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Journey of Internet – Past, Present & Future

Abhishek Dhawan[1] , Kishor Gaikwad[2], Preeti Gaikwad[3], Prof. Hemant Kumbhar[4]
CEO, Feelsofts, India [1].
Industrial Person, Wipro, Erie, PA[2],
Management Person,Erie, PA[3]
Asst.Professor, Dept.of Computer, SVPM"S COE, Malegaon BK[4].

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ABSTRACT— *The Internet also represents one of the most successful examples of sustained investment and commitment to research and development in information. This paper traces and breaks down Internet breakthroughs ever. The early Internet was contrived and executed in American research units, colleges, and telecom organizations that had vision and enthusiasm for forefront research. The Internet then went into the business stage (1984-1989). It was encouraged by the redesigning of back- bone connections, the written work of new programming projects, and the developing number of interconnected global systems. The creator analyzes the gigantic development of the Internet into a worldwide system amid the 1990s when business and PCs with distinctive working frameworks joined the general system. The moment and developing achievement of informal communication destinations that empower Net users to impart data, photographs, private diaries, diversions, and individual and in addition business interests.*

Keywords— Packets, Web 2.0, ARPANET, SOCIAL MEDIA

1, INTRODUCTION

This Paper inspects turning points in the history of the Internet, how the Internet advanced from the Advanced Research Projects Agency (ARPA, 2004) in 1957, its developmental years. (1957-1984) until these days; from the early Internet contrived and actualized in American research units, colleges, and telecommunication organizations that had vision and enthusiasm for front line research until a worldwide phenomenon. I highlight the entrance of the Internet into the business stage (1984-1989), encouraged by the updating of spine connections, the composition of new programming projects and the developing number of interconnected universal systems; the monstrous development of the Internet into a worldwide system amid the 1990s when business and PCs with distinctive working frameworks joined the all-inclusive system; the moment and developing accomplishment of interpersonal interaction - locales that empower Net users to impart data, photographs, private diaries, diversions and individual and also business engages with systems of shared companions and associates. The innovation has changed into a quotidian system for recognizing, imparting and passing on information and thoughts, trading representation, features, sounds and activity to a huge number of Net users in 2015

2. HISTORY OF INTERNET

2.1 1957

USSR Launches Sputnik - USSR launches Sputnik into space and, with it, global communications.

2.2 1958

Bell Labs Invents Modem - Bell Labs researchers invent the modem (modulator - demodulator), which converts digital signals to electrical (analog) signals and back, enabling communication between computers.U.S. Government Creates ARPA The United States government creates the Advanced Research Projects Agency (ARPA) in response to Sputnik launch.

2.3 1961

Leonard Kleinrock Pioneers Packet-Switching - Leonard Kleinrock pioneers the packetswitching concept in his Massachusetts Institute of Technology (MIT) doctoral thesis about queueing theory

2.4 1963

ASCII Is Developed - The first universal standard for computers, ASCII (American Standard Code for Information Exchange) is developed by a joint industry-government committee. ASCII permits machines from different manufacturers to exchange data.

2.5 1964 — 1967

Paul Baran, Donald Davies Develop Message Blocks/Packet-switching - The Rand Corporation's Paul Baran develops message blocks in the U.S., while Donald Watts Davies, at the National Physical Laboratory in Britain, simultaneously creates a similar technology called packet-switching. The technology revolutionizes data communications.

2.6 1965

Lawrence Roberts & Thomas Marill Create First Wide-area Network-Lawrence Roberts (MIT) and Thomas Marill get an ARPA contract to create the first wide-area network (WAN) connection via long distant dial-up between a TX-2 computer in Massachusetts and a Q-32 computer in California. The system confirms that packet switching offers the most **1966**

ARPAnet Project Initiated -

Directing ARPA‟s computer research program, Robert Taylor initiates the ARPAnet project, the foundation for today‟s Internet.

2.7 1967

ARPAnet Design Begins - Lawrence Roberts leads ARPAnet design discussions and publishes first ARPAnet design paper: "Multiple Computer Networks and Intercomputer Communication." Wesley Clark suggests the network is managed by interconnected

„Interface Message Processors‟ in front of the major computers. Called IMPs, they evolve into today‟s routers.

