Presented by Joe Chappell – Connected HHI

Internet Basics – An Introduction

1

Presentation Flow

👥	Timeline of Important Developments
🎵	Basic Building Blocks of the Internet
💬	How It Works
⬇	Internet Safety Considerations
🎧	Q&A
📚	*Full presentation available for download

2

What Exactly Is The Internet – Part I

The Internet, sometimes called simply "the Net," is a worldwide system of computer networks -- a **network of networks** in which users at any one computer can, if they have permission, get information from any other computer (and sometimes talk directly to users at other computers).

https://www.techtarget.com/whatis/definition/Internet
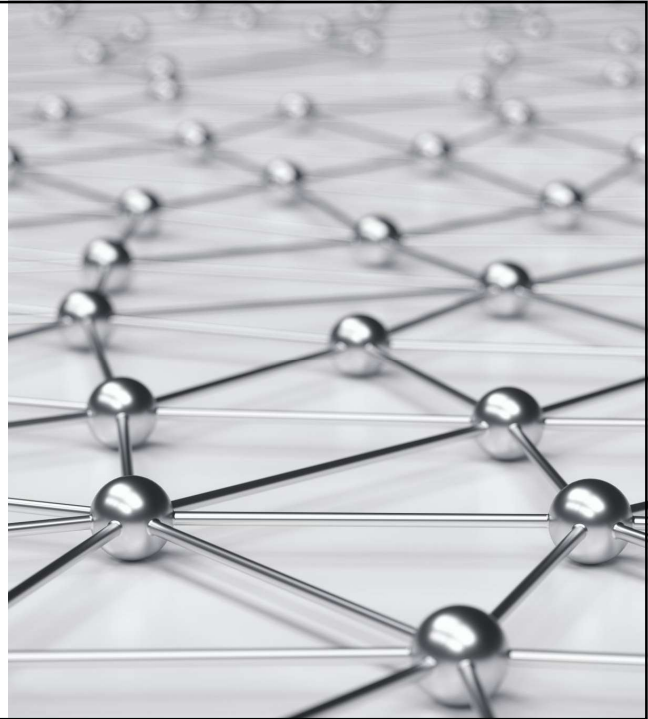
3
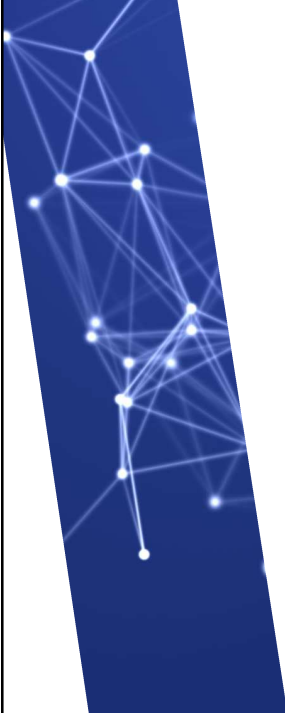
What Exactly Is The Internet – Part II

Today, the Internet is a **public, cooperative and self-sustaining facility** accessible to hundreds of millions of people worldwide. It is used by many as the primary source of information consumption, and fueled the creation and growth of its own social ecosystem through social media and content sharing. Furthermore, e-commerce, or online shopping, has become one of the largest uses of the Internet.

https://www.techtarget.com/whatis/definition/Internet
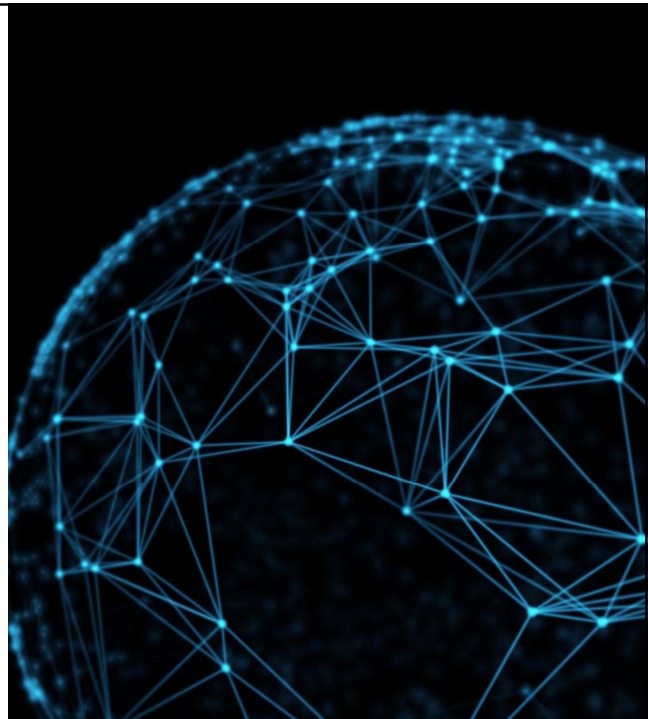
4

