network which implied by application of Internet of things and will act as a smart device or things

The devices or things connected to the network can communicate with each other through the IoT Agent and then the SDN controller and maintain its objective up to date.As SDN allows to have centralized control for routing packets in IOT network and network policies can be implemented at SDN controller,deploying time and network handling time will be reduced. Also sensor need be more complex to handle routing process in the network. With the separation of data plane and control plane in context to SDN technology , network will operate in more controlled and secure manner.

Thus, integrating SDN technology with IOT will give us more controlled and secure network environment which indeed need of Internet of things community.

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OVERVIEW OF SOFTWARE DEFINED NETWORKING

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Abstract:

The internet has led to the creation of a digital society their widespread adoption traditional IP networks are complex and very hard to manage it is an respond to faults load and changes. SDN is an emerging paradigm that promises to change this state of affairs by breaking vertical integration the separation of concerns introduction between the definition of network policies their implementation in switching hardware. SDN makes it easier to create and introduction new abstraction in networking simplifying network management &facilitating network evolution In this paper we present a history of SDN with its standards.

Keyword: Software defined network History,StandardSDN,Needs of SDN,SDN.

Introduction:

The distributed control and transport network protocols running inside the routers and switches are the key technologies that allow information, in the form of digital packets, to travel around the world. . Despite their widespread adoption, traditional IP networks are complex and hard to manage. To express the desired high-level network policies, network operators need to configure each individual network device separately using low-level and often vendor-specific commands. Automatic reconfiguration and response mechanisms are virtually non-existent in current IP networks. Software-Defined Networking(SDN) is an emerging networking paradigm that gives hope to change the limitations of current network infrastructures. SDN momentum was strong enough to make Google, Facebook,Yahoo, Microsoft, Verizon, and Deutsche Telekom fund Open Networking Foundation . NSX is a commercial solution that delivers a fully functional network in software,provisioned independent of the underlying networking devices, entirely based around SDN principles, architectural aspects of SDN OpenFlow and a short literature review can be found in[1].

 This paper we explain history of SDN then its need. SDN standards are pondered and finally concluded with the conclusion.

History of Software defined networking:

    Active networks represent one of the early attempts on building new network architectures based on this concept. The main idea behind active networks is for each node to have the capability to perform computations on, or modify the content of packets. To this end active networks propose two distinct programmable switches and capsules. The former does not imply changes in the existing packet or

cell format. It assumes that switching devices support the downloading of programs with specific instructions on how to process packets. The second approach on the other hand suggests that packets should be replaced by tiny programs which are encapsulated in transmission frames and executed at each node along their path. The network control point (NCP) is probably the first attempt to separate control and data plane signaling. NCPs were introduced by AT&T to improve the management and control of its telephone network. This change promoted a faster pace of innovation of the network and provided new means for improving its efficiency by taking advantage of the global view of the network provided by NCPs. Network virtualization has gained a new traction with the s. The core idea was to allow multiple switchlets on top of a single ATM switch, enabling multiple independent ATM networks to share the same physical resources advent of SDN. The concept of a network operating system was reborn with the introduction of OpenFlow-based network operating systems.

Need for SDN:-

The need of SDN technologies will be specific for network requirements,the Large data center networks do not easily support the dynamic requirements specially means that the ability to provide network services quickly and easily to new machines. The campus networks and branch networks that need to have open API's and improved network flexibility to support guarantee Quality of service for specific applications new protocols between the two namely the southbound API between controllers and devices and the northbound API between controllers and applications[3].

Software defined networking standardization:-

The standardization landscape in SDN is expected to keep evolving over time. This activities are being carried out in Standard Development Organizations (SDOs), other related efforts are ongoing at industrial or community consortia (e.g.,OpenDaylight, OpenStack, OPNFV), delivering results often considered as the de facto standards. As results often come in the form of open source implementations that have become the common strategy towards accelerating SDN and related cloud and networking technologies [2].
The Open Networking Foundation (ONF) is a member-driven organization to promote the adoption of SDN through the development of the OpenFlow protocol as an open standard to communicate control decisions to data plane devices. The ONF is further structured in many working groups (WGs).

CONCLUSION:-

Software Defined Networking (SDN) created an opportunity for solving these long standing problems found in traditional networks. Some of the key ideas of SDN are the introduction of dynamic programmability in forwarding devices through open southbound interfaces the decoupling of the control and data plane and the global view of the network by logical centralization While data plane elements became

dumb, but highly efficient and programmable packet forwarding devices the control plane elements are now represented by a single entity the controller or network operating system.

This paper helps t understand how SDN come to evolve and how various standardization organization works together to bring SDN to reality.

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TO STUDY THE ROLE OF CYBER SECURITY ALGORITHMS IN ACHIEVING SECURITY

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Absract :

With vision of honorable Prime Minister Mr. Narendra Modi to make India digitalized and to convert all transactions into "Cashless" to bring this vision into reality, the crucial role being played by IT and ITES based companies who has made or designed E-commerce based application which are freely downloadable and easily available. But while using these applications there are several issues related to network server based security has raised.

In this paper, we put focus on various security based algorithms such as Blowfish, Twofish , IDEA, RSA, DES, AES.

While writing this paper, we try our level best to do comparative study on the basis of their working, architecture and the number of iterations or cycles used in these algorithms to ensure security.

Keywords : Blowfish, Twofish , IDEA, RSA, DES, AES.

I] Introduction:

Cybersecurity is the body of technologies, processes and practices designed to protect networks, computers, programs and data from attack, damage or unauthorized access. In a computing context, security includes both cybersecurity and physical security.We will see following algorithms to obtain cyber security.

A] DES:

The Data Encryption Standard (DES) is an outdated symmetric-key method of dataencryption.

DES works by using the same key to encrypt and decrypt a message, so both the sender and the receiver must know and use the same private key. Once the go-to, symmetric-key algorithm for the encryption of electronic data, DES has been superseded by the more secure Advanced Encryption Standard (AES) algorithm.
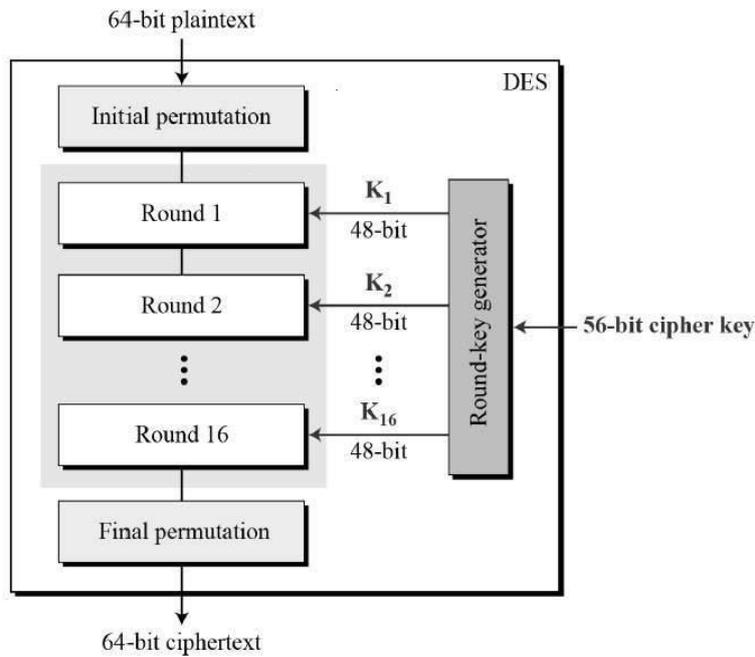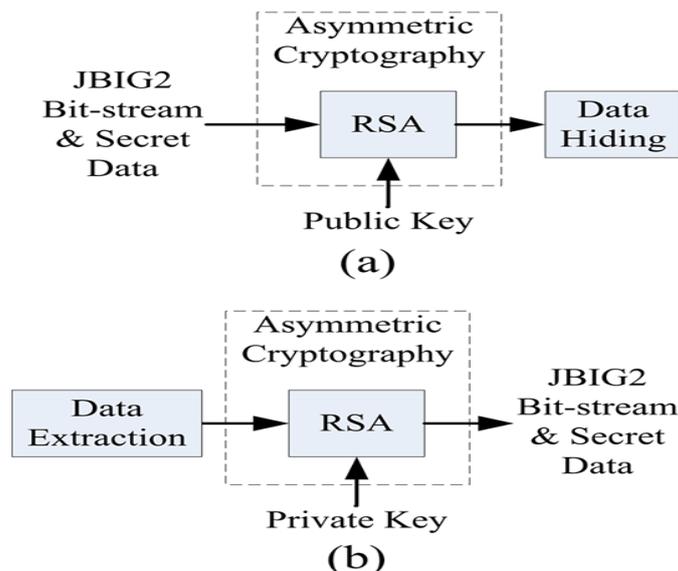
Source : Google images

B] RSA:

RSA is a public-key encryption algorithm and the standard for encrypting data sent over the internet. It also happens to be one of the methods used in our PGP and GPG programs.

