Trinity Tech Review

Technologies That Matter

TRINITY INSTITUTE OF PROFESSIONAL STUDIES

Sector-9, Dwarka Institutional Area, New Delhi-110075, Tel: 011-45636921/22/23/24
Certified as "A" Grade Institution by SFRC, Govt. of NCT of Delhi

ISO – 9001:2008 Certified Affiliated
to GGSIP University

Advisors
Dr. R. K. Tandon
Ms. Reema Tandon
Dr. L. D. Mago

Editor-in-Chief
Dr. J. P. Singh

Editor
Ms. Himja Sethi

Trinity Institute of Professional Studies

An ISO 9001:2008 Certified Institution

(Affiliated to Guru Gobind Singh Indraprastha University, Delhi)

Sector-9, Dwarka, New Delhi-110075

Ph: 45636921/22/23/24, Telefax : 45636925
www.tips.edu.in, tips@tips.edu.in

TRINITY INSTITUTE OF PROFESSIONAL STUDIES

Sector-9, Dwarka Institutional Area, New Delhi-110075, Tel: 011-45636921/22/23/24
Certified as "A" Grade Institution by SFRC, Govt. of NCT of Delhi

ISO – 9001:2008 Certified Affiliated
to GGSIP University

STATEMENT ABOUT OWNERSHIP AND OTHER DETAILS OF TTR/TMR
FORM 5 (RULE 8)

1. Printer's Name		:	Dr. R.K. Tandon
Nationality		:	Indian
Address	:		Trinity Institute of Professional Studies Sector-9, Dwarka, New Delhi 110075

2. Place of Publication : Delhi

3. Periodicity of Publication : Quarterly

4. Publisher's Name		:	Dr. R.K. Tandon
Nationality		:	Indian
Address	:		Trinity Institute of Professional Studies Sector-9, Dwarka, New Delhi 110075

5. Editor's Name		:	Dr. J.P. Singh/ Dr. L.D. Mago
Nationality		:	Indian
Address	:		Trinity Institute of Professional Studies Sector-9, Dwarka, New Delhi 110075

6. Name and Address of the individual who owns the journal and partners or shareholders holding more than one per cent of the capital.　:　CHAIRMAN
Trinity Institute of Professional Studies
Sector-9, Dwarka, New Delhi 110075

7. Hosted at (url) : www.tips.edu.in

 I, Dr. R.K. Tandon, hereby declare that the particulars given above are true to the best of my knowledge and belief.

Dr. R.K. Tandon

Introduction

This is the first edition of the online technology themed journal published by Trinity Institute of Professional Studies, Dwarka (Affiliated by GGSIP University). The Journal will be published every quarter with the aim to bring to its readers the latest and the most novel technologies that are being developed a million times faster than human evolution itself. With every passing second, a new invention comes up claiming to have shaped the future of mankind. In this edition of TTR, we aim to bring to you such technological advancements and related issues that influence your daily life and the way you live. Our articles have been contributed by academicians and intellectuals in the field of Computer sciences and Information Technology. They have years of experience working with reputed educational institutes and the industry.

It gives me immense pleasure to present to you this edition. The theme for this edition is "Technologies that Matter" and it has content of the highest degree. The first article is about cloud computing and how it is influencing governance in a prominent way, especially in India. But what good is technology, if not put to good use? Our second article discusses traffic management and intelligent collision avoidance using ad hoc networks. Yet we cannot deny the flip side of technology and the way it is invading our lives and particularly our children. Therefore in the article – 'Impact of Internet Addiction on Academic Performance: A Study of Under Graduate Students', we shed light on the need to keep a tab on the usage of technology and avoid unnecessary engagement. The issue could not have been complete without touching the most important aspect of our lives, a revolution in the market space that we all know as e-Commerce. We showcase two very informative and crisp articles on the topic and its peripheral influences.

We sincerely hope you enjoy gaining insight into these significant areas of technology. Happy Reading!

Intelligent cloud computing architecture: an innovative step for e-governance

Kushagra Bhatia Vishwajeet Mishra

Abstract— The development of high speed Internet access, Web applications and Virtualization techniques have made Cloud computing a leading edge technology. A user in `Cloud' runs web based application over Internet via browser with a look and feel of desktop program. Data center works as backbone in Cloud computing where a large number of servers are networked to host computing & storage needs of the users. Many data intensive applications produce huge amount of data which travel on cloud network. In this paper, an intelligent & energy efficient Cloud computing architecture is proposed based on distributed data-centers to support application and data access from local data-center with low latencies. This proposed architecture is suitable to apply for E-Governance and provides a green eco-friendly environment for Cloud computing.

Keywords— **E-Governance, Cloud, ICT**

INTRODUCTION

Computer scientists have always been attempting and innovating a new technology that efficiently & effectively utilizes the contemporary underlying hardware resources for the benefit of the science and business community. Starting from mainframes to recent virtual machines on "Clouds", computational history experienced a trend of alternatively convergent and divergent patterns for the use of computing resources. Main objective of this paper is to discuss how to utilize the Cloud Computing (CC) applications for effective functioning of E-Governance activities. So, far technocrats as been utilizing various conventional based logical software applications for functioning of E-Governance. This paper describes the role of cloud computing standards and architectures in framing a good E-Governance strategy. E-services are delivering cost effective services, which can drive the growth of the economy and government productivity. Cloud computing provides a new service consumption and delivery model inspired by Consumer Internet Services. Cloud computing accelerates cost reduction benefit. The paper elucidates the benefits of cloud in rolling out E-Governance services. Proper planning, execution, training and good management could reduce overall costs to a great extent and help in more efficient utilizations of tax payer's money.

Cloud Computing for E-governance can:

- Reduce IT labor cost by 50%
- Improve capital utilization by 75%, significantly reducing license costs
- Provides much needed scalability

E-GOVERNANCE

E-Government is a digital interaction between a government and citizens, government and businesses, government and employees and also between government and governments/agencies [1]. Through E-Government, the internet and the world-wide-web are used for delivering government information and services to the citizens. The ultimate goal of the E-Government is to increased public services in an efficient and cost effective manner. E-government helps simplify processes and makes access to

government information more easily accessible for public sector agencies and citizens. In addition to its simplicity, e-democracy services can reduce costs [2].

E-Government allows government transparency because it allows the public to be informed about what the government is working on as well as the policies they are trying to implement. E-government increases voter awareness, which could lead to an increase in citizen participation in elections. E-governance refers to governance processes in which information and communications technology (ICT) play an active and significant role for efficient and effective governance, and for making government more accessible and accountable to the citizens. E-Governance has become an integral part of public sector transformation as Information and Communication technology (ICT) have helped to deliver more modern services for citizens and businesses. It stimulates the emergence of Information Society. Also drive public sector transformation and help governments prepare for future models of public administrations. ICT helps in providing new governance services and products for government. It increases participation of people. It also helps in better information dissemination.

As ICT has already become an integral part of everyday life. The challenge for the next generation of e-governance applications is to continue to improve public sector performance. The partnership with the various stakeholders for E-Government initiates can be in many areas such as: Financial Investment, Infrastructure Setup, Solution Architecture and Selection of Technology, Content Development and Management, roll-out of e-government project, software development, project management and assessment, capacity building etc. It describes the use of technologies to facilitate the operation of government and the disbursement of government information and services.

E-government uses electronics in government as large-scale as the use of telephones and fax machines, as well as surveillance systems, tracking systems such as RFID tags, and even the use of television and radios to provide government-related information and services to the citizens.

A. Types of E–Governance

On the basis of their relations between government and participants, the E–governance are divided into various categories:-

1) Government to Government (G2G): It includes the various functions of the government which necessitate the fulfilment of government. It is across the departments and it is between one government to another state government. For e.g. Toll Tax.

2) Government to Employee (G2E): It includes the technology which is used to enhance the government services to provide advantage to its citizen, business partners and employees.

3) Government to Business (G2B): It means government is providing benefits in business in terms of enforcement, tax collection etc.

4) Government to Citizens (G2C): It includes the strategy used for Customer Relationship Management(CRM) with business concept. It also provides the goods and services to accomplish the need of its citizens. E.g. UID, E-taxation, E-passport, E-procurement etc.

B. E- Governance Applications

The Government is the primary provider of all applications, giving its citizens, employees, state owned enterprises and others. E-Governance provide reliable services to all stakeholders, round-the-clock, with acceptable levels of performance. Some of the common E-Governance applications are listed here [5]:

1) E-Procurement: Automation of purchase and sale of supplies and services over the

internet for the Government and various governmental bodies.