Key Milestones That Made the Internet Possible

- 1958 – MODEM invented at Bell Labs
- 1959 – Laser patented
- 1965 – MIT Lincoln Labs – 2 computers connected
- 1966 – ARPAnet project initiated – Advanced Research Projects Agency (ARPA)
- 1968 – Beraneck and Newman (BBN) introduces Interface message Protocol and contract to develop ARPAnet
- 1969 – First message sent between nodes on ARPAnet – between UCLA and Univ of Utah

5

Key Milestones – Formative Years

- 1972- BBN introduces Network Mail (Email) and the Internet Working Group forms
- 1973 – ARPAnet goes global with the addition of University of London
- 1974 – Vinton Cerf and Bob Kahn publish "A Protocol for Packet Network Interconnection," which details the design of TCP.
- 1979 – USENET formed to host news and discussions
- 1981 – National Science Foundation grant to create the Computer Science Network (CSNET) connecting university computer scientists

6

Key Milestones – The Internet Grows Up

- 1982 – TCP/IP adopted as the protocol for ARPAnet
- 1983 – Domain Name System established for naming standard with .COM, .EDU, .GOV, and .MIL introduced
- 1987 – Over 20,000 computers connected to the net and CISCO ships their first router
- 1989 – WORLD.STD becomes the first commercial dial-up provider
- 1998 – US government forms ICANN and transfers control of domain name issuance and management

7

Key Milestones – The Web is Born

- 1990 – Tim Berners Lee (CERN) introduces Hyper Text Markup Language (HTML) that made web pages possible
- 1991 – CERN introduces WWW standard for web sites
- 1993 – Marc Andreesen introduces Mosaic browser
- 1994 – Netscape and Microsoft introduce their browsers and Yahoo is launched
- 1995 – Wells Fargo adds online banking to their website and Amazon.com opened to sell books
- Compuserve, AOL, and Prodigy launch
- 1997 – Netflix launches videos by mail
- 1999 – AOL buys Netscape

8

Key Milestones – The Internet is Ubiquitous

- 2003 – 'SQL SLAMMER' – the first major internet virus strikes
- 2006 – Twitter launches
- 2010 – FaceBook reaches 400 million active users
- 2016 – Voice assistants are available on every major platform
- 2019 – COVID and "The Cloud" are everywhere

9

The Pieces of Our Internet – Home Version

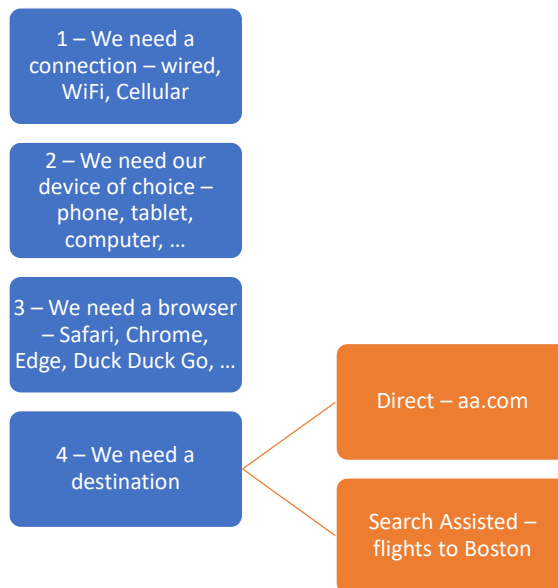|	Internet – Global Network of Networks
	ISP – Internet Service Provider – Hargray, Spectrum, Verizon, …
	Home Network – Modem, Router, WiFi Access Points
	Devices – computers, tablets, phones, TVs, and appliances
	User