Unlike Triple DES, RSA is considered an asymmetric algorithm due to its use of a pair of keys. You've got your public key, which is what we use to encrypt our message, and a private key to decrypt it. The result of RSA encryption is a huge batch of mumbo jumbo that takes attackers quite a bit of time and processing power to break.

Source : Google images

C] Twofish :

Computer security expert Bruce Schneier is the mastermind behind Blowfish and its successor Twofish. Keys used in this algorithm may be up to 256 bits in length and as a symmetric technique, only one key is needed.

Twofish is regarded as one of the fastest of its kind, and ideal for use in both hardware and software environments. Like Blowfish, Twofish is freely available to anyone who wants to use it. As a result, you'll find it bundled in encryption programs such as PhotoEncrypt, GPG, and the popular open source software TrueCrypt.
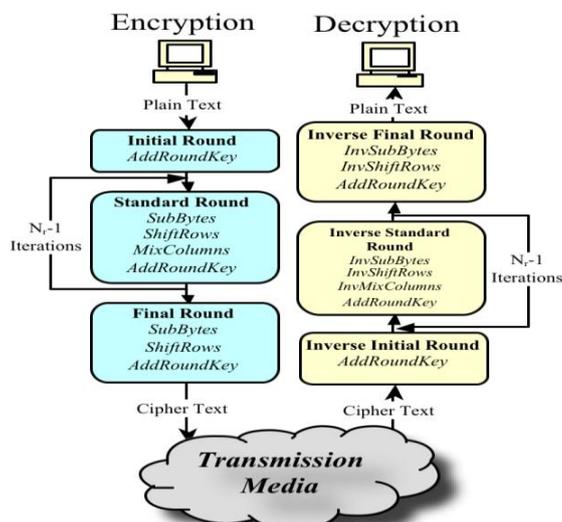
Source : Google images

D] Blowfish :

Blowfish is yet another algorithm designed to replace DES. This symmetric cipher splits messages into blocks of 64 bits and encrypts them individually.

Blowfish is known for both its tremendous speed and overall effectiveness as many claim that it has never been defeated. Meanwhile, vendors have taken full advantage of its free availability in the public domain.

Blowfish can be found in software categories ranging from e-commerce platforms for securing payments to password management tools, where it used to protect passwords. It's definitely one of the more flexible encryption methods available.
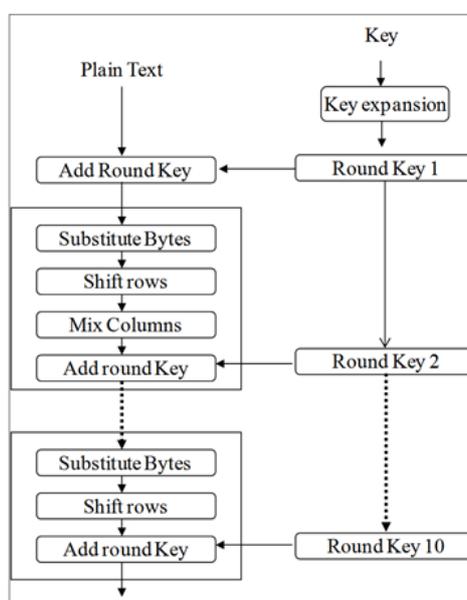
Source : Google images

E] AES :

The Advanced Encryption Standard (AES) is the algorithm trusted as the standard by the U.S. Government and numerous organizations.

Although it is extremely efficient in 128-bit form, AES also uses keys of 192 and 256 bits for heavy duty encryption purposes.

AES is largely considered impervious to all attacks, with the exception of brute force, which attempts to decipher messages using all possible combinations in the 128, 192, or 256-bit cipher. Still, security experts believe that AES will eventually be hailed the de facto standard for encrypting data in the private sector.
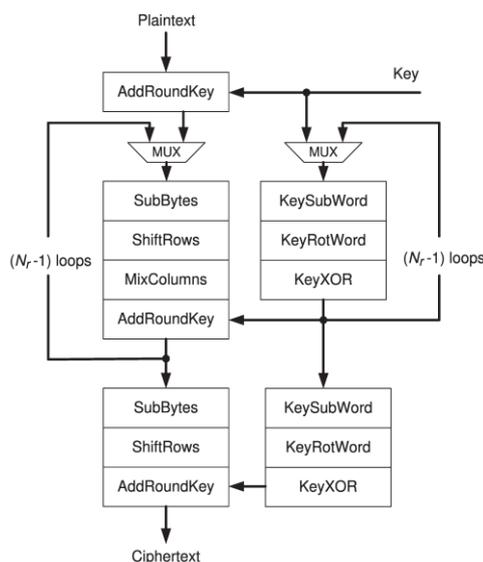
Source : Google images

F] IDEA:

The block cipher IDEA operates with 64-bit plaintext and cipher text blocks and is controlled by a 128-bit key. The fundamental innovation in the design of this algorithm is the use of operations from three different algebraic groups. The substitution boxes and the associated table lookups used in the block ciphers available to-date have been completely avoided. The algorithm structure has been chosen such that, with the exception that different key sub-blocks are used, the encryption process is identical to the decryption process.

Source : Google images

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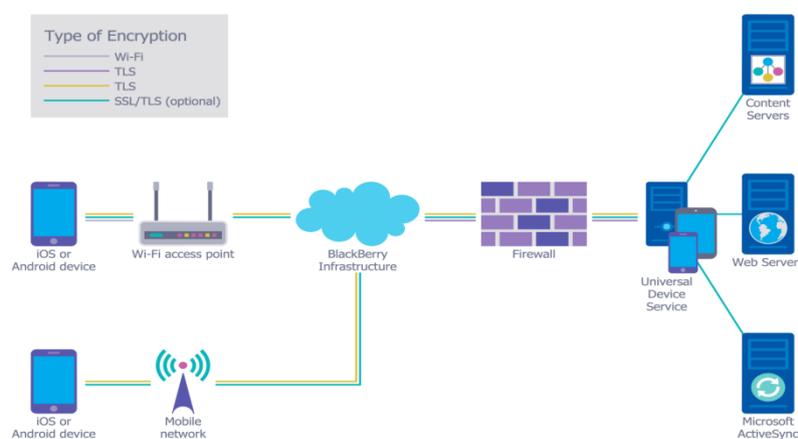
II] Observations and Conclusion:

As per our study we derive following conclusion,

1] As per digital India concept, the process of digitalization has increased tremendously in recent days.

2] While making digitalization, maximum applications are made up of web based or internet based.

3] As issues of internet has increased in all the disciplines, the issue related to security arrised.

4] There are so many security organizations who have designed and implemented various security based solutions where in use of security based algorithms played an important role.