2) HRMS: Government can configure payroll and benefit systems, create and management training systems and even track performance reviews. RMS can eliminate paper work, and helping the government in its go green initiatives.

3) E-Police: Providing easy access to information by making queries across databases of police stations across zones and states, for efficient policy. This increases safety mechanisms and helps provide better services too.

4) E-Court: E-Court facilitates integration of different courts, improves scheduling of cases and effective exchange of information between stake holders.

C.   Objective of E-Governance

The main objectives are:

1) To build an informed society: An informed society is an empowered society. Informed people can make a Government responsible. Therefore, providing access to all to every part of information of the Government and of public importance is one of the basic objective of E-Governance.

2) To increase Government and Citizen Interaction: Physically, the Government and Citizens hardly interact. The feedback amount from and to the citizens is very negligible. E-Governance wants at build a feedback framework, to get feedback from the people and to make the Government aware of people's problems.

3) To encourage citizen participation: True democracy requires participation of each individual people. Increased population has led to representative democracy, which is not democracy in true sense. E-governance wants to restore democracy to its true meaning by improving citizen involvement in the process

of governing, by improving the feedback, access to information and overall participation of the citizens in the decision making.

4) To make the Government accountable: Government is responsible and answerable for every act decision taken by the Government. E-Governance will help make the Government more accountable than now by bringing transparency's and making the citizens more informed.

5) To reduce the cost of Governance: E-Governance also wants to reduce cost of governance by cutting down on expenditure on physical delivery of information and services. It does away with the physical communication thereby reducing the time required for communication while reducing cost.

6) To reduce the reaction time of the Government: Normally due to red-tapism and other reasons, the Government takes long time to reply to people's queries and problems. E-Governance aims to reduce the reaction time of the Government to the people's queries and problems, because problems are basically Government's problems as Government is for the people.

D. Traditional Architecture

With traditional infrastructure, we need to ensure secure, application life, from development retirement. For making the application highly available, the part of development activity which could be resources across various government organizations support: It is another major concern as for each but for distributed data centres only one license for the application cannot scale and scalability demands change over time.
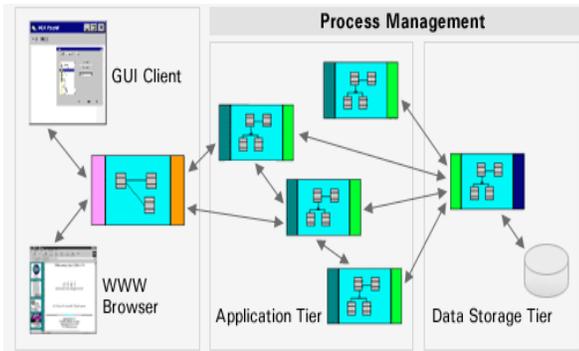
Fig.1. Architecture of E-Governance

Thereby making some of the hardware and central authority and traditional infrastructure incurs more costs when modification is required.

CLOUD COMPUTING

Cloud computing encompasses a whole range of services and can be hosted in a variety of manners which are depend on the nature of the service involved and the data/security needs of the contracting organization .Cloud computing is fast creating a revolution in the way information technology is used and procured by organizations and by individuals. According to the IEEE Computer Society Cloud Computing is: "A paradigm in which information is permanently stored in servers on the Internet and cached temporarily on clients that include desktops, entertainment centres, table computers, notebooks, wall computers, handhelds, etc". Cloud computing is the collection of scalable, virtualized resources, which is capable of hosting application and providing required services to the users and can charge as per the uses like utility. The main goal of cloud computing is to provide ICT services with shared infrastructure and the collection of many systems. Cloud computing provides infrastructure as a service, software as a service, platform as a service, network as a service, and storage of data as a service. The main philosophy of cloud computing is to provide every required things as a service. In order to be clearer, the services in the cloud can

be thought in layer architecture where various resources are available in different layers. Cloud services are available over the Internet in the whole world where the cloud acts as the single point of access for serving all customers. Cloud computing architecture addresses difficulties of large scale data processing.

B. Types of Cloud

Cloud can be of three types [8].

1) Private Cloud: This type of cloud is maintained within an organization and used solely for their internal purpose. Many companies are moving towards this setting and experts consider this is the first step for an organization to move into cloud. Security and network bandwidth are not critical issues for private cloud.

2) Public Cloud: In this, an organization rents cloud services from cloud provider on-demand basis. Services provided to users using utility computing model.

3) Hybrid Cloud: This type of cloud is composed of multiple internal or external cloud. This is scenario when an organization moves to public cloud computing domain from its internal private cloud.

C. Cloud Architecture

The cloud providers actually have the physical data centres to provide virtualized services to their users through Internet. The cloud providers provide separation between application and data. This scenario is shown in the Figure2. The underlying physical machines are generally organized in grids and they are usually geographically distributed. In the cloud scenario, virtualization plays an important role. The data centre hosts provide the physical hardware on which virtual machines resides. User potentially can use any OS supported by the virtual machines used.
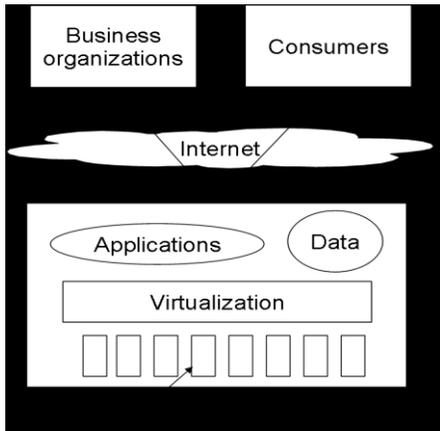
Fig.2. Cloud Computing Architecture

Operating systems are designed for specific hardware and software. It results in the lack of portability of operating system and software from one machine to another machine which uses different instruction set architecture. The concept of virtual machine solves this problem by acting as an interface between the hardware and the

operating system called as system VMs [13]. Another category of virtual machine is called process virtual machine which acts as an abstract layer between the operating system and applications.

Fig.3. Cloud Architecture

According to the concept of cloud computing, instead of purchasing hardware or software, a user purchases remote access to them via the Internet. There are three levels of cloud computing as shown in Figure 3:

Infrastructure as a Service – IaaS

Platform as a Service – PaaS

Software as a Service – SaaS

D. Types of utility cloud services

Utility computing services provided by the cloud provider can be classified by the type of the services. These services are represented as XaaS where we can replace X by Infrastructure or Platform or Hardware or Software or Desktop or Data etc. There are three main types of services most widely accepted – Software as a Service, Platform as a Service and Infrastructure as a Service. These services provide different levels of abstraction and flexibility to the cloud users. Now, we discuss some salient features of some of these models:

1) SaaS (Software as a service): Delivers a single application through the web browser to thousands of customers using a multitenant architecture. On the side of customer, it means no upfront investment in servers or software licensing; on the provider side, with just single application to maintain, cost is less compared to conventional hosting. Under SaaS, the software publisher (seller) runs and maintains all necessary

hardware and software. The SaaS customer accesses the applications through Internet. Google docs is a very nice example of SaaS where the users can create, edit, delete and share their documents and Google have the responsibility to maintain the software and hardware. E.g. - Google Apps, Zoho O_ce.

2) PaaS (Platform as a service): Delivers development environment as a service. Everyone can build his/her own applications that run on the provider's infrastructure that support transactions, uniform authentication and availability. The applications built using PaaS are offered as SaaS and consumed directly from the end users web browser which gives the ability to integrate or consume third party web

services from other service platforms. E.g. - Google App Engine.

3) IaaS (Infrastructure as a Service): IaaS service provides the users of the cloud higher flexibility to lower level than other services which gives even CPU clocks with OS level control to the developers. E.g. - Amazon EC2 and S3.

CLOUD COMPUTING FOR E-GOVERNANCE

In today's world it is very much necessary to make the proper use of an effective and advanced cloud computing in the way for an effective e-governance. Cloud Computing have technological, advanced, smart and feasible features to make its proper use in an e-governance. As Gartner predicted that 20% government offices use Cloud computing for its effective working. The governments of various countries due to its features like scalability, fast flexibility, compensate as per on demand and usage to software, storage, network and other stand of services makes it more widely used in e-governance.