10

Services

- Email
- Browsing
- Searching
- Watching
- Listening
- Controlling
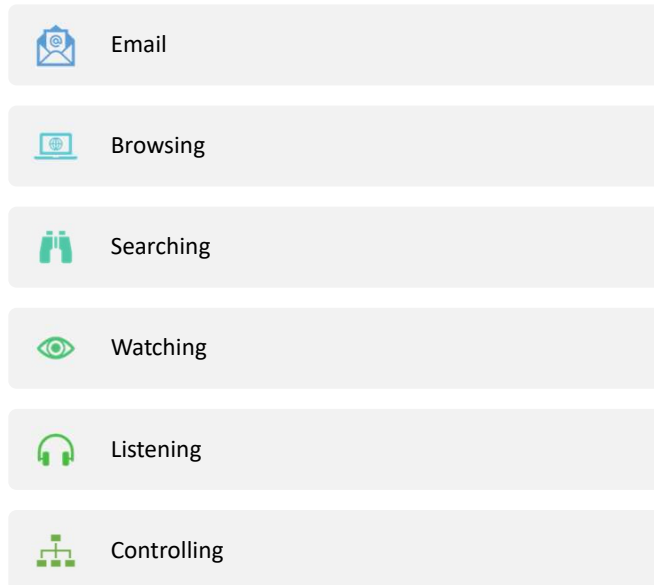
11

Browsing – How Does it Work?

1 – We need a connection – wired, WiFi, Cellular

2 – We need our device of choice – phone, tablet, computer, …

3 – We need a browser – Safari, Chrome, Edge, Duck Duck Go, …

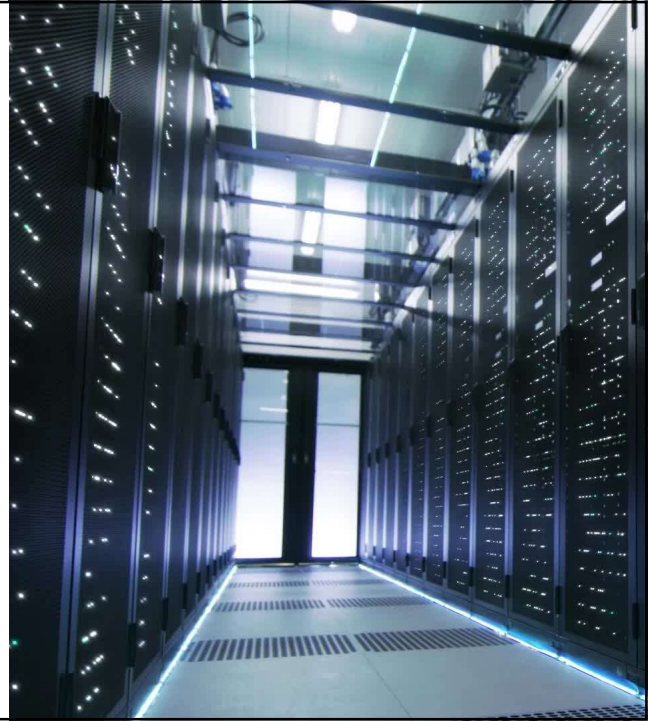4 – We need a destination

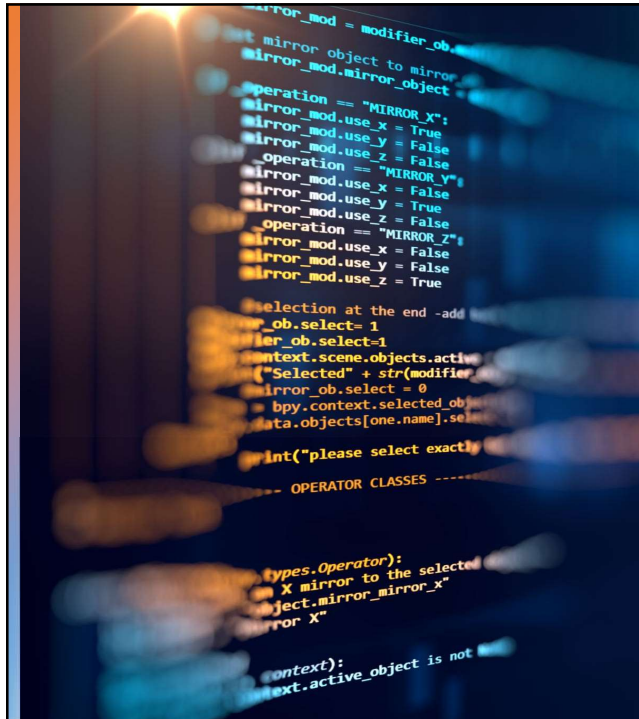Direct – aa.com

Search Assisted – flights to Boston

12

But How Does It Work?