5] There are thousands of network based protocols but we brought few in study such as Blowfish, RSA, IDEA, AES etc.

6] As per our observation, it has observed each algorithm plays an appropriate role of appropriate location and all these algorithms are designed considering a certain application areas.

We can not say that a particular algorithm is best or worst but they plays equal roles as per the scale, scope or application.

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4]https://www.sciencedaily.com/releases/2013/11/131107103406.htm
5]https://www.google.com/patents/US6035280

"STACK-IN APPROACH FOR REQUIREMENT ELICITATION"

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Abstract:

In Present Scenario majority of software organizations are facing challenge of developing secure software systems.Traditional software engineering principles places very little concern on security issues because security for a software system has always been invitro. In current scenario there are large number of software available in market .Hence, there is need of implementing security in software.If we correct the very first phase of SDLC i.e. Requirement Elicitation then all phases will automatically get correct because all phases are dependent on one another. So,In this paper we will proposed a novel technique for requirement elicitation which will make the task of software development much easier and almost 80% of problems can be eliminated in the software by correcting the first phase of SDLC .

STATISTICAL ANALYSIS OF JUNK FOOD EATING TREND AMONG THE PEOPLE

Aniket Gole   **Pratiksha Ghadge**   **Ganesh Gholap**   **Pratiksha Hasure**

Indira College of Commerce and Science

Abstract:

This research paper deals with the study of eating habits of junk food and its consequences among the people of Pimpri-Chinchwad area on the basis of sample survey.Efforts are made to study the eating habits of junk food among different age groups. Unfortunately,today's world has been adapted to a system of consumption of food which has several adverse effects on health. Globalization have greatly affected one's eating habits and force to consume high calorie fast food.Eating habits of junk food and its consequence have been represented,so as to emphasize its ill effects. This research paper found evidence for effect of junk food on human body.

Keywords: Junk food, eating habits, popular, consequences.

Introduction:

The term junk food was introduced in 1950's. As it is the 21stcentury, "junk food" has become global. Junk food refers to food that contribute lots of calories and less nutritional value. As now-a-days due to busy schedule, people are not able to prepare healthy and nutritious food they go for faster and easier option i.e. junk food.

Also the ease of manufacturing and consumption makes the junk food market spread its influence so rapidly. Huge amount of money is spent on T.V advertisement by manufacturer to attract customers. No doubt that fast food have increased the diseases, obesity and mental problems, reduced level of concentration resulted from eating junk food.

Research shows that junk food is a convenient option for today's generation. Previousgenerations preferred healthy food than junk food as it does not contain more nutritional value. We may think that people might have stopped consumption of junk food due to itsadverse effect. But, through this research, it is observed that there is no effect on eating habit of people for junk food.

In this paper various results regarding most popular junk food,reason behind liking of junk food,frequency of eating junk food,amount spent on junk food in month, frequency of infirmity in month, amount spent for medicines in a month are tried to find out.

Objectives:

The following are the objectives behind this research:

1. To study the most preferred food among different age group and gender inPimpri-Chinchwad area.

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2. To know how many times people eat junk food in a month.
3. To study the amount spent monthly on junk food.
4. To understand the reason behind liking junk food.
5. To study frequency of getting ill.
6. To study the expenses on medicines.

Scope and method of the study:

This research is related to the survey based study on eating habits of different junk food. The survey was made in Pimpri-Chinchwad area on 966 individuals by using purposive and cluster sampling method and data was collected by using the interview technique. Purposive sampling for selecting Pimpri-Chinchwad area and within this region some societies as clusters were selected from which some families were selected. And then from selected families, all the families' members were interviewed for the said research study. Hence this research is based on only primary data.

Discussion/Data Analysis:

In this paper the date analysis is done on the basis of data mining technique and also by using spreadsheet which is the computer equivalent of a paper ledger sheet. Microsoft (MS) Excel is a spreadsheet application that is part of Microsoft Office. It enables calculation and display 0f complex mathematical formulas (functions) with a facility for extensive formatting.
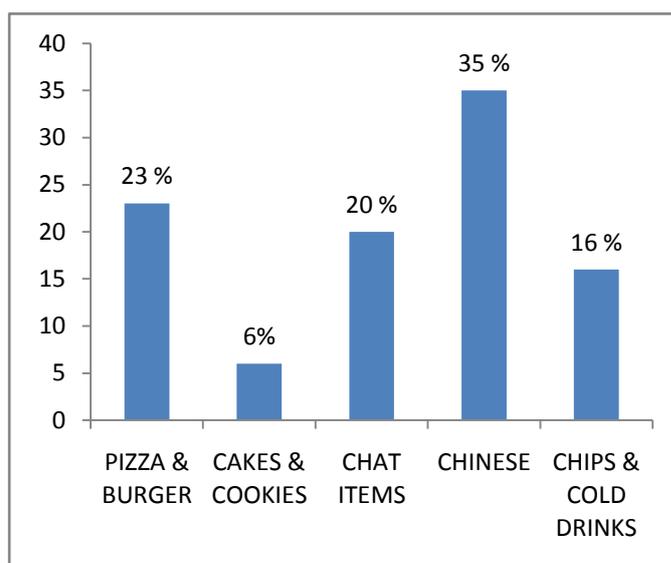
Analysis of data of population eating junk food for 966 individuals in the form of various tables, graph, percentage by statistical method are given below.
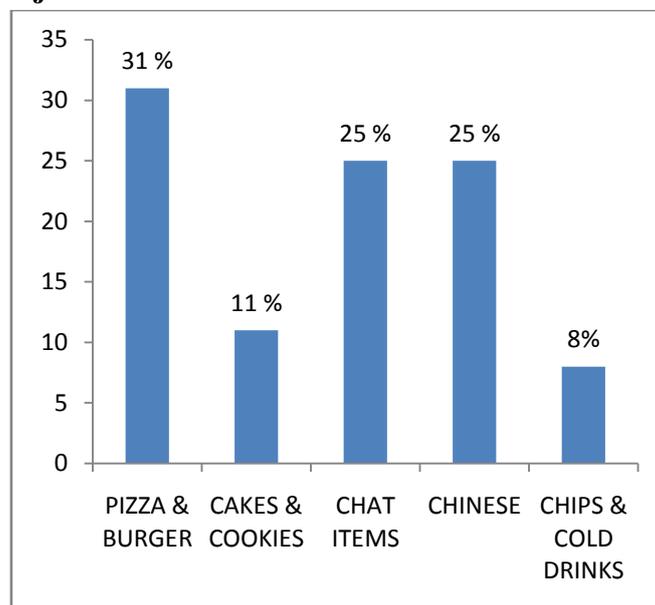
- **Most popular Junk Food among people:-**
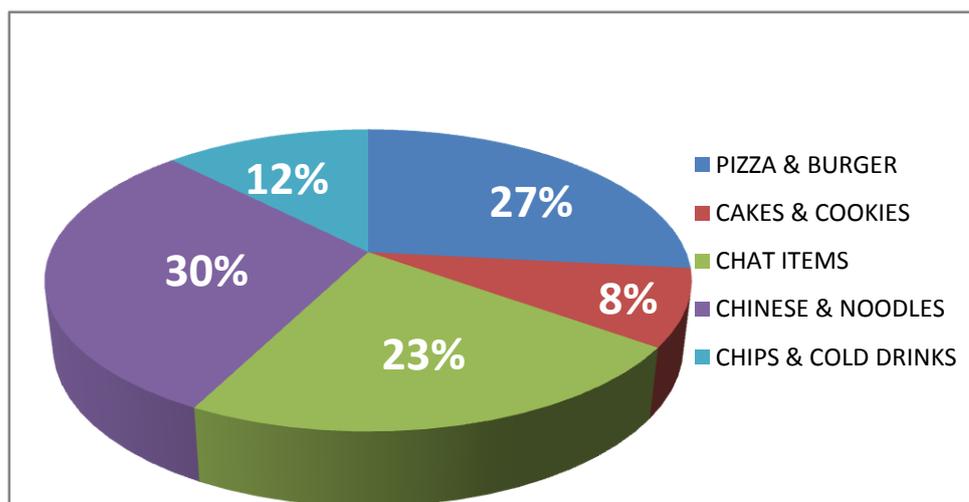
From this diagram, it is clear that ,the most popular and preferred junk food among the people isChinese which is found to be 30%.Pizza and Burger is the second junk food mostly preferred i.e. 27%.Bakery products are preferred least.