An effective E-government system should be reliable, cost effective, ease to maintenance, satisfying other nonfunctional. Presently two main trends in the area of information technology influence e-government. The first is constant development of computer infrastructure which becomes more powerful with the less expense. The second trend is constant increase of user skills and knowledge of operating computers and the Internet. These trends enhance possibilities of providing electronic services both in the public and private sector. The private sector noticed that chance – development of e-economy and e-business, both B2B and B2C, accelerated. Governments can leverage the Cloud to bridge the communication divide, especially with those people that belong to the remote parts of the country. It could also be used to increase

interoperability between various government agencies, reduce redundancy, and monitor the effectiveness of government schemes. Transparency in Government can be achieved at a faster pace by adoption of Cloud. The Cloud has the potential of transforming this sector, to benefit not only the Government itself, but also millions of people. E-Governance with cloud computing offers integration management with automated problem resolution and manages security end to end.
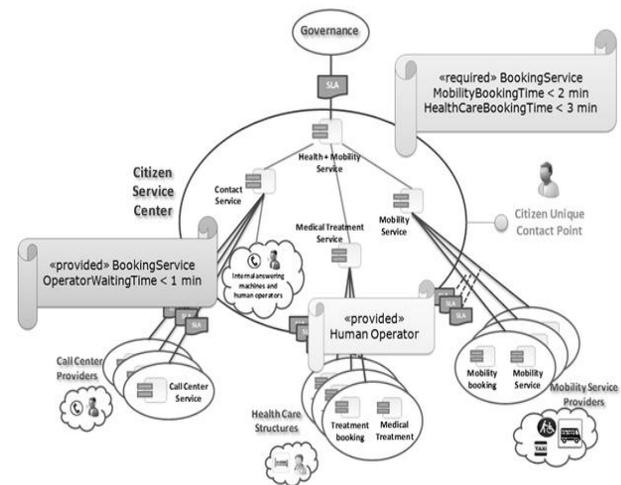

Fig.4. Cloud Computing and E-governance

Globally, Cloud architectures can benefit government to reduce duplicate efforts and increase effective utilization of resources. This helps the government going green and effective waste management. Enterprises and businesses are already reaping the benefits of cloud by using the pay-as-you-use service model, its large scalability and ready availability. Since government requires a large infrastructure it is important for government to use cloud computing on long term basis.

E. Proposed Cloud Architecture

Due to world-wide hype and rapid growth in associated technologies, cloud computing clients are continuously increasing. The large number of service requests to full fill the demands of millions of users will broaden the latency problem. Cloud service provider may be far

away from the customer physically, compelling data to travel from several mediums and network equipments, thereby imposing a time delay in getting Cloud services. Cloud providers use centralized data-center to host computing & storage needs of the clients. In this, an intelligent & energy efficient Cloud computing architecture is proposed based on distributed data-centers which form a client's instance in nearest neighbourhood and fulfill client's request in optimized latency.

1) Cloud Computing Model: In the proposed Cloud architecture data-centres work in master-slave paradigm. Nearest data-centres form a computing zone and users may opt for creating their instances in multiple zones. The main entities involved in proposed architecture are:

a) Master/Slave Data-Centre: Master data center is located at Cloud provider's administrative premises. In this, user's accounting on pay-as-you-go basis is completed. Slave data-center are geographically scattered to serve user's requests in minimum physical distance.

b) Users/Brokers: Users directly communicate or via brokers submit requests which automatically reach at master data-center. Master data-center creates user instance at appropriate slave data-center considering minimum latency.

c) Service Level Agreements (SLAs): Quality of Service (QoS) and pricing negotiations are settled through SLAs. Master data-center scans SLA each time to host needs of the users.
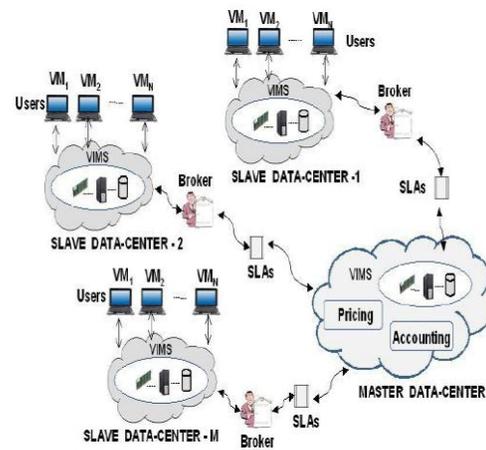

Fig.5. Proposed Cloud Architecture

F. Advantages of Cloud Architecture

In traditional architecture, the services offered are bound to a physical machine. This model increases the cost of deployment and becomes expensive to maintain with the number of services increase. Cloud computing provides:

- On-demand self sufficient services
- Ubiquitous network access
- Location independent resource
- Rapid elasticity

Cloud has following advantages:

- Can reduce IT labor cost by 50% in configuration, operations, management and monitoring.
- Can improve capital utilization by 75%, significantly reducing license costs.
- Decreases provisioning cycle times from weeks to minutes.
- Can reduce end user IT support costs by u to 40% up.

In a traditional infrastructure there will be one instance of application per physical server and has an average utilization of 10%. Cloud not only automates the maintenance and manual operations, but also raises the utilization rate by 50% and offers full virtualization.

CONCLUSION

Cloud computing is an emerging technology in which every services are available in the cloud.

Cloud is the collection of distributed computing devices. Cloud provides service through public and private clouds with the help of required technology such as, system approach, distributed system, service oriented architecture, grid computing and virtualization. The domain of cloud application is very big. E-Government system requires entities like, software, hardware, service, management, network, business, policy and security to survive and function properly. Cloud computing which treats all these entities as a service can be used in e-government system. Cloud computing can handle the above mention challenges and finally address global challenges of e-government system. Cloud helps enabling E-Governing services faster and cheaper thereby accelerating the adoption and use of Information Technology for e-services. The Cloud provides a solid foundation for the introduction of widespread provision of services to various stakeholders. Applications deployed in Cloud architectures will help the government to reduce operating costs and increase end user satisfaction levels. The Cloud will help to provide E-governance services faster and cheaper thereby accelerating the adoption and use of IT for e-services.

REFERENCES

[1] Cloud computing for e-governance. White paper, IIIT-Hyderabad, January 2010. Available online (13 pages).

[2] Katz, Andrew Konwinski, Gunho Lee, David A. Patterson, Ariel Rabkin, Ion Stoica, and Matei Zaharia. Above the clouds: A berkeley view of cloud computing. Technical Report UCB/EECS-2009-28, EECS Department, University of California, Berkeley, Feb 2009.

[3] F.M. Aymerich, G. Fenu, and S. Surcis. An approach to a cloud computing network. Applications of Digital Information and Web Technologies, 2008. ICADIWT 2008., pages 113 - 118, August 2008.

[4] M. Backus. E-governance in Developing Countries. IICD Research Brief, 1, 2001.

[5] D.C. Wyld, *Moving to the cloud: An introduction to cloud computing in government*. Washington, DC: IBM Center for the Business of Government, November 2009.

[6] David C. Wyld1, "The cloudy future of government IT: cloud computing and public sector around the world,"

International Journal of Web & Semantic Technology, vol 1, issue 1, January 2010.

[7] I. Foster, Yong Zhao, I. Raicu, and S. Lu. Cloud computing and grid computing 360-degree compared. Technical report. Grid Computing Environments Workshop, 2008.

[8] Vidyanand Choudhary. Software as a service: Implications for investment in software development. In HICSS '07: Proceedings of the 40th Annual Hawaii International Conference on System Sciences, page 209a, Washington, DC, USA, 2007. IEEE Computer Society.

[9] Simson L. Gar_nkel. An evaluation of amazon's grid computing services: Ec2, s3 and sqs. Technical report, 2007.

[10] S.L. Gar_nkel. Commodity grid computing with amazon's S3 and EC2. https://www.usenix.org/publications/login/2007-02/openpdfs/garfinkel.pdf, 2007.

[11] Bhaskar Prasad Rimal, Eunmi Choi, and Ian Lumb. A taxonomy and survey of cloud computing systems. Networked Computing and Advanced Information Management, International Conference on, 0:44{51, 2009.

[12]   J.E. Smith and R. Nair. An overview of virtual machine architectures. pages   1-20,   October   2001. http://www.ece.wisc.edu/~jes/902/papers/intr o.pdf.