2.8 1968

UCLA Develops ARPAnet Host Level Protocols - Steve Crocker heads UCLA Network Working Group under Professor Leonard Kleinrock to develop host level protocols for ARPAnet communication in preparation for becoming the first node. The group, which includes Vint Cerf and Jon Postel, lays the foundation for protocols of the modern Internet.

2.9 1969

UCLA Team Sends First Data Packets - The first data packets are sent between networked computers on October 29th by Charley Kline at UCLA, under supervision of Professor
Leonard Kleinrock. The first attempt resulted in the system crashing as the letter G of "Login" was entered. The second attempt was successful.

2.10 1970 — 1979

Key Internet Protocols Implemented - Dr. David Clark implements Internet protocols for the Multics systems, the Xerox PARC ALTO and the IBM PC.

2.11 1972

Ray Tomlinson Invents Email - Ray Tomlinson of BBN invents the email program to send messages across a distributed network. The "@" sign is chosen from the punctuation keys on Tomlinson's Model 33 Teletype to separate local from global emails, making "user@host" the email standard.

2.12 1972

Jon Postel Helps Create First Internet Address Registry - While at the Information Science
Institute, Jon Postel helps create the first Internet address registry, which later becomes Internet Assigned Numbers Authority (IANA). This administers IP addresses and other critical Internet functions.

2.13 1973

TCP/IP Protocol Development Begins - Development begins on what will eventually be called TCP/IP protocol by a group headed by Vint Cerf (Stanford) and Robert Kahn (DARPA). The new protocol will allow diverse computer networks to interconnect and communicate with each other.

2.14 1973

Danny Cohen Pioneers Network Voice Protocol - Danny Cohen was the first to implement "packet video" and "packet voice" (Network Voice Protocol) when he adapted the visual flight simulator to run over the ARPANET in 1973. It was the first application of packet switching to real-time applications.

2.15 1974

Vint Cerf, Robert Kahn Coin 'Internet' - Vint Cerf and Robert Kahn publish "A Protocol for Packet Network Interconnection" which specifies in detail the design of a Transmission Control Program (TCP) and coins the term “Internet” for the first time.

2.16 1974

Bolt Beranek and Newman Founds Telenet - Lawrence Roberts helps Bolt Beranek and Newman (BBN) found Telenet, the first public packet data service, a commercial version of ARPAnet.

2.17 1980 — 1989

Lawrence Landweber Forges First U.S.- Europe Network Gateways - Lawrence Landweber establishes the first network gateways between the U.S. and European countries. He also establishes the “Landweber Conferences,” which are instrumental in showing scientists from around the world how to implement national academic and research networks in their countries.

2.18 1982

First Public WAN Initiated - Teus Hagen initiates the European Unix Network (EUnet) as the EUUG dial-up service, which becomes the first public wide area network in Europe, serving four initial “backbones.”

2.19 1983

Paul Mockapetris Invents Domain Name System - Paul Mockapetris expands the Internet beyond its academic origins by inventing the Domain Name System (DNS). John Klensin helps facilitate early procedural and definitional work for DNS administration and top-level domain

2.20 1984 — 1989

CERN and TCP/IP - Ben Segal convinces CERN that TCP/IP is the key to making the Internet functional. First Internet Exchange Point Established. Dr. Glenn Ricart sets up the first Internet Exchange point, connecting the original federal TCP/IP networks and first U.S. commercial and non-commercial Internet networks.

2.21 1990

Tim Berners-Lee Creates WWW - At CERN, the European Physical Laboratory, Tim Berners-Lee creates the World Wide Web. Robert Cailliau is a key proponent of the project, and helps Berners-Lee author a proposal for funding. Later, Cailliau develops, along with Nicola Pellow, the first web browser for the Mac OS operating system.

2.22 1991

World Wide Web Opens to Public - The World Wide Web is made available to the public for the first time on the Internet.

2.23 1995

MP3 Is Developed - Brandenburg and his team settle on a file extension for the audio format, shortening MPEG1, Layer 3 to MP3. New Protocols Enable VOIP, Dr. Henning
Schulzrinne co-develops key protocols that enable Voice over the Internet protocol (VoIP).

2.24 1998

Blogs First Appear - The advent of web publishing tools available to non-technical users spurs the rise of blogs.