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- **Most popular junk food in males :-**

From this diagram, it is clear that, the most popular and preferred junk food among males is Chinese which is found to be 35%. Pizza and Burger is the second junk food mostly preferred junk food by males i.e. 23%. Bakery products are preferred least.

- **Most popular junk food in females:-**

This bar diagram show us that, the most popular and preferred junk food among females is Pizza and Burger which is found to be 31%. Chat items and Chinese both are preferred as second popular junk food by females i.e. 25%. Chips and cold drinks are preferred least.

- **Why do people like junk food :-**
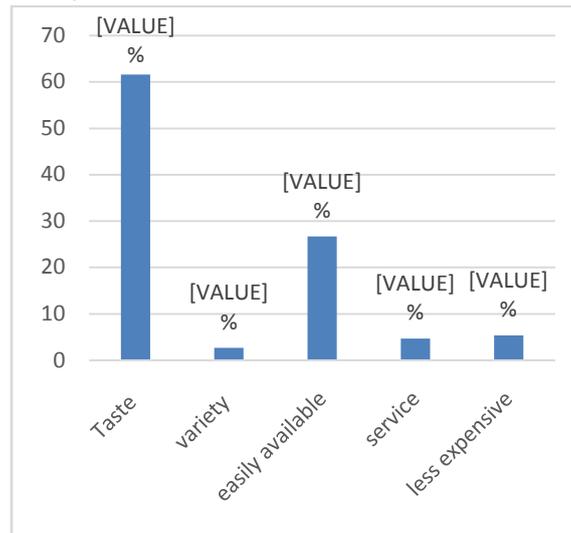
It is observed that 61.6% people like junk food because of its taste. 26.7 % people give priority to junk food as junk food is easily available in market. Other factors such as quick service, less expensive and variety attract people towards the junk food.

- **Monthly frequency of eating fast food :-**
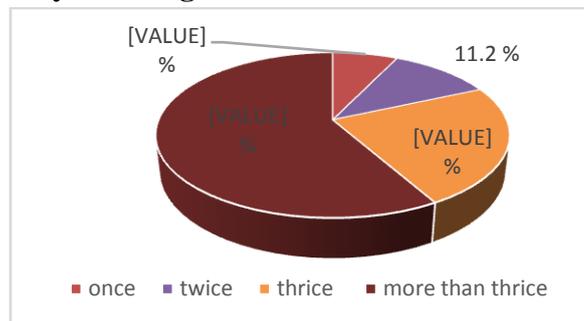
From the above diagram, it is clear all people eat junk food. But, more than half of the population i.e. 58.2% people consume junk food more frequently in a month.

- **Health problems:-**
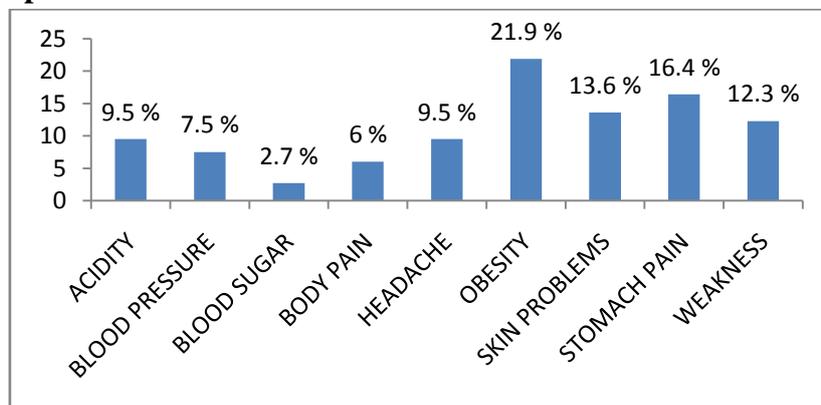
This graph shows that maximum people i.e. 21.9% people are affected by obesity.16.4% people face stomach problem. And 2.7% people have blood sugar

- **Frequency of illness :**
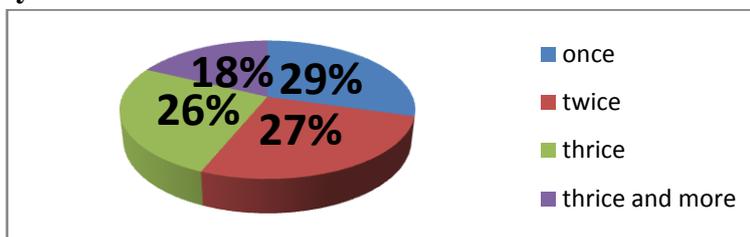
Above pie diagram reveals that frequency of people falling sick once in a month is 29%.27% people

are sick twice in month, And very few population i.e. 18% are ill more than thrice in a month.

- **Amount Spent on Medicine in month:**
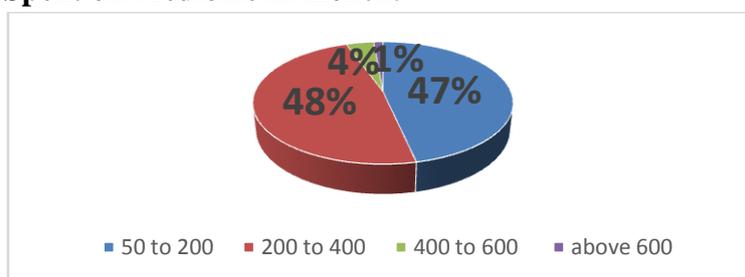
Above pie diagram concludes that 48% people spend Rs.200-400 monthly on medicine. Rs.50-200 is spend by 47% people. And the remaining of the population spend Rs.400 and above.

To test whether there is any dependency between gender wise liking of different types of junk food

Ho:

The two attributes i.e. liking of various types of junk food and the gender (male and female) are independent of each other.

H1:

The two attributes i.e. liking of various types of junk food and the gender (male and female) are dependent on each other.

To test the above hypothesis, we use chi-square test as follows:

From the data , we can distribute the people gender wise and different junk food type wise as follows:

	FEMALE	MALE	Total
PIZZA & BURGER	22	17	39
CAKES & COOKIES	8	4	12
CHAT ITEMS	18	15	33
CHINESE	18	26	44
CHIPS & COLD DRINKS	6	12	18
Total	72	74	N=146

Using this data, we get

chi-square calculated value=5.675299425

and

chi-square tabulated value=9.487729037

Thus, by comparing the above two values of chi-square calculated and tabulated, we can conclude that Ho is rejected.

Hence, we can come to the conclusion that The two attributes i.e. liking of various types of junk food and the gender (male and female) are independent of each other.

- **Conclusion:**

This study showed that most popular junk food is Chinese. This paper gave us an idea that mostly teenagers prefer junk food. Also it was observed that near about all people like to eat junk food. Also different gender prefer different fast food. People like junk food due to various factors such as taste, faster service, easy availability, cheap price.Eating unhealthy food leads to various health issues like obesity, stomach problems, etc. which results spending more amount on medicines. This paper reveals that people aren't optioning for healthy eating habits andmore fruits and vegetables, like they should.