[13]   R. Siva, Veera Atukuri, "Cloud Computing Technology for Effective e-Governance," International Journal of Computer Science & Information Technology, Vol. 3 (1) , 2012, 3241-3244.

JEEVAN- Traffic Control and Collision Avoidance through Vehicular Ad-hoc Network
Niti Aggarwal

1.   INTRODUCTION

VANETs (vehicular ad hoc networks) are emerging as a new network environment for intelligent transportation systems. Many of the applications built for VANETs will depend on the data push communication model, where Information is disseminated to a group of vehicles. [2] Vehicles Transformed into "Computers on the Wheels" or "Networks on the Wheel".

With the wireless technology becoming pervasive and cheap, several innovative vehicular applications are being discussed. We classify these applications into two categories –

•   Internet Related: Accessing emails, web browsing, audio and video streaming are applications where the emphasis is on the availability of high bandwidth stable internet connectivity.

•   Safety Related: Applications like collision alert, deceleration warning are applications where the main emphasis is on timely dissemination of safety critical alerts to nearby vehicles.

It is important to understand that the V2I communication model in VANETs assume the presence of limited or intermittent internet connectivity based approach in comparison to a pure V2V or a pure V2I based solutions and take a position that a tight integration of the V2V and V2I functionalities would become the most successful model for the future vehicular applications. We believe that the latency concerns related to the safety applications would be served by the high bandwidth, low latency V2V infrastructure and the delay tolerant internet connectivity based applications and the security concerns would be addressed through the V2I infrastructure.

The main factors that would influence the adoption of VANET architecture for future vehicular applications would be –

1) Low latency requirements for safety applications.

2) Extensive growth of interactive and multimedia applications.

3) Increasing concerns about privacy and security. [4]

2. SYSTEM DESCRIPTION

Vehicular Communication Systems are an emerging type of networks in which vehicles and roadside units are the communicating nodes, providing each other with information, such as safety warnings and traffic information. As a cooperative approach, vehicular communication systems can be more effective in avoiding accidents and traffic congestions than if each vehicle tries to solve these problems individually.
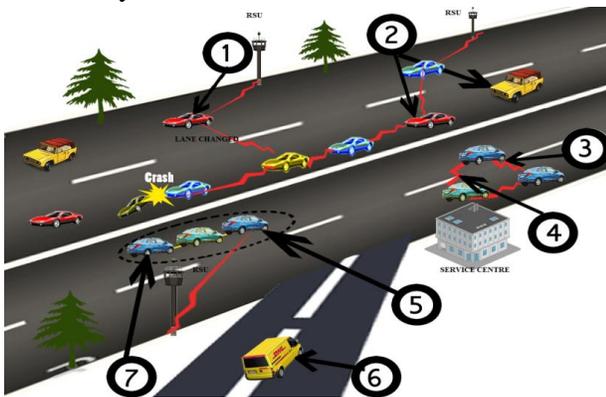

Fig.1 **How to control collision via vanet**

In figure1 Points are defined as:-

1. Detection of vehicle crash: emergency message broadcast to vehicle in zone of danger.

2. Drive through Internet: videoconferencing with overseas business partners.

3. "I am in your blind spot" messages erupted due to deep fade.

4. Vehicle cooperation triggered.

5. Vehicle platooning.

6. Look out! I am going to merge onto the highway.

7. Advertisement: service centre ahead.

Vehicle-to-Vehicle (V2V Communications) for Safety is the dynamic wireless exchange of data between nearby vehicles that offers the opportunity for significant safety improvements. By exchanging anonymous, vehicle-based data regarding position, speed, and location (at a minimum), V2V communications enables a vehicle to sense threats and hazards with a 360 degree awareness of the position of other vehicles and the threat or hazard they present calculate risk issue driver advisories or warnings or take pre-emptive actions to avoid and mitigate crashes.
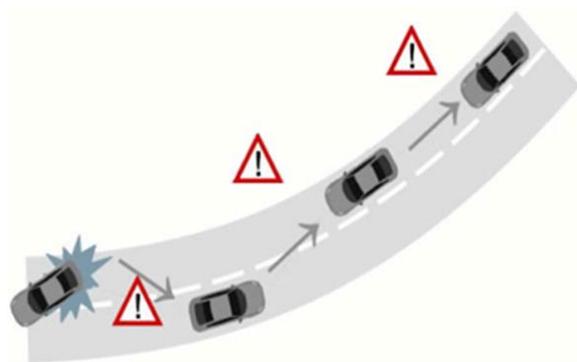
Fig.2 **Vehicle to Vehicle communication**

Vehicle-to-infrastructure (V2I) Communications for safety is the wireless exchange of critical safety and operational data between vehicles and highway infrastructure, intended primarily to avoid or mitigate motor vehicle crashes but also to enable a wide range of other safety, mobility, and environmental benefits. V2I communications apply to all vehicle types and all roads, and transform infrastructure equipment into "smart infrastructure" through the incorporation of algorithms that use data exchanged between vehicles and infrastructure elements to perform calculations that recognize high-risk situations in advance, resulting in driver alerts and warnings through specific counterm easures.

Fig.3 **Vehicle to Infrastructure Communication**

VANET Research Challenges-

1. Routing
Large end-to-end delays and decreased packet delivery ratio.

2. Security Frameworks
- Need lightweight, scalable authentication frameworks.
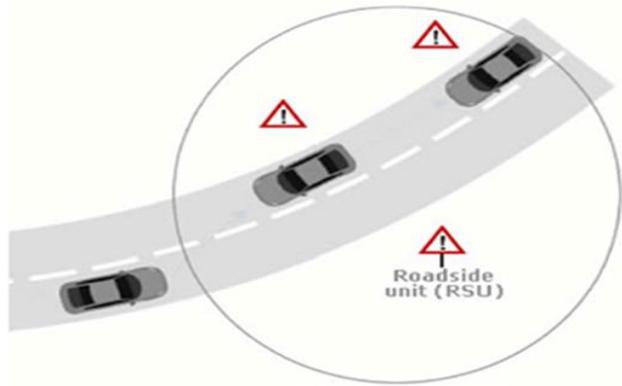- Need reliable and secureness.
- Need fast and low-cost message exchange facility.
3. Connectivity issues
- Need Highly Connected Network with less Traffic.

3. CURRENT WORKS IN VANET

- **Dash Navigation, Inc**. a start-up in Sunny Valley, CA started offering a service in 2009 called The Dash Driver Network that allows drivers to broadcast their location and speed in exchange for receiving updated traffic information compiled from other vehicles in the network.

  This system is centralized and relies on wireless internet connectivity which is not widely available on roads and highways around the globe. Because the collecting entity is a central, trusted location, privacy concerns are mitigated.

- **The CAR 2 CAR COMMUNICATION CONSURTIUM,** a non-profit organization initiated by European vehicle manufacturers with the objective of improving road traffic safety and efficiency published in 2007 a manifesto in which it proposes standards for V2V and V2I communications among other things.

- In 2008, **The European Union** deployed systems relying on V2V and V2I communications by reserving a radio frequency across the EU for vehicle applications aiming at enabling co-operative systems between carmakers.

- **The Google Driverless Car** is a project by Google that involves developing technology for driverless cars. The system combines information gathered from Google Street View with artificial intelligence software that combines input from video cameras inside the car, a LIDAR sensor on top of the vehicle, radar sensors on the front of the vehicle and a GPS position sensor attached to one of the rear wheels that helps locate the car's position on the map. Google anticipates that the increased accuracy of its automated driving system could help reduce the number of traffic-related injuries and deaths, while using energy and space on roadways more efficiently.

4. ROUTING METHODOLOGIES

1. In V2V communication, the collision warning messages are broadcast from vehicle to vehicle across multiple hops without the involvement of a roadside unit.

2. In case of V2R the warning messages are first sent to a roadside unit, and then broadcast by the

roadside unit to all vehicles in range.

3. In V2R/V2V Hybrid Model, Vehicles which receive a warning message via V2V communication will send it to a roadside unit if they did not receive a warning message with the same event ID from roadside units.

5. PROPOSED WORK

I am introducing a module ” JEEVAN” in which some vehicles like Ambulance can registered in VANET and can communicate with operator to inform its position in traffic in emergency . So, that operator can passes this information to traffic controller through some signals or other techniques which enables the lane in which Ambulance exists to move out earlier at that emergency time. This module can also be used to control traffic on roads. This module can also be used in major accidental cases in which any vehicle registered with VANET can inform operator regarding accident so that operator can inform registered ambulances to reach at accident spot and can also control traffic in that area.