- Enter aa.com
- Request sent to DNS server for translation from aa.com to 23.55.254.136
- Request routed through ISP to "Internet" in multiple hops to ultimate destination
- aa.com is served by Akamai – a content delivery network - middleman

13

How Does Google Search Work?

- Web Crawling Programs explore every "visible" web page.
- They collect, categorize, index, and store every bit visible information and additional webpage data.
- They rank information based on their determination of relevance considering advertising interest, location, and activity.
- They utilize this data along with their advertising content to deliver a search result
- And they also store your web search history to deliver additional relevant content to you at every opportunity
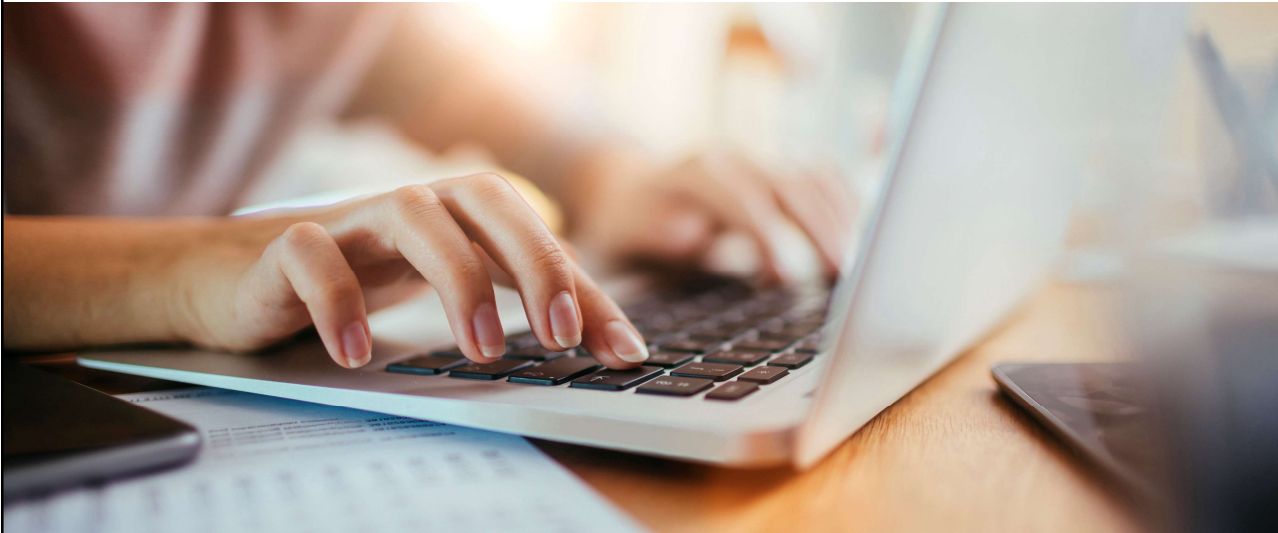
14

Safety Considerations

- Make sure that you have a secure connection whenever entering personal or financial information – Most browsers enforce secure connections (https)

- Confirm website addresses before entering any account information – bankofamerica.com not bnkofamerica.com, especially when using search links

- Be aware that many commercial sites allow ads and pop-ups. These are not always legitimate

- Use bookmarks to safely take you to your favorite sites

15

Demo Time

16
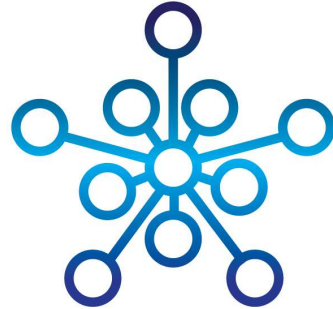
Q&A

- **Joe Chappell**
- **Connected HHI**

- **jchappell@connectedhhi.com**
- **www.connectedhhi.com**
- **843-715-9894**

17