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STATISTICAL ANALYSIS OF ONLINE SHOPPING TREND AMONG THE PEOPLE

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PranjaliAuti   **Anil Prajapati**
Indira College of Commerce and Science

Abstract:

This research paper deals with the concepts related to online shopping, the websites used and its increasing awareness among the people on the basis of sample survey conducted. Through this paper we made efforts to find out the exact use of online shopping, the age group mostly attracted to online shopping and the money spent etc. This paper also tried to find out about the most visited online shopping website and why there is an increase in online shopping. Also it gives proportion of people buying products as well as time and money that they save through this process. Even if traditional shopping is always the first choice of the people, online shopping yet made its way to become the people's first choice.

Keywords: Websites, expenditure,products,age group distribution,main attractions.

1. INTRODUCTION

Traditional shopping was the method in which people usually purchased products from shops.But as years passed by latest technologies were introduced and people started purchasing products on various websites which is called online shopping.Day by day the frequency of traditional shopping kept on decreasing as online shopping pawed its way into the light. Due to the wide variety of products available both teenagers as well as middle age people got attracted towards this e-commerce way of shopping. Through this project we tried to show various benefits of online shopping and how online shopping has created a mass difference in the field of shopping.

2. OBJECTIVES

The following are the objectives behind this research:

* To study the most popular website among the people.
* To study the age group attracted to online shopping.
* To know the money spent by the public to conduct shopping.
* To study the main attraction of online shopping.
* To know if the people are satisfied with the products that they received.
* To compare the usage of traditional shopping and online shopping.

3. SCOPE/METHOD OF THE STUDY

This survey was based on online shopping. It was conducted among the people frequently shopping using online websites. This survey was conducted among 500

individuals by using sampling method and data was collected by using interview technique. Within our own locality certain families were selected and then form the selected families each individual were interviewed for the said research study. Hence this research is based on only primary data.

4. ANALYSIS

Through the survey that we conducted we came to know about various facts about online shopping. Through this survey it was found that most of the people use online shopping occasionally and that through this e-commerce website mostly time and money is being saved. People mostly spend 2000-5000 rupees, while conducting transactions.

This survey also proved that **flipkart**was the website mostly visited by the publicand **Amazon** just behind it proving to be their second choice. **Myntra**received the maximum number of votes for providing best quality clothes along with **flipkart**providing the best quality and wide range of electronic accessories.

One of our main analysis showed us that teenagers were mostly attracted to online shopping along with middle age people who found this method useful during their busy schedule.

Analysis of data of population shopping online for 500 individuals in the form of various tables, graph, percentage by statistical method are given below:
**Expenditure**
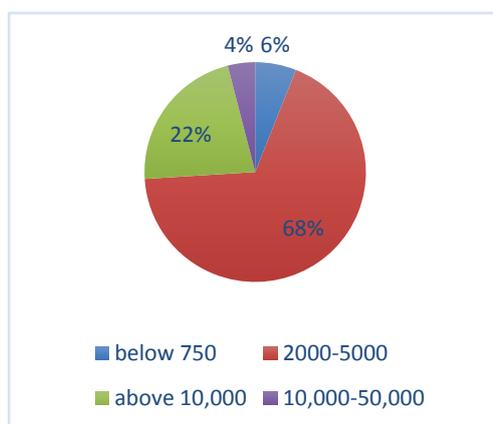
Through this graph it is clear that majority(68%) of the people spend 2000 to 5000 rupees for purchasing products online. we have also concluded that 22% of people spend money above 10000 while only 4% of people spend between 10000 to 50000.
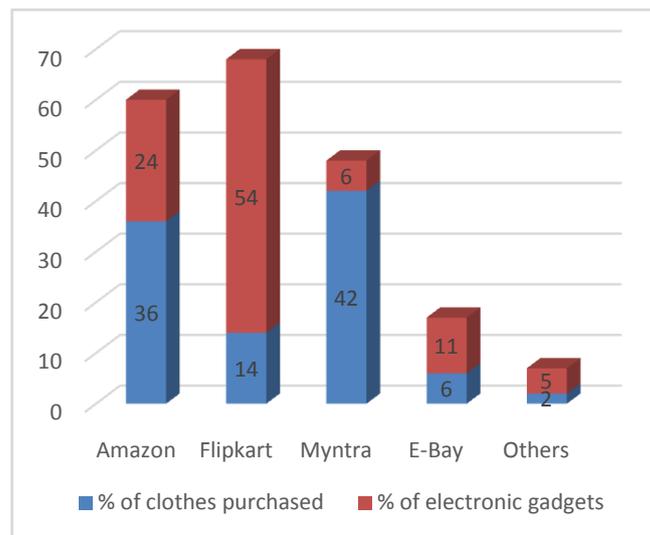
Shopping online
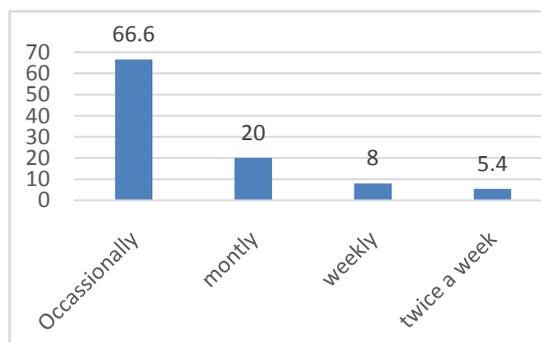
This graph shows that 66.6% of the people shop occassionally while 20% of the people shop monthly, with only 5.4% of people shopping twice a week.

Most visited websites:
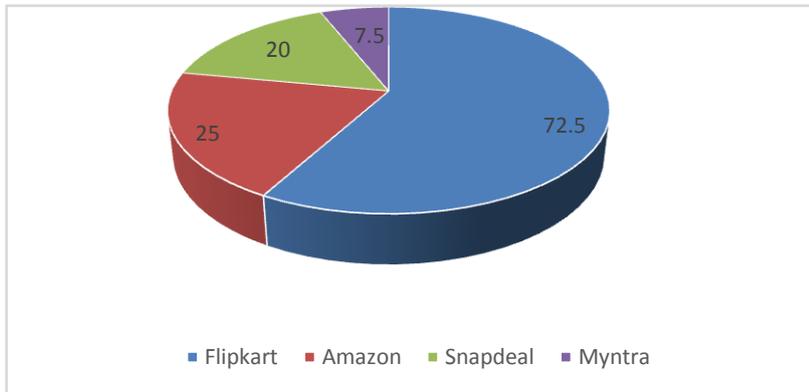
This chart reveals that 72.5% of people voted for flipkart while the least number of votes (7.5%)is given for myntra .

Proportion of clothes and electronic accessories purchased

This graph shows that myntra proved to be good for cloths while flipkart proved to be best for electronic gadgets. Amazon is good for purchasing both clothes as well as electronic gadgets.

Age group distribution
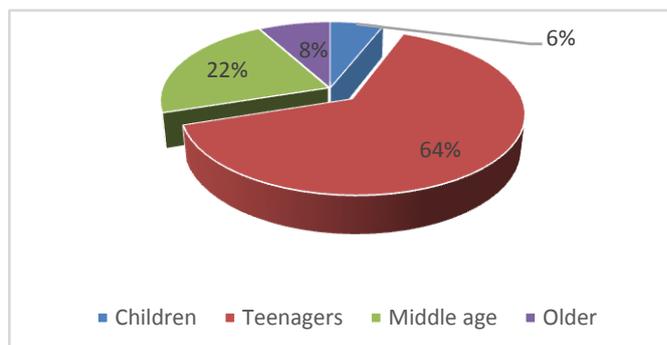
From this graph it is clear that teenagers are mostly attracted towards online shopping while children are least attracted. On an average basis middle age people also purchase the products online.

5. CONCLUSION

ADVANTAGES
- Choose products faster and easier at one place.
- Saves time of travelling to the vendor/seller's place.
- Good/Trusted & Tension free delivery services. Products bought online will be delivered to the footsteps of the buyer free of cost(may be varied based on the vendor/seller).
- Online stores are usually available 24 hours a day, and many consumers in Western countries have Internet access both at work and at home.