2.25 2000

Aaron Swartz Co-Creates RSS - Aaron Swartz co-creates RSS, a program that collects news from various web pages and puts them in one place for readers, with the goal of making information freely available to everyone.

2.26 2012

Internet Society Founds Internet Hall of Fame - The Internet Society founds the Internet Hall of Fame and the first 33 members are inducted in a ceremony in Geneva, Switzerland.

3. INTERNET TODAY

Today, the Internet isn't a side movement; its a principle fascination. Fast, broadband associations have generally supplanted dial-up systems administration. Presently, numerous PC clients are associated with the Internet day and night. Likewise, cellular telephones and different gadgets, for example, PDAs and gaming reassures now interface with the Internet.

While yesterday's sites were static, today's locales are alert. It is a social medium where clients are locked in. We shop on the web, we bank on the web, we play recreations on the web, we read the news on the web, we listen to music on line, we make telephone calls on the web, we stare at the TV and films on the web, we join with different clients on the web, we make our own particular media on the web, we work together on the web, and the rundown goes on. The Internet has influenced about everything that we do.

Previously, we acquired music and programming on CDs. Today, numerous clients purchase music downloads while others subscribe to boundless streaming music memberships. Programming is presently accessible as an administration "in the cloud." Rather than

purchasing a plate, introducing the product, and owning it altogether, programming can be gotten to online by means of a month to month membership.

Alongside the advances made comes a darker side: PC infections, spyware, and security concerns. Programmers and malware engineers are running widespread, powering a feline and-mouse amusement between the dark hatters and PC security specialists. Furthermore protection concerns have been raised. Not just does malware debilitate security, a few clients enthusiastically and unwittingly surrender individual data online over interpersonal organizations and some individuals are worried about the potential for government observing.