6. PROPOSED MODULE

Ambulance Operator can search for nearest hospital in emergency case and can register patient details to save time prior to get admit in Emergency Ward. I have Develop modules in JAVA for operator to send Patient Details to Nearest Hospital like registration, patient detail, Nearest hospital finder etc and for hospital to Register Patient to bring needed Blood group bottles before his arriving at hospital Like Doctor Availability, Doctor Appoitment, Blood Bank Services and billing system in Installments etc.

Front End :Java

Back End:My SQL

7. MERITS

1.   It will improve the safety of vehicle.
2.   It will solve traffic problems which saves time and lives of people.

8. CONCLUSION AND FUTURE SCOPE

1. The implementation of the project will help in saving humanity.
2. Moreover this can be extended to large scale project from one city to nation as a whole.
3. It will save life in accidental and emergency cases.

4.   Hospitals can register with VANET to improve their services.

9. LIMITATIONS

Wireless connectivity issues because of presence of disturbing elements.This limitation can be resolve by using mobile networks. As this face less connectivity issues.

10. ACKNOWLEDGMENTS

REFERENCES

[1] Eugenio Giordano, Enzo De Sena3, Giovanni Pau1, and Mario Gerla1 , University of California at Los Angeles, California, USA. DEIS, WiLab - University of Bologna, Bologna, Italy. King's College London , CDSPR, London UK “VERGILIUS: A Scenario Generator for VANET.

[2] Tamen Nadeem, Pravin Shankar, Liviu Iftode “A Comparative Study of Data Dissemination Models for VANETs.” 978-1-4244-2519-8/10, 2010 IEEE.

[3] Thomas D.C. Little, Senior Member, IEEE, and Ashish Agarwal, Student Member, IEEE, Proceedings of the 8th International

IEEE Conference on Intelligent Transportation Systems

Vienna, Austria, September 13-16, 2005. "An Information Propagation Scheme for VANETs."

[4] Gayathri Chandrasekaran Department of Computer Science, "VANETs: The Networking Platform for Future."

Vehicular Applications Rutgers University.

Impact of Internet Addiction on Academic Performance: A Study of Under Graduate Students

Dr. Ritu Gandhi Arora

Abstract:

Internet had bought revolutionary change worldwide. Every information is available on a single click of a button. Internet has delimit the world and made a man able to access every information anytime, anywhere. It is a well known fact that excess of everything is bad, same way excess use of internet has also become a problem, especially among the teenagers. The researcher in the present study has tried to establish the relationship between internet usage and academic performance among the undergraduate students of professional institutions. The under graduate students studying in different professional institutions of Faridabad city (Industrial Hub of Haryana and growing education city) has selected as population for study. The research was conducted on 150 students including girls and boys both. Results of the study clearly indicated that internet usage among the students has been rising very fast also have negative impact on their studies if using uncontrollably. The study also shows that internet usage pattern of boys are quite high in comparison to girls. It was found that average to high use of internet positively influenced the academic achievement while no use and extremely high usage had a negative impact on academic performance of the students.

Key words: Internet addiction, academic performance, internet addiction disorder (IAD), virtual world, psychological effects.

Introduction:

The Internet is a system of interrelated computer networks that use the Standard Internet Protocol suit to serve billions of users worldwide, which consist of public, private, academic institutions-schools, colleges and business units. The main target of internet has always been the creation of connect and communication and no doubt internet has excelled beyond the expectations of the users. Any kind of information on any subject is available on the internet with a single click of a button. As per the available literature Students

(irrespective of age group) are among the top users who surf internet for making notes, assignments, research and entertainment. The internet increasingly becomes part of our day to day lives resultant most of the students are becoming internet addicted and suffering with internet addiction disorder. This disorder has received much attention over a period of time. Internet addicted person withdraw itself from society and family. Their social relationships, academic or occupational functioning may go down. Psychologists have identified several withdrawal Symptoms like depression, anxiety, confrontation, and belligerence along with various other addiction syndromes. Researches mentioned that more than 60% of people seeking treatment for Internet Addiction Disorder (IAD) claimed their involvement with sexual activities online. More than half are also addicted to alcohol, drugs; tobacco etc. people who develop problems with their internet use may start using internet on casual basis. Many of the institutes have also started restricting use of internet in hostels during night hours.

Rationale of the Study:

Now days, students find that the internet and computers are necessities. They need internet and computers to do their projects as part of their assignments. They feel that If they don't have computer they will get behind in this information age, even children in lower grades need computer with an internet connection to search their assignments. After all, today's teens have literally grown up with the internet and what may be considered "too much time online." Internet addiction disorder is a general term used to describe and obsession with the online world in which a user spends an excessive amount of time engaged in computer related activities. These activities may include chatting with friends, web surfing, social networking via Facebook or Linked In, online shopping, and playing video games. Internet addiction disorder (IAD) is a condition where an individual compulsively and almost always on productivity uses the internet and finds any attempt to limit its use distressing. No age group is unaffected to this addiction from teenage students to adults, can develop video game addictions. But it is more dangerous for teenagers, as they are not mature to understand the right and wrong of it. It is much obvious that when the children will spend much time on internet and busy in uncreative activities, their academic achievement may be adversely affected. The investigator wants to determine the degree or extent to which internet addiction is common among college graduates so that it can be controlled to ensure their good academic performance. Secondly, the research on internet addiction in college students has remained mostly limited to developed countries but in developing countries particularly in India studies on internet addiction is not showing healthy sign.

Objective of the Study:

The researcher in the present study determine the impact of internet addiction on academic achievement of the college under graduate students.

Research Methodology:

The research methodology adopted for this study was descriptive and statistical in nature. The under graduate students of various professional colleges of Faridabad was taken as sample for conducting this study. A stratified random sampling design was applied to target population. The investigation was conducted on 150 boys and girls students from different colleges of Faridabad. To access the level of internet usage among students, The Young's

Internet Addiction Test (YIAT), an instrument developed by Dr. Kimberly Young in 1998 was applied. The split half reliability of this tool is 0.859 and Cronbach's Alpha is 0.902. In order to determine the impact of internet on academic achievement of the students a self administered questionnaire was used. To analyze data SPSS 17.0 version was used. The mean, standard deviation and T test were the required statistics to determine and to test the hypothesis.

Analysis and Findings:

The present study makes extensive use of primary data gathered through 150 undergraduate students (both boys and girls), studying in six professional colleges of Faridabad. The respondents were between 18- 21 years of age. Out of the total sample the respondents were found to be in the ratio of 43: 32 percent on gender basis i.e. the majority of the respondents were male. **(Table 1)**

Table 1: Demographic Analysis of students

S. No.	Name of the College	Number of students	No. of Boys	No. of Girls
1	DAV Institute of Management	26	15	11
2	MR College of Engg. and Technology	21	13	8
3	Aggarwal College	20	11	9
4	Lingaya University of Science and Technology	21	11	10
5	Echelon Institute of Mgmt. ad	33	19	14
	Technology			
6	JB Knowledge Park	29	17	12
	Total	150	86	64

Descriptive Analysis:

Extent of Internet addiction among Under Graduate Students:

The results shown in Table 2 states that 46 students score less than 20 points in Young's Internet Addiction Test which is 30.6% of the total sample and have never or rarely use of internet. 48 students are average user (32%) scoring 20-49 points. 40 students use internet at very high rate and their score is between 50-79 showing highly usage pattern. Only 16 students (10.7%) had extremely high usage of internet, are actually internet addicted.

Table 2: Extent of Internet Addiction among students

S.No	Level of Usage	No. of students	Percentage (%)	Score as per YIAT
1	Rare	46	30.6	3-17
2	Average	48	32.0	20-49
3	High Usage	40	26.7	50-79
4	Internet Addiction	16	10.7	82-91

The above results clearly indicate that internet use is becoming a problem today though results shows that out of 150 students only 16 students are internet addicted which is not a good sign for future generations.

Comparison of Usage Pattern among Male and Female students:

The table – 3 reveals that there were 86 boys and 64 girl students. The mean score of the internet usage pattern of male students is 46.54 and that of female is 26.99.

