**Part1: Brief history of internet**

In the early 1960s, there are many inventions for people to communicate with each other. Like telegraph, telephone, radio. Computer was a totally new invention and so powerful. Researchers or professors in the colleges or institutes believe that the connection between different computers will enable people access to those powerful machines to use those resources to help them to do researches. The first recorded description of the social interactions that could be enabled through networking was a series of memos written by J.C.R. Licklider of MIT in August 1962 discussing his “Galactic Network” concept. He envisioned a globally interconnected set of computers through which everyone could quickly access data and programs from any site. In July 1961, he published his first paper on packet switching theory. This is the fundamental concept in internet.

In 1965, two computers at MIT Lincoln Lab communicate with each one another using packet-switching technology. Kleinrock’s conviction of the need for packet switching was confirmed.

In August 1968, Defense Advanced Research Projects Agency (DARPA) released an RFQ for the development of one of the key components, the packet switches called interface Message Processors (IMP’s). The BBN won the contract.

On October 1969, UCLA’s Network Measurement Center, Stanford Research Institute (SRI), University of California-Santa Barbara and University of Utah install nodes. Those four institutes jointed to build the ARPANET. The first message is "LO," which was an attempt by student Charles Kline to "LOGIN" to the SRI computer from the university. However, the message was unable to be completed because the SRI system crashed. In 1973, Global networking becomes a reality as the University College of London (England) and Royal Radar Establishment (Norway) connect to ARPANET. The term Internet is born.

In 1972, BBN’s Dr. Raymond Tomlinson introduces network email. The Internetworking Working Group (INWG) forms to address need for establishing standard protocols. He defined the @ sign.

In 1974, Dr. Vinton Cerf and Dr. Bob Kahn publish "A Protocol for Packet Network Interconnection," which details the design of TCP. This protocol is one of the main protocols of the Internet protocol suite. TCP provides reliable, ordered, and error-checked delivery of a stream of octets (bytes) between applications running on hosts communicating via an IP network.

As the development of hardware in computer machine, especially as silica chips become more and more efficient. The computer become more and more powerful. So many schools, companies or government department start to own a computer. This boosts the network grow dramatically.

English scientist Sir Timothy Berners-Lee invented the World Wide Web in 1989. He wrote the first web browser in 1990 while employed at CERN near Geneva, Switzerland. The browser was released outside CERN to other research institutions starting in January 1991, and then to the general public in August 1991. The Web began to enter everyday use in 1993-4, when websites for general use started to become available.

**Part2: World wide web Brower war**

**Mosaic:** Mosaic was developed at the National Center for Supercomputing Applications (NCSA) at the University of Illinois at Urbana–Champaign beginning in late 1992. NCSA released it in 1993, and officially discontinued development and support on January 7, 1997. Starting in 1995, Mosaic lost market share to Netscape Navigator and only had a tiny fraction of users left by 1997, when the project was discontinued. Microsoft licensed Mosaic to create Internet Explorer in 1995.

**Netscape’s Navigator:** Netscape was the first company to attempt to capitalize on the emerging World Wide Web. It was founded under the name Mosaic Communications Corporation on April 4, 1994, the brainchild of Jim Clark who had recruited Marc Andreessen as co-founder and Kleiner Perkins as investors. Clark recruited other early team members from SGI and NCSA Mosaic. Jim Barksdale came on board as CEO in January 1995. The company's first product was the web browser, called Mosaic Netscape 0.9, released on October 13, 1994. Within four months of its release, it had already taken three-quarters of the browser market.

**Microsoft’s Explorer:** The success of Netscape’s Navigator did not escape the attention of Microsoft, which viewed the commoditization of operating systems as a direct threat to the Microsoft’s bottom line because Netscape experimented with prototypes of a web-based system which would enable users to access and edit their files anywhere across a network, no mater what computer or operating systems they happened to be using.

Microsoft released version 1.0 of Internet Explorer as a part of the Windows 95 Plus Pack add-on. Microsoft quickly released several successive versions of Internet Explorer, bundling them with Windows, never charging for them, financing their development and marketing with revenues from other areas of the company. This period of time became known as the browser wars. Internet Explorer had the upper hand, as the amount of manpower and capital dedicated to it eventually surpassed the resources available in Netscape's entire business. By version 3.0, IE was roughly a feature-for-feature equivalent of Netscape Communicator, and by version 4.0, it was generally considered to be more stable on Windows than on the Macintosh platform.

**Part3: Bubble**

The 1993 release of Mosaic and subsequent web browsers during the following years gave computer users access to the World Wide Web, popularizing use of the Internet. Internet use increased as a result of the reduction of the "digital divide" and advances in connectivity, uses of the Internet, and computer education. Between 1990 and 1997, the percentage of households in the United States owning computers increased from 15% to 35% as computer ownership progressed from a luxury to a necessity. This marked the shift to the Information Age, an economy based on information technology, and many new companies were founded.

The idea come out that the internet can be used to do business. In July 1994, Jeff Bezos founded Amazon company to sell books online. In September 1995, Pierre Omidyar founded eBay website, a simple website enables users buy and sell goods. Both of the companies grow so fast that the revenue increase dramatically in a short period of time. Investors saw opportunities and willing to invest many on the internet company. This boosted the stock market goes up in the late 1990s.

**Part4: Search**

A search engine is a software system that is designed to carry out web searches (Internet searches), which means to search the World Wide Web in a systematic way for particular information specified in a textual web search query.

**Yahoo**: In January 1994, Yang and Filo were electrical engineering graduate students at Stanford University, when they created a website named "Jerry and David's guide to the World Wide Web". The site was a human-edited web directory, organized in a hierarchy, as opposed to a searchable index of pages. In March 1994, "Jerry and David's Guide to the World Wide Web" was renamed "Yahoo!" and became known as the Yahoo! Directory.

Yahoo grew rapidly throughout the 1990s. Yahoo became a public company via an initial public offering in April 1996 and its stock price rose 600% within two years. Like many search engines and web directories, Yahoo added a web portal, putting it in competition with services including Excite, Lycos, and America Online. By 1998, Yahoo was the most popular starting point for web users, and the human-edited Yahoo Directory the most popular search engine, receiving 95 million page views per day, triple that of rival Excite. It also made many high-profile acquisitions. Yahoo began offering free e-mail from October 1997 after the acquisition of RocketMail, which was then renamed to Yahoo! Mail. In 1998, Yahoo replaced AltaVista as the crawler-based search engine underlying the Directory with Inktomi. Yahoo's two biggest acquisitions were made in 1999: Geocities for $3.6 billion and Broadcast.com for $5.7 billion.

**Google:** Google began in January 1996 as a research project by Larry Page and Sergey Brin when they were both PhD students at Stanford University in California. The conventional search engines ranked results by counting how many times the search terms appeared on the page, they theorized about a better system that analyzed the relationships among websites. They called this algorithm PageRank; it determined a website's relevance by the number of pages, and the importance of those pages that linked back to the original site. Page told his ideas to Hassan, who began writing the code to implement Page's ideas.

Google indexes billions of web pages to allow users to search for the information they desire through the use of keywords and