DISADVANTAGES OF ONLINE SHOPPING
- LACK OF OPTION
  In online shopping, you do not get the same item spread out in varied forms and shape, vying for your attention
- DECEPTIVE PICTURES
  What may appear to have a matte texture in the picture may actually turn out to be quite glossy and shiny in reality.
- NO BARGAINING

Online shopping does not offer us that liberty to bargain and we are bound to buy the item in the quoted price.

When we asked the people how confident they were about their personal details being safe on these websites they replied by saying that they were quite confident that their details were being safe.Majority of the people were satisfied by the products they received and only few of them received defective items. Return policy was found to be satisfactory by the public and quick home delivery was their main attraction for conducting online shopping. Paying money through credit cards were mostly preferred by the people and cash on delivery for the items that were less than 750 rupees..

Reviews proved to be helpfull to improve shopping at all grounds including clothes, mobile phones etc. 99% of the people didn't have any bad experiences while using these websites. After experiencing online shopping it was seen that most of the people recommended online shopping to their friends and dear ones. As for the quality of the products majority of them received excellent items with only a few receiving bad quality items. The use of online shopping has increased from past few years while reducing the frequency of traditional or physical method of shopping. In this way online shopping slowly made its way to become people first choice to buy products.

6. REFERENCES

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E-VOTING AND ITS SECURITY ASPECTS

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Abstract:

An Electronic voting (E-voting) system is a voting system in which the election data is recorded, stored and processed primarily as digital information. E-voting may become the quickest, cheapest, and the most efficient way to administer election and count vote since it only consists of simple process or procedure and require a few workers within the process. The main moto of this paper is to introduce the idea of the internet voting systems. It discusses different ways in which voters can vote, so that we introduce the concepts of E-voting system.This paper observes the security threats that may affect E-voting system. This paper discusses technical and security aspects of a good E-voting system and the importance of each attribute with respect to the voting process.

Keywords : E-voting,EML,threats, security, authentications schemes, integrity.

1. INTRODUCTION

An Electronic voting (E-voting) system is a voting system in which the election data is recorded, stored and processed primarily as digital information. The research on E-voting is a very important topic for the progress of democracy. If a secure and convenient E-voting system is provided, it will be used more frequently to collect people's opinion through cyberspace. Traditional paper-based voting can be time consuming and inconvenient. E-voting not only accelerates the whole process, but makes it less expensive and more comfortable for the voters and the authorities as well. It also, reduces the chances of the fraud. E-voting system will provide all basic features that conventional voting does, further should furnish more services in order to make the process more trusted and secure.

In this paper, we use the phrase "E-voting" to refer to E-voting over the internet. Unlike traditional voting systems in which voter choices and intentions are represented in form of a paper ballot or other means like a punch card, Internet Voting (I-Voting) uses electronic ballots that are used to transmit voters' choices to electoral officials over the internet. This paper focuses on introducing E-voting systems, requirements that E-voting system must meet, E-voting threats, challenges that can compromise the electoral process and some proposed E-voting solution.
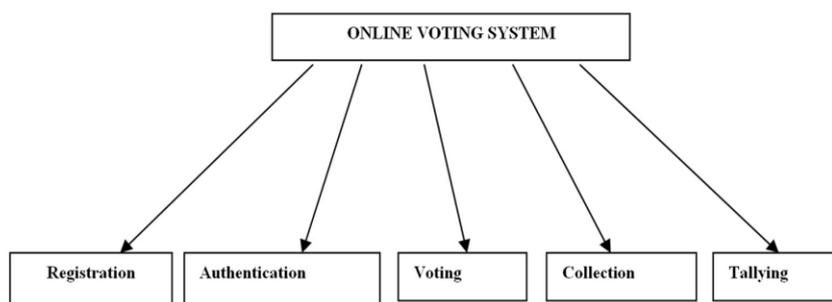
2. E-VOTING DESCRIPTION

Electronic elections are gaining more and more public interest. Some countries offer their citizens to participate in elections using electronic channels. Evoting is generally any type of voting that involves electronic means [7]. The letter E is associated with anything that involves web based or computers these days. However, the terminology of E-voting is nascent, and a crucial distinction lies between the various different ways in which voters can vote. E-voting is similar to classic "paper-form" voting. In classical "paper-form" voting voters entering the polling station have to be identified. If identification is passed, they are able to vote.

The main goal of e-Voting is to provide voters a good environment and convinience so that voters can cast their votes with minimum cost and efforts. There are so many properties that have been proposed to make the e-Voting secure process. Some of these properties are the followings which must be satisfied.

(1). *Eligibility*: Only eligible voters are permitted to cast their ballots.
(2). *Privacy*: There is no association between voter's identification and a marked ballot.
(3). *Uniqueness*: No voter can cast his ballot more than once.
(4). *Receipt-freeness*: A voter does not gain any information (a receipt) which can be used to prove to a coercer that she voted in a certain way.
(5). *Fairness*: No partial result is available before the final result comes out.
(6). *Verifiability*: Voters can verify that their ballots are counted correctly. There are two types of verifiability: individual verifiability and universal verifiability.
(7). *Uncoercibility*: No voter can prove what he voted to others to prevent bribery.
(8). *Efficiency*: The computations can be performed within a reasonable amount of time.

3. Need for Electronic Voting System

The main reason that people want to extend an electronic voting system is its mobility. People always prefer to cast their votes if they can cast votes from their computers at homes, offices, and schools. Besides, each election day the government spends much money on arrangements made for handling the crowds or other managements. If people can cast their votes from anywhere, not only the voter participation might increase, but also the government may save money.

4. Benefits of Electronic Voting System

The greatest potential benefit is the increase in speed of the ballot tabulation process. As the votes are stored digitally and the counting process is automatic, the waiting time for the results is reduced significantly. The increase in accuracy of the results is another advantage, but it depends on the kind of system used and the design and conditions of the hardware and software, as well as human behaviour (Fisher 2001). The accuracy of the results is threatened by security risks that in some cases are more devastating than the security risks involved in the traditional paper based voting systems.

In electronic voting, the ballots are designed through computer systems and hence it provides multiple language options on the ballot. If the system is user-friendly, then it will also offer more information about each candidate to help the voters in their selection. Electronic voting systems can eliminate common errors as under voting (voting for less than the allowed number of candidates) or over voting (voting for more than the allowed number of candidates). In case of an error, the system will display an error message to the voter and ask him or her to repeat the vote. These are the most important advantages of the electronic voting systems; the disadvantages involve many security issues (Bederson, 2003) that need to be analysed in detail.

5. E-Voting Threats

E-voting systems threats exist in many different forms; they can compromise an E-voting system in various ways. Different threats can compromise the various areas of security leading to untrustworthy systems.

5.1 *Denial of Service :*

Denial of Service (DoS) attacks that are carried out have devastating consequences and in most cases the extremely affect the ability to provide availability to a system.
.

5.2 *Virus :*

A computer virus is a computer program that can reproduce itself and may cause undesired effects in computers where it is active. To do its malicious work, the virus needs to get executed. Usually viruses are located together with other code that is likely, will be executed. by a user. As long as the virus is active on the computer, it can copy itself to other files or disks when they are used [3]. Viruses made could destroy E-voting systems. This could compromise the availability at election time forcing governments and institutions to perform re-elections.

5.3 *Worms :*

A worm is a type of virus that does not change any existing program or file to spread itself. Instead, it makes copies of itself within an infected computer and spreads to become active on other systems. It is intentionally destructive, overwriting portions of the files with random data [3]. This damage is nonrepairable, so files may need reinstallation or restoring from a backup. Worms could overwrite

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files and change results of votes if programmed to do so, brining the integrity of the votes into question.