Table 3: Comparison of Usage Pattern among on the basis of Gender

Gender	Number	Mean	S.D	t value	Sig. value
Male	86	46.54	27.08	5.967	0.01
Female	54	26.99	29.13		

The Standard Deviation score of boys is 27.08 which is more than the S.D of girls i.e. 29.13. t-values is 5.967 which is significant at 0.05 and 0.01 level. As per the results internet usage pattern of boys is quite higher than girl students. Results clearly show that boys are more addicted to internet than girls or the boys may have more access to internet facility.

Impact of Internet on Academic Achievement of Students:

It is noted that percentage marks obtained by students with average use i.e. 48 students (32%) were between 65-70% and that of the students with internet addiction (10%) was between 45-57% thus showing that average to high use of internet, positively influenced the academic achievement while no addiction and high usage had a negative impact on academic achievement. Statistically, this association was significant. It also verifies the fact that extreme usage of internet affects the academic performance of the students.

Conclusion:

For youth, the Internet posses a number of risks along with a massive amount of opportunities. The research explored that some of the internet risks facing youth are addiction, exposure to inappropriate material, cyber bullying and sexual solicitation. Despite these risks, the research also suggests that the Internet can be beneficial for college goers. It provides a vehicle to promote cognitive, social, and physical development. Although there are limits to which the Internet can be used as a means of learning, health promotion, and intervention delivery, nonetheless the Internet can be used to match more traditional methods of delivering information. Overall, research suggests that specific efforts are needed to counter online risks in order for youth to benefit from the many opportunities offered by the Internet. The research study found that out of 150 undergraduate students, internet usage pattern of 40 students is extremely high. Only 10 percent students are addicted to internet, though this is a small figure, but has a growing tendency. Results of t-test reveal that male and female students significantly differ in their internet usage pattern. Male students are more addicted to internet usage. This further mentioned that male students have more access to internet than the female students. In reality, virtual world is dominated by teenagers who log in early and forget to log out of the World Wide Web. They have Easy accessibility of internet even on their phones. Literature also mentions that 90% of the children in the age group of 14-20 are internet addicts and suffer from Compulsive Internet Usage (CIU). The usual behavior issues are lack of attention in studies and misbehaving with teachers as well as parents. It was observed that they are suffering from cyber addiction, which makes a child irritable and affects his academics and social relations.

References:

1. Adegboji, O.B., & Toyo, O.D (2006). The impact of the Internet on research: The experience of Delta State University, Abraka, Nigeria. *Library Philosophy and Practice, Vol. 8* (2), pp. 1-8

2. Ani, O.E. (2005). Evolution of virtual libraries in Nigeria: A myth or reality? *Journal of Information Science, Vol. 31* (1), pp. 66 – 69

3. Audu, C. (2006). Internet availability and use by postgraduate students of University of Nigeria, Nsukka. *Global Review of Library & Information Science, Vol. 2, pp.* 34-43

4. Brenner, V. (1997), Psychology of computer use: XLVII. Parameters of internet use, abuse, and addiction: The first 90 days of the Internet Usage Survey. Psychological Report. Vol. 80, pp. 879-882.

5. Cao, F., Su, L. (2007), Internet addiction among Chinese adolescents: prevalence and psychological features. Child care, Health & Development, Vol. 33, pp. 275-281.

6. Daramola, I.S. (2004). Knowledge and skills possessed by technical collage graduate of building technology trade in Taraba State. *Journal League of Researchers in Nigeria , Vol.4* (1), pp.62-74

7. Davis, R.A. (2001), A cognitive behavioral model of pathological internet use (PIU). Computer in Human Behavior, Vol. 17, pp. 187-195.

8. Ernst, M., Pine, D.S., Hardin, M. (2006),Triadic model of the neurobiology of motivated behavior in adolescence. Psychological Medicines, Vol. 36, pp. 299-312.

9. Fatoki, O.C. (2004). Impact of library resources and the Internet on undergraduate students research, University of Ibadan, Nigeria. *Nigerian Libraries, Vol. 38* (1), pp. 21-33.

10. Grant, J.E., Potenza, M.N., Weinstein, A., Gorelick, D.A. (2010), Introduction to behavioral addictions- A Drug Alcohol Abuse, Vol. 36, pp. 233-241.

11. Jang, K.S., Hwang, S.Y., Choi, J.Y. (2008), Internet addiction and psychiatric symptoms among Korean adolescents. Journal of School Health, Vol. 78, pp. 165-171.

12. Nalwa. K, Anand. AP. (2013), Internet Addiction in Students: A cause of concern. Cyber-psychology Behavior, Vol. 6, pp. 653-666.

13. Seo, M., Kang, K.S., Yom, Y.H. (2009), Internet addiction and interpersonal problems in Korean adolescents. Computer Information, Vol. (27), pp. 226-233.

14. Young, K.S. (1998), Internet Addiction: The emergence of a new clinical disorder. Cyber-psychology Behavior, Vol. (3), pp. 237-244.

15. Young, K.S. (2004), Internet addiction: A new clinical phenomenon and its consequences. A Behaviour Science Journal, Vol. 48, pp. 402-415.

Cyber Laws and E- Commerce

Vikrant Sardana

Cyber Laws in India
Need

The very anonymous nature of the Internet creates a huge scope of its misuse and increases the chances of turning this successful invention into a disastrous medium of crime. The technical savvy people with their internet intelligence have mastered the skills of using internet as a trick for fulfilling their criminal intentions. Hacking your bank account & stealing all your money or spending from your Credit Card without even letting you know, are few of their frequently committed stunts. The founders of Internet would have fantasized of inventing an altogether platform for creating, converting, storing, sharing, searching information worldwide, but it could be used as a "technical nightmare" might not be their wish at all.

The Internet has become a basic need of everyone. Today we have confidential emails in our in-boxes, family photographs on social media websites, business details on our domains, financial information on our bank's websites, credit card details on e-commerce websites and the list goes on. They make our life easier but it is equally easier for someone to misuse them. This bitter truth justifies the need of Cyber Laws.

Introduction

The legislature which regulates the Cyber Laws in India, Information Technology Act, 2000, is an act to provide legal recognition for transactions carried out by means of electronic data interchange and other means of electronic communication, commonly referred to as "electronic commerce" or "e-commerce", which involve the use of alternative to paper-based methods of communication and storage of information to facilitate electronic filing of documents with the Government agencies and further to amend the Indian Penal Code, Indian Evidence Act, 1872, the Banker's Books Evidence Act, 1891 and the Reserve Bank of India Act, 1934 and for matters connected therewith or incidental thereto.

Applicability and Non-applicability

Information technology Act, 2000 extends to the whole of India. It means any transaction or activity caused in India, where a computer or network is the source, tool, target, or place of the transaction or activity taking place, comes under the purview of this Act.

However, the IT Act-2000 does not apply to the following:

(a) A negotiable instrument as defined in section 13 of the Negotiable Instruments Act, 1881;

(b) A power-of-attorney as defined in section 1A of the Powers-of-Attorney Act, 1882;

(c) A trust as defined in section 3 of the Indian Trusts Act, 1882;

(d) A will as defined in clause (h) of section 2 of the Indian Succession Act, 1925 including

any other testamentary disposition by whatever name called;

(e) Any contract for the sale or conveyance of immovable property or any interest in such property;

(f) Any such class of documents or transactions as may be notified by the Central Government in the Official Gazette.

Cyber Crimes & how they work

Cyber crime or Internet crime is crime committed on the Internet, using the Internet or by means of the Internet. Computer crime embraces such crimes as phishing, credit card frauds, bank robbery, illegal downloading, child pornography, scams, cyber terrorism, creation and/or distribution of viruses, spam and so on.

Internet crimes can be separated into two different categories. There are new crimes that are only committed while being on the Internet and are created exclusively because of the World Wide Web. The other type is the old typical crimes in criminal history like money laundering which are now being brought to a whole different level of innovation using the Internet. Such new crimes devoted to the Internet are email "phishing", hijacking or hacking domain names, damaging or stealing information through virus creation & distribution. Virus problems are now so common that we all have to face it today or the other day. Phishing is a cover faced email with the illusion that this email is from your bank or another bank. When a person reads this email

he is informed of a problem with his personal account or another individual wants to send the person some of their money and deposit it directly into their account. The email may ask for your personal account information and when a person gives this information away, they are financing the work of a criminal.

What is E-Commerce

Electronic commerce or E-Commerce is about doing business electronically. E-commerce is a term for any type of business, or commercial transaction that involves the transfer of information across the Internet. E-Commerce refers generally to all the forms of transactions related to commercial activities, including both organizations and individuals, that are based upon the processing and transmission of digitized data, including text, sound and visual images. It covers a range of different types of businesses, from consumer based retail sites, through auction or music sites, to business exchanges trading goods and services between corporations. E-commerce allows consumers to electronically exchange goods and services with no barriers of time or distance.