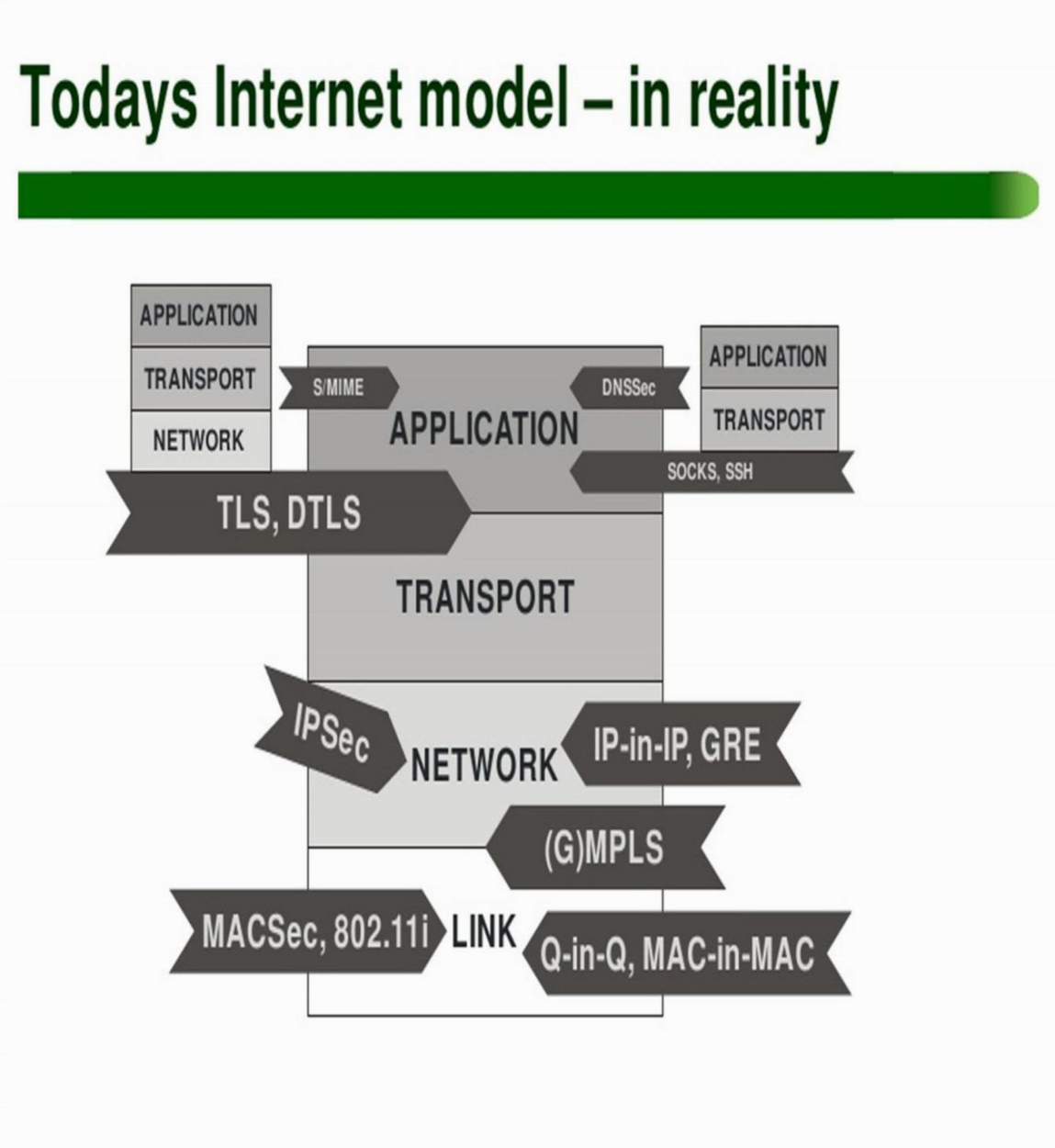
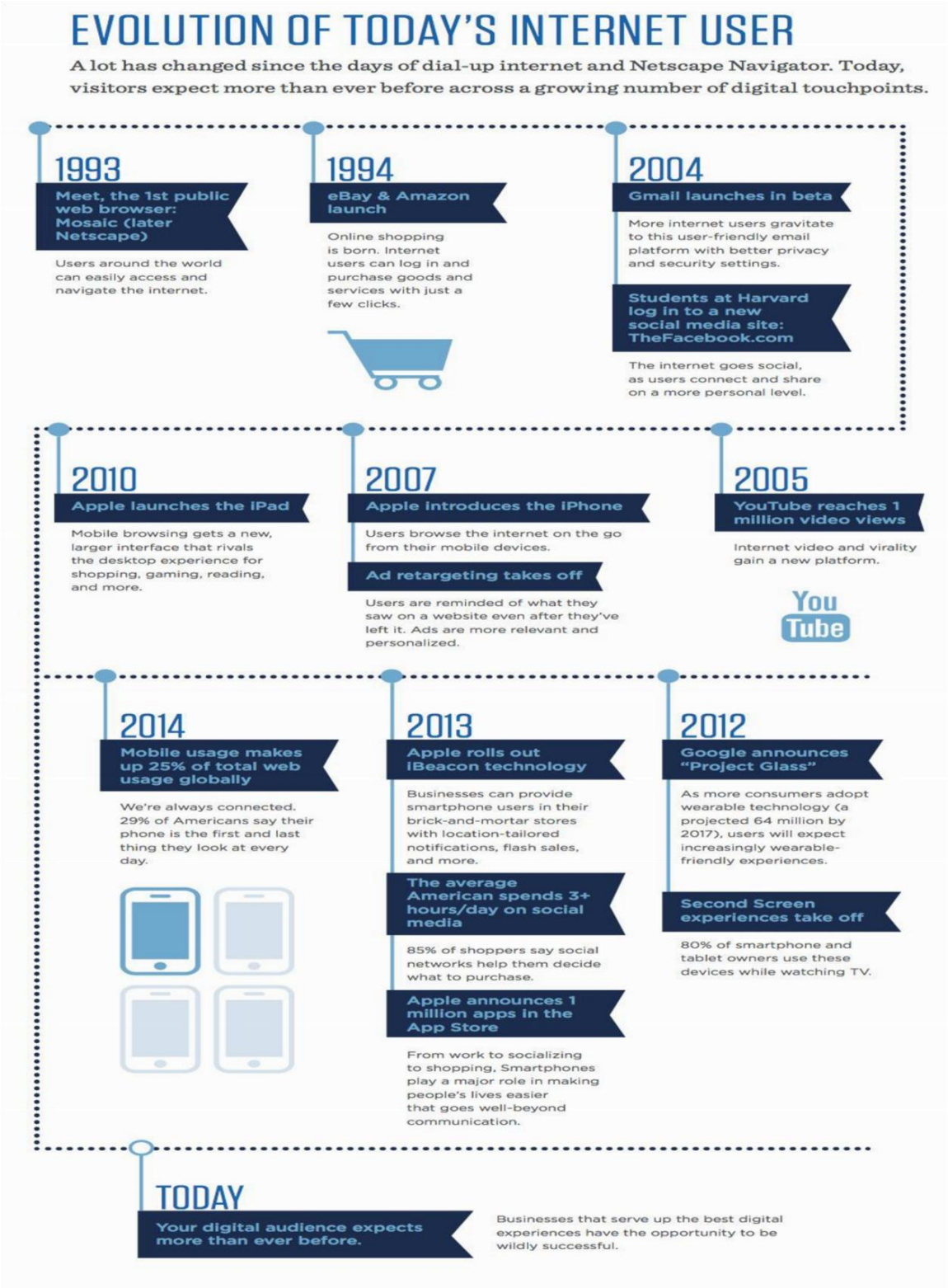