5.4 Trojan Horses :

Trojan horses are pieces of computer code that download to a computer while connected to the internet. They may be harmless, but it could possibly delete or modify an important file from the computer, plant a harmful virus, or even steal user's passwords [3]. This makes all sorts of fraudulent schemes possible. Once inside a computer the Trojan horse can access passwords, screen names and other personal information and then distribute this confidential data to the attacker. Trojan horse represents an immense threat to systems confidentially and integrity of information of E-voting systems.

6. Technical and Security Attributes of a Good E-Voting System

The following is a description of desirable characteristics that should exist in any good E-voting system and the reason for each characteristic with respect to the voting process.

6.1 Accuracy :

"A system is accurate if :-
1). It is not possible for a vote to be altered.
2). It is not possible for a validated vote to be eliminated from the final tally.
3). It is not possible for an invalid vote to be counted in the final tally [1]".
Accuracy is one of the most important factors to any system. If the input is not correct, then the result will not be correct. Not only should the system be accurate in counting votes and maintaining the integrity of cast ballots, the system should be accurate in identifying voters.

6.2.Verifiability :

"A system is verifiable if anyone can independently verify that all votes have been counted correctly" [1]. Currently, many experts believe that the best method to verify votes and perform recounts is with paper ballots. In addition, the voter should be able to verify that their ballot is entered correctly and allow them to adjust their vote if necessary. The process needs to verify the validity of the voter as well. Perhaps the use of a nationwide database of registered voters' information and a method of non-intrusive biometrics could identify participants. The system should also, verify that the E-voting system has not been compromised.

6.3 Democracy :

"A system is democratic if:-
1). It permits only eligible voters to vote with their unique adhar card id/pan card.
2). It ensures that each eligible voter can vote only once [1]".
This characteristic can be accomplished by incorporating accuracy and verifiability. Currently, many counties require that voters vote in their own precinct so, that they

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can sign their name in the approved voter list. Some counties have implemented a database that tracks voters. A voter must be able to show proof of their identity, the database is then updated, which prevents that voter from going to another precinct and voting again.

6.4 Privacy :

Privacy is one of the most important properties of an information system must satisfy, in which systems the need to share information among different, not trusted entities [3]. "A system is private if :-

1). Neither election authorities nor anyone else can link any ballot to the voter who cast it.

2). No voter can prove that he or she voted in a particular way [1]".

Privacy is a concern to all users of a voting system. While it is important to have an audit trail available to verify the system, aggregate data should be accessible as opposed to an individual's vote. Some voters have problems using the voting machines, this requires that a staff volunteer assists them and this can interfere with the privacy of the voter. "The second privacy factor is important for the prevention of vote buying and extortion. Voters can only sell their votes if they are able to prove to the buyer that they actually voted according to the buyer's wishes [1]".

6.5 Convenience :

"A system is convenient if it allows voters to cast their votes quickly, in one session, and with minimal equipment or special skills [1]". The introduction of touch screens into the voting process was first used to aid the disabled population [6]. This increased convenience of touch screens could lead to higher voter participation and decreased time at the polls. If the system utilizes technology that society is already comfortable using, voters will perceive the system to be more convenient.

6.6 Mobility :

"A system is mobile if there are no restrictions (other than logistical ones) on the location from which a voter can cast a vote [1]". Mobility in the system could allow voters the capability of voting anywhere internet access is available. This characteristic is better suited for an online E-voting system. However, the designs of the physical machines need to be small enough to accommodate various polling locations where space could be an issue.

6.7 Reliability :

A system is reliable if it performs and maintains its functions continuously. Reliability in the system requires that there be alternative methods should failure occur. For example, in the event of a power failure, the system should have an uninterruptible power source or an alternative paper method. Many polls did not open on time because of machines malfunctioning.

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6.8 Consistency :

A system is consistent if it operates efficiently at each location, in each situation, and the functions perform exactly as designed [6]. Each voting machine must be an exact duplicate of the other to ensure consistency and quality control. This also, increases usability as the voting process does not vary between locations, especially important for our mobile society.

6.9 Social Acceptance :

A system has social acceptance if it has favorable reception and is perceived as being an effective system by the voting population [4]. It can be easy to overlook the users involved in a system. Even if the system is sound, users are what make or break the system. Perception is crucial. Currently, society views the majority of E-voting as inaccurate, unusable, and not private.

7. VOTING IN VARIOUS COUNTRIES

7.1 Argentina :

Argentina started an electronic voting system in 2003. This system is based on machines already used in Brazil. The electronic voting machines (EVMs) resemble ATMs. At the time of voting each citizen shows identity documentation at the voting place, and the registrar enters the voter's identity number at a keyboard with a display. If it appears "OK" on the display, the 39 person is approved to vote and goes behind a partition where the EVM is located (Kohno 2004).

The screen of the EVM shows the first office that the voter will vote for all the political parties that presented candidates, each paired with a number. The voter chooses his or her favourite by punching a key with the number of the chosen party. The next screen shows the name and photo of the chosen candidate. To confirm the selection, the voter punches a green key. If the voter wants to change the selection, he or she punches a red key. Once the selection has been made, the voter pushes a white key and then the green key to confirm. The system also permits voters to cast "blank" votes, which in Argentina are counted in order to calculate the percentage of votes obtained by each party. After completing a vote for a particular office, another screen appears with the following office to choose and continues until the ballot is completed. At this point the EVM disables, preventing a second vote (Ansper 2002).

7.2 Brazil :

In Brazil, the largest nation in South America, currently, all votes are cast by electronic voting machines. The Brazilian Supreme Electoral Court authorized the use of Electronic voting technology in the 1996 Brazilian municipal elections. In 2000, the Brazilian government had converted to fully electronic voting and deployed over 400,000 kiosk-style machines in elections that year. Voters in Brazil use an electronic voting device that, for each office, displays the choices and prompts the voter for his or her vote. The voting machines feature an integrated screen and keyboard. To vote for a candidate, voters only need to press on the keyboard the number designated for a particular candidate. The candidate's picture

then appears on 41 the screen. Voters can confirm, reject, choose another candidate or start the selection process again. The Brazilian electronic voting technology is unusual in that the voting machine itself tallies the votes once voting finishes, producing both digital and printed reports of the number of votes given to each candidate.

7.3 India :

In India first election using electronic voting is scheduled to hold from April 20 to May 10, 2004. India is the world's largest democracy with a population of more than 1 billion; India has an electorate of more than 668 million and covers 543 parliamentary constituencies, and will require more than one million electronic voting machines (EVMs). The legal approval in 1989 to allow the use of EVMs, they have been used in many state elections but never used an entire general election. Electronic Voting Machines prepared by Electronics Corp of India and Bharat Electronics. The EVM comprises two units, one for control by the polling staff and the other for the 45 use of voters. The balloting unit requires voters to press the button next to the candidate's name and symbol and the control unit records the vote. A light next to the button glows, and a short beep sound follows indicating the vote has been cast. The polling officer then presses a switch to clear the machine for the next voter. The EVM comes in a reusable carry pack, and can operate on a battery power source in remote areas. According to Election Commission officials, each EVM can record five votes minute or nearly 3,000 votes in a polling day .
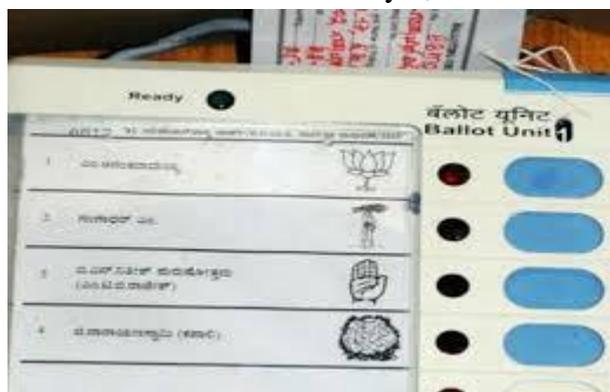
8. **Conclusions:**

   Therefore, we conclude that the existing system has some drawbacks that could be corrected by using some measures that are proposed above in the paper. Using this above measures the accuracy of voting systems can be improved.The systems will be accessed through internet which will increase the mobility of the voting systems,it will reduce the costs,also it will be time saving.Whereas the privacy is concerned, it will be maintained as the adhar card ID will be used as a unique key.Also the security will be maintained by following some of the measures proposed above.In I-voting the databases will be maintained and they will be authorised and authenticated for the all the members so that the high level privacy will be maintained.But it will not affect the counting of votes or any other required attribute.