E-commerce encompasses many diverse activities including electronic trading of goods and services, online delivery of digital content, electronic fund transfers, electronic share trading, electronic bills of lading, commercial auctions, collaborative design and engineering, online sourcing, public procurement, direct consumer marketing, and after sales service. It involves both products (e.g. consumer goods, specialized medical equipment) and services (e.g. information services, financial and legal

services); traditional activities (e.g. health care, education) and new activities (e.g. virtual malls).

Thus, E-commerce refers to the paperless exchange of business information using Electronic Data Interchange, electronic mail, electronic funds transfers and other networked based technologies. E-commerce not only automates manual process and paper transaction but also help organisations move to a fully electronic environment and change the way they operate. For a business it is a strategy that improves external business relationships, whereas for a consumer it is a platform to get facilitated delivery of goods and services paperlessly & with lesser time & effort involved.

Electronic Fund Transfer (EFT)

One of the major aspects behind the success of e-commerce is that the financial transactions required for executing the trade takes place electronically through EFT. EFT is the groundwork of the cash-less and cheque-less culture. EFT is used for transferring money from one bank account directly to another without any paper money changing hands. EFT is considered to be a safe, reliable, and convenient way to conduct business.

Electronic Payment Portal

Payment portal or Payment gateway is an e-commerce application service provider that authorizes payments for e-businesses, online retailers. It is equivalent to a physical point of sale terminal located in most retail outlets. Payment gateways protect credit card details by encrypting sensitive information, such as credit card numbers, to ensure that information is passed securely between the customer and the merchant and also between merchant and the payment processor.

M-Commerce

M-commerce is a term that is used to refer to the growing practice of conducting financial and promotional activities with the use of a wireless handheld device. The transactions are conducted using cell phones, personal digital assistants and other hand held devices that are operated with Internet access. While still in its infancy, the concept of m-commerce has been refined in recent years and is beginning to become more popular. It is quite different from e-eommerce. Mobile phones impose very different constraints than desktop computers. But they also open the door to a slew of new applications and services. They follow you wherever you go, making it possible to look for a nearby restaurant or pay for items at a store.

E-commerce Security

Considering the sensitivity of information shared via e-commerce transactions and their pronity towards misuse, the security of e-commerce becomes essential. E-commerce security is the protection of e-commerce assets/data/information from unauthorized access, use, alteration, or destruction.

Following are the major threats faced in the e-commerce security and their counter measures:

Bird's Eye view on Indian E-Commerce Industry

Ecommerce industry, which started flourishing in India nearly ten years back with eBay acquiring Avnish Bajaj owned Baazee.com, an online auction portal, has come a long way indeed. It is, at present, one of the fastest

growing sectors of the Indian digital economy. Gartner predicts a 70% growth rate for the sector and expects $6 billion worth of business in 2015.

Praveen Sengar, research director at Gartner, however, lamented over the fact that inspite of the rapid boom in the industry, it is still at a nascent stage.

"Digital commerce is at a nascent stage in India. However, India is one of the fastest growing eCommerce markets in Asia/Pacific" said Sengar. *"India represents a $3.5 billion market, growing at approximately 60-70 percent every year. It represents less than 4 percent of the total retail market. B2C eCommerce leads the market in India, while B2B is limited to organizations that drive online channels to integrate with their partners and distributors."*

Conclusion

Apprantly, the world has recognised the importance of IPR and their protection. Tuned with the world-wide scenario, India also has realized the value of IP and it is upheld very well by legislators, courts and the industry. The increasing penetration of internet coupled with increasing confidence in online transactions, have enlarged the scope for Cyber Laws. However in Cyberspace, innovations takes place very quickly and so is the frequency of cyber-crimes. All of this, ultimately creates more challenging environment for our legislature and law-makers. Further, the e-commerce is on its way to become an integral part of our life-style. The time is not far when it would hold a significant portion of our economical growth. In the near future the boundaries between "conventional" and "electronic" commerce will become increasingly blurred as more and more businesses move sections of their operations onto the Internet. The future of e-commerce in India can be more bright than imagined ever.

References

www.ncrb.gov.in, www.cyberlawsindia.net, www.icsi.edu, www.business-standard.com

Impact of e-commerce In Security Techniques

Priyanka Attri Roopal Kalra

Abstract: E-commerce security is the protection of e-commerce assets from unauthorized access, use, alteration, or destruction. Dimensions of e-commerce are: security-Integrity, Non-repudiation, Authenticity, Confidentiality, Privacy, and Availability. E-Commerce offers great opportunity, but also creates a set of new risks and vulnerability such as security threats. Information security, therefore, is an essential management and technical requirement for any efficient and effective Payment transaction, personnel information and accessing activities over the internet. In this paper we discussed with Overview of E-commerce security, purpose of ecommerce security, Different security issues in E-commerce, and proposed system for existing problem.

The proposed solution for the existing problem is outlined which focuses on generation of another password whenever there is suspicious activity or login detected and another solution would be focusing on generation of OTP using private key which would eliminate the security issues related to ecommerce.

Keywords: E-Commerce Security Issues, Integrity, OTP.

Introduction

E-commerce Security is a part of the Information Security framework and is specifically applied to the components that affect e-commerce that include Computer Security, Data security and other wider realms of the Information Security framework. E-commerce security has its own particular nuances and is one of the highest visible security components that affect the end user through their daily payment interaction with business.

Today, privacy and security are a major concern for electronic technologies. M-commerce shares security concerns with other technologies in the field. Privacy concerns have been found, revealing a lack of trust in a variety of contexts, including commerce, electronic health records, e-recruitment technology and social networking, and this has directly influenced users. Security is one of the principal and continuing concerns that restrict customers and organizations engaging with ecommerce. Web e-commerce applications that handle payments (online banking, electronic transactions or using debit cards, credit cards, PayPal or other tokens) have more compliance issues, are at increased risk from being targeted than other websites and there are greater consequences if there is data loss or alteration.

Security has become one of the most important issues that must be resolved first to ensure success of electronic commerce (e-commerce). The low cost and wide availability of the Internet for businesses and customers has sparked a revolution in e-commerce and an e-commerce application may address one or several phases of a typical business transaction, and there exist various possibilities to model these phases. For example, a possibility is to distinguish five phases of a business transaction. First, the

merchant makes an offer for specific (information) goods or services. Secondly, according to this offer, the customer may submit the request online. Thirdly, the customer makes a payment and the merchant delivers the goods or services to the customer. The handling of the payment may involve many ways, such as online banking, post office, and cash on delivery (C.O.D) and so on. Many organizations are exploiting the opportunities offered by e-commerce, and many more are expected to follow. Exemplary applications include online shopping, online banking and distance education, online game and virtual casinos, as well as Pay-TV and video-on demand services. Many businesses and customers are still cautious about participating in ecommerce, and security concerns are often cited as being the single most important barrier. This loss of trust on exchange online is being fuelled by continued stories of hacker attacks on e-commerce sites and consumer data privacy abuse. In this paper we discussed with Overview of E-commerce security, purpose of ecommerce security, Different security issues in E-commerce, and proposed system for existing problem.The proposed solution for the existing problem is outlined which focuses on generation of another password whenever there is suspicious activity or login detected and another solution would be focusing on generation of OTP using private key which would eliminate the security issues related to ecommerce.

Digital E-commerce Cycle

Security is very important in online shopping sites. Now days, a huge amount is being purchased on the internet, because it's easier and more convenient. Almost anything can be bought such as music, toys clothing, cars, food and even porn. Even though some of these purchases are illegal we will be focusing on all the item's you can buy legally on the internet. Some of the popular websites are eBay, iTunes, Amazon, flipkart, dell, Best Buy and much more.

Security Threats

Threat to confidentiality:

- Snooping: Snooping refers to unauthorized access or interception of data.
- Traffic Analysis: Information can be obtained by monitoring online traffic by collecting pair of request-responses to help her guess nature of transaction.

Threat to Integrity:

- Modification: After intercepting or accessing information attacker modifies the information.
- Masquerading/Spoofing: Attacker impersonates somebody else.
- Replaying: the attacker obtains a copy of a message sent by a user and later tries to replay it.
- Repudiation: In this sender or receiver later denies that they have sent or received the message.