Fig. 3.1

3.2 Today's Internet



4. PROPOSED INTERNET OF FUTURE

The Internet is without a doubt saturating and changing all parts of our economies and social orders. It is a striking impetus for inventiveness, joint effort and development and all the more comprehensively, for the advancement of our economies and social orders. A couple of samples: in 1998, Google listed 26 million pages, today it files 1 trillion; Within just five years, Facebook and MySpace have pulled in every more than 100 million clients around the world; client produced substance, for example, YouTube delivered more than 73 billion streams in 2008; with around four billion versatile clients around the world, the Internet is getting to be more portable and fit to help a scope of new applications and administrations that were not anticipated in its unique outline.

That is a gigantic crevice between what's at present conceivable and what's economically accessible. Anyway over the long haul, the expenses of delivering ultra-rapid systems will diminish. Inevitably, the normal shopper will have the capacity to download a top quality motion picture in a second or play cloud-based feature amusements without an insight of slack. Indeed as wired associations achieve uncommon velocities, remote innovation keeps on developing. Innovations like LTE and WiMAX provide for us the capacity to get to the Internet remotely at rates similar to broadband associations. It likewise opens the entryways for compact gadgets like cell phones, laptops and tablets to connect to the Internet without the requirement for wires.

4.1 Things will add storage capacity and become more intelligent

Currently, things may store a few bytes. However as these things need to become highly responsive, there will be a shift towards more powerful embedded processors and larger onboard systems memory. Reduced hardware costs make this feasible for a wide range of things. With more data at hand combined with more computing horsepower, the things will be able to become more mathematically intensive to identify patterns and create models and produce derived data, in addition to collecting raw data.

4.2 Things will become grouped into localized ‘Networks of Things’

Intelligence multiplies when things work together in a team. It makes sense to integrate the networks of things that have a common gravitational pull, such as a home, a manufacturing plant, a car or a neighborhood. Communication and decision rules become manageable within a small set of things, and this is where the capability for my refrigerator to receive a gallon of milk from the local grocery store becomes workable. These local networks will generate larger sets of higher-level data, which drives the next level**Fault Tolerance and**

4.3 A sky full of clouds will add rich context to data

Here’s where things start to sound like science fiction. Sets of localized Networks of Things, aka device nets, will connect to a variety of clouds and data can become organized at ever higher layers. Manufacturers can access these sets of clouds to pull in all their operational data to their data centers and analyze product and cross-product performance in a meaningful way. They also can have access to tangential data from other players in the cloud, which add rich context.