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MALWARE INTRODUCTION AND PROTECTION TOOLS

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Abstract:

Today all worlds are connecting to each other through internet. There are many devices using in industry, military, hospital, school, college, government, bank etc. just like Computers,laptops,mobiles, server. There are all connected with through internet network through. These devices are connected through network that network devices sending and receiving data, information.This all happens in network through.Sometimes what happens somebody captured computer data, controlling system, doing destructing activities, without permission of owner. There are attacker attack on many ways on computer & Network. Therefore developer improving securities technique, software's for devices, networks. Every user understand that network security very important.

Keywords-Malwares, Types of Malwares, Detection techniques, Anti-malware Tools and comparison.

Introduction

All world peoples are connected through networks. Everybody knows understand that network security very important for protecting from attacker. Without security devices, networks are open free path for attacker to attacking on computers system & networks. This types attacks big issues for important data accessing and another person control your system. This attacks maximum times malwares through attacking on system and network. Malwares are many types come. Every type's malwares are doing similar and special action on computer systems and networks. This research on what types of malwares are using for attacking, how malwares attacking on computer system and networks, which types securities providing for after attacks and before attacks.

Malware

Malwares are just program code software.[8] Malwares is very big threats in today's computing world. Most malwares comes from internet through downloading times. Malwares has abilities to distrupt other executable code, gather sensitive information, data, and system control, create traffic network, display advertising on screen. Malwares are malignant softwares. it is designed to damage computer systems without the knowledge of owner using system, leaking information to remote user. Some malwares are itself again and again replicated, modifies code, change behavior, change signature. Therefore finding malwares in your system very difficult sometimes. There are many kinds malwares just likes virus, worm, Trojan horse, adware, logic bomb, bots, spywares, key loggers.
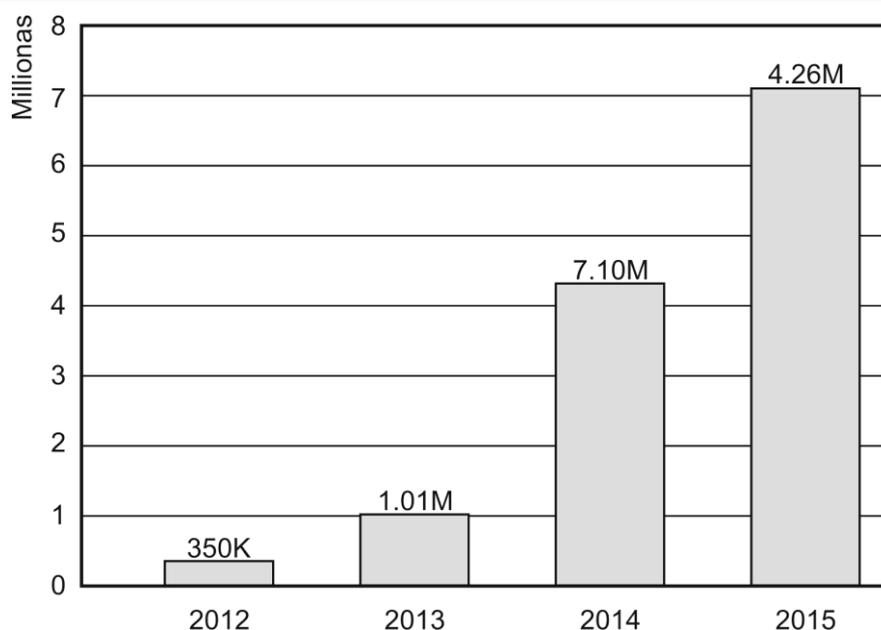
[1] **Figure: Android Malware Growth**

Type Of Malwares

Virus – Virus is type of malware.[2]Virus is capable of copy itself and spreading in all another computer system, devices and networks.Virus are just a program code that attach with particular files,executable code.When legitimate file means virus attaching file,executable code run or executed that time virus also execute the code.When virus executed that time doing destructive activities just like deleting files,corrupting file,folders,destroying data, Information.After destroying activities virus doing copying itself and attaching another file, spreading another ways for attaching somebody files in network.

Worm – Worm are just likes virus but not replication itself. Worm also doing disrupt computer system. Worm are attaching legitimate files and alter or destroy data. Worm are do not replicated themselves but the damage caused by worm just serious as virus. Worm are still destroy activities working on when the worm is not destroyed. When worm invasion is finded. Recovery is easy because there is only one copy of worm code file. After that file destroying since the replicating ability of virus is not present.

Trojan Horse - [2]Trojan horse are affected computer systems and networks than another types of malwares. it is common type of malware. Trojan horse program spreading through email, drive by download. Trojan horse given another party's malwares types to access to come to affected computer system. Attacker using Trojan horse send in target computer system accessing personal data, information just like user ID, password etc. Trojan horse crashing computer system, modification, corrupting deleting activities. After affected attacker can control your system else just like watching user screen, webcam, access control.

Adware – [2]Adware is frequently used of malicious. Which gives the advertisements on user computer as pop-up ads. Sometimes this popup ads are not closeable windows. Some adware are operates legally displaying advertisements when user online.

Malware Detection techniques
- Signature-Based malware detection
- Specification-Based detection
- Behaviour-Based detection
- Antivirus

Top Protection Tools and Comparison:

Windows

Software	Boot-time scans	CloudAV	Firewall	IDS	IPS	Email Security	AntiSpam	Web protection	Malware protection	Price
Sophos EndUser Protection	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Non-free
Panda Internet Security	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Non-free
McAfee Internet Security	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Non-free
Dr.Web Security Space	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Non-free
Dr.Web Anti-virus	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Trialware

Linux

Software	CloudAV	Firewall	IDS	IPS	Email security	AntiSpam	Web protection	Price
Sophos Anti-Virus for Linux	Yes	No	Yes	Yes	Yes	Yes	Yes	Free
AVG Linux Server Edition	No	No	No	No	Yes	Yes	No	Non-free
Panda DesktopSecure for Linux	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Non-free
F-Secure Linux Security	Yes	Yes	No	No	Yes	Yes	Yes	Non-free
Dr. Web Anti-virus for Linux	Yes	No	No	No	Yes	Yes	Yes	Trialware

Mobile

Android

Software	Firewall	AntiSpam	Web protection	Privacy Advisor	AntiTheft	Call/SMS Filtering	Price
Avast Mobile Security	Yes	No	Yes	Yes	Yes	Yes	Free
Avast Premier Mobile Security	Yes	No	Yes	Yes	Yes	Yes	Non-free
McAfee Mobile Security	No	No	Yes	Yes	Yes	Yes	Non-free
360 Mobilesafe	Yes	Yes	Yes	Yes	Yes	Yes	Free
Quick Heal Total Security	No	Yes	Yes	No	Yes	Yes	Free
Dr. Web Mobile Security Suite	Yes	Yes	Yes	No	Yes	Yes	Trialware
Kaspersky Tablet Security	No	No	Yes	Yes	Yes	Yes	Non-free

Conclusion:

Today dairy life every one using laptops,computers,smartphone etc. Every one putting own important private information in that devices so no anybody wants to anyone access this private data. Therefore security providing to your devices its main things. There are so many ways to providing security install good software of anti-malware. Keep every time up to date.Software companies gives the information on that's site new malware threats find.Always firewall on state. Every software of anti-malware not perfect removing all malwares. Any problems comes take helps from security experts.

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