Threat to Availability

- Denial of service(DOS attacks): Very common attack .It may slow down or totally interrupt the service of a system. Several strategies can be used attacker might send bogus messages and server crashes because of heavy load.
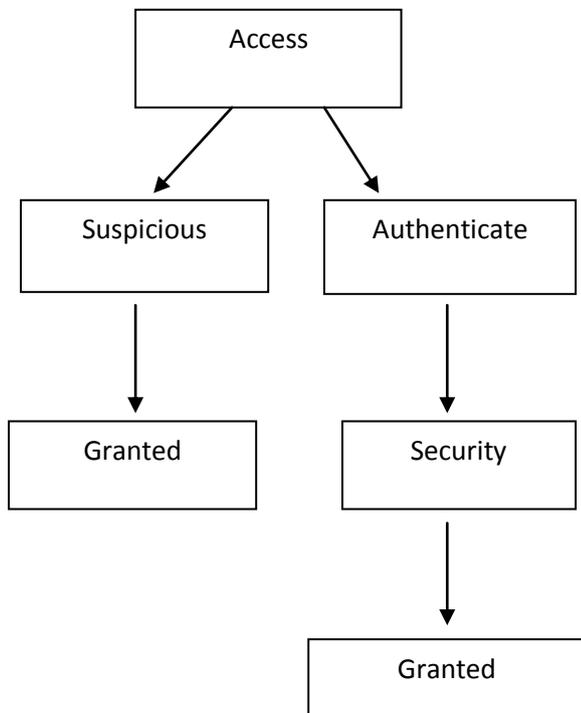
E-Commerce Security Tools

- Firewalls – Software and Hardware
- Public Key infrastructure
- Encryption software

5) Proposed Framework

1) Security Enhancement Technique without OTP

2) Security Enhancement Technique with OTP (Cryptographic Technique)

1)Security Enhancement Technique:- In ecommerce when user want to access login page then if he enters his password and user id ,if this process is authenticated i.e. the URL is secure or correct user is there so access is granted, but what in case of suspicious user.

```
          ┌──────────────┐
          │    Access    │
          └──────┬───────┘
          ┌──────┴──────┐
          ▼             ▼
   ┌────────────┐  ┌────────────┐
   │ Suspicious │  │ Authenticate│
   └─────┬──────┘  └─────┬──────┘
         ▼               ▼
   ┌────────────┐  ┌────────────┐
   │  Granted   │  │  Security  │
   └────────────┘  └─────┬──────┘
                         ▼
                   ┌────────────┐
                   │  Granted   │
                   └────────────┘
```

When any suspicious activity is registered by scanning its URL and the IP address is from unknown country then we add one more step of security by adding one time password (OTP) security phase.

In this phase the registered user have received OTP by entering this password the user can get his access. Now the access is granted.

By adding this new phase of security we can diffentiate the suspicious activity and have confirmation about the actual user and the details are not affected by any suspicious user.
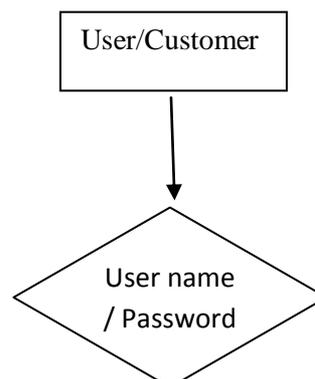
2) Security Enhancement Technique with OTP(Cryptographic Technique)
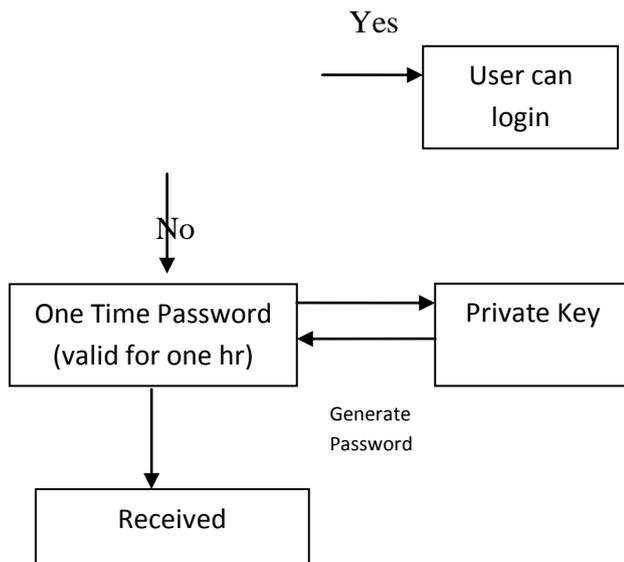
Cryptography is the science of mathematics to "encrypt" and "decrypt" data. Cryptography enables us to store sensitive information or transmit it across insecure networks like Internet so that no one else other the intended recipient can read it.

Cryptanalysis is the art of breaking Ciphers that is retrieving the original message without knowing the proper key.

Cryptography deals with all aspects of secure messaging, authentication, digital signatures, electronic money, and other applications.

Cryptography methodology allows security at various level of network which focus on basic attributes of information security i.e. confidentiality, integrity and availability. In a progressively networked and distributed communications environment, there are more and more useful situations where the ability to distribute a computation between a number of unlike network intersections is needed. The reason that lacks the security is efficiency, fault-tolerance and security.

```
   ┌──────────────────┐
   │  User/Customer   │
   └────────┬─────────┘
            ▼
        ◇─────────◇
       ╱  User name ╲
      ◇  / Password  ◇
       ╲           ╱
        ◇─────────◇
```

Yes

```
      ┌──────────────┐
 ───▶ │  User can    │
      │  login       │
      └──────────────┘
```

No

```
 ┌────────────────────┐        ┌──────────────┐
 │ One Time Password  │◀───────│  Private Key │
 │ (valid for one hr) │───────▶│              │
 └────────────────────┘        └──────────────┘
                                  Generate
                                  Password
 ┌────────────────────┐
 │    Received        │
 └────────────────────┘
```

6) Conclusion

E-commerce is widely considered the buying and selling of products over the internet, but any transaction that is completed solely through electronic measures can be considered e-commerce. Day by day E-commerce and M-commerce playing very good role in online retail marketing and peoples using this technology day by day increasing all over the world. E-commerce security is the protection of e-commerce assets from unauthorized access, use, alteration, or destruction. Dimensions of e-commerce security; Integrity: prevention against unauthorized data modification, No repudiation: prevention against any one party from reneging on an agreement after the fact. Authenticity: authentication of data source. Confidentiality: protection against unauthorized data disclosure. Privacy: provision of data control and disclosure. Availability: prevention against data delays or removal. Fraudsters are constantly looking to take advantage of online shoppers prone to making novice errors. Common mistakes that leave people vulnerable include

shopping on websites that aren't secure, giving out too much personal information, and leaving computers open to viruses. In this paper we proposed two techniques one with one time password and one without one time password; by these techniques we can authenticate the suspicious user activity.

10) References

[1]"Security Perception in E- commerce: Conflict between Customer and Organizational Perspectives". Proceedings of the International Multiconference on Computer Science and Information Technology, pp. 443 – 449, ISBN 978-83-60810-14-9- 2008- IEEE

[2]V.Srikanth "Ecommerce Online Security And Trust Marks". IJCET ISSN 0976 – 6375, Volume 3, Issue 2, July- September (2012),

[3]"Analysis of E-Commerce and M-Commerce: Advantages, Limitations and Security issues". IJARCCE-ISSN (Online) : 2278-1021. Vol. 2, Issue 6, June 2013

[4]V.Srikanth "Ecommerce Online Security And Trust Marks". IJCET ISSN 0976 – 6375, Volume 3, Issue 2, July- September (2012),

[5]W. Stallings, Cryptography and network security: principles and practice: Prentice Hall, 2010.

[6]S. Murphy, A. Hayatnagarkar, S. Krishnaswamy, W. Morrison, R.Watson,Code Revocation for Active Networks,Advance Security Research Journal,vol. 02,pp 7-18,2010.

[7]Ross J. Anderson,A Security Policy Model for Clinical Information Systems, vol. 08,pp 33-42,2012.

[8]Raju Barskar, Anjana Jayant Deen"The Algorithm Analysis of E-Commerce Security Issues for Online Payment Transaction System

in Banking Technology"(IJCSIS)-Vol. 8, No. 1, April 2010