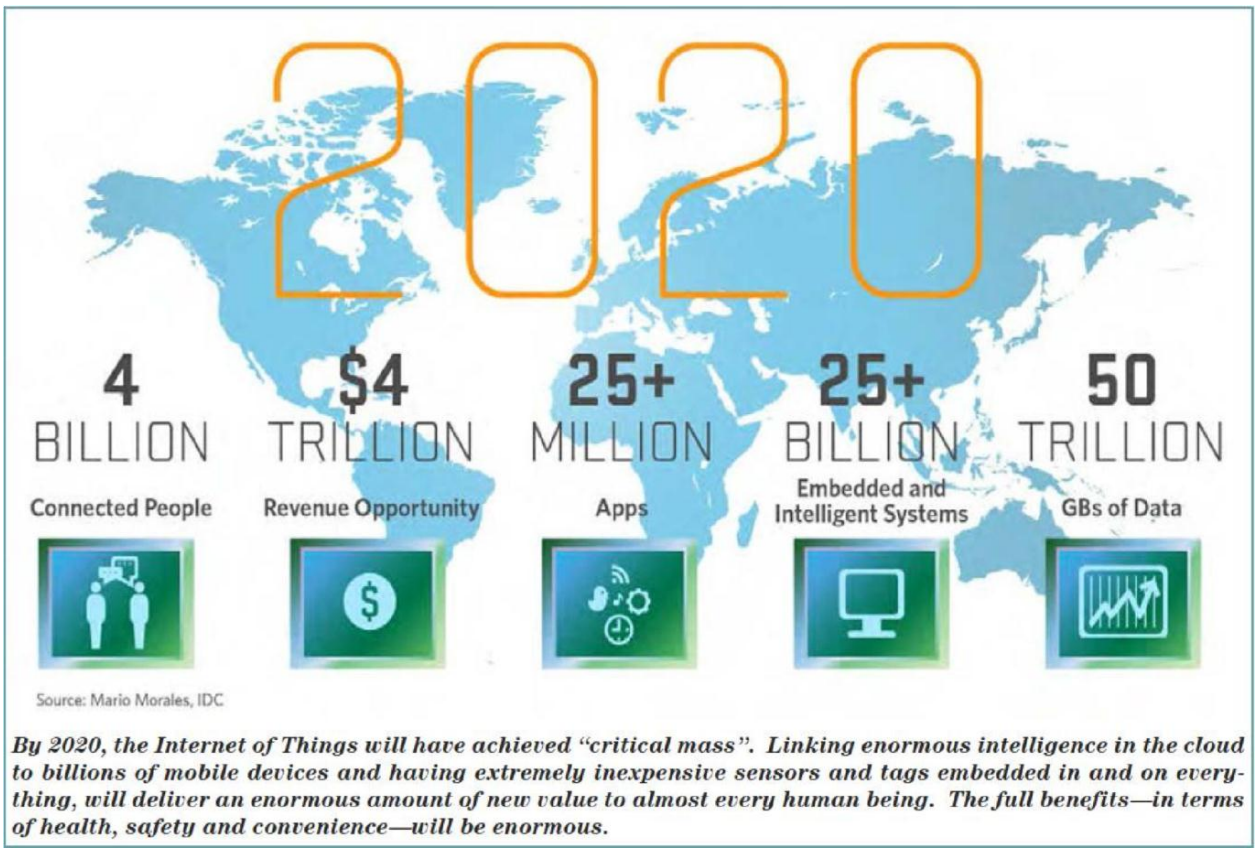


Fig. 4.1

5, CONCULSION AND FUTUREWORK

Internet Phases: Past, Present, and Future

Attribute	Brand Experience Era	Customer Experience Era	Collaborative Economy Era
Driving technology	CMS and HTML	Social technologies	Social technologies
Years	1995: Internet had 14% American adoption	2005: Business blogging disrupted corporations	2013: AirBnb, TaskRabbit, Lyft, gain mainstream attention
What is shared	Vetted Information	Personal Ideas and Media	Goods and Services
Who shares	Few	Many	Many
Who receives	Many	Many	Many
What it looks like	Brands and media talk, people listen	Everyone talks and listens	Buy once, share many, need to buy less
Who has the power	Brands and publishers	Those who use social	Those who share goods and services

Who is disrupted	Traditional mediums: TV, Print	Corporations, governments	Corporations, governments
What must change	Media models	Communication and marketing strategy	Business models
How corporations responded	Created their own corporate website	Adopted social tools internally, externally	Learn to share products, enable marketplace
Software needed	CMS and design tools	SMMS, monitoring, communities	Marketplace, ecommerce, communities, SMMS, Monitoring
Services needed	User Experience, Design, Content	Social strategy, community managers, communicators	Agencies that help with trust, customer advocates,

TABLE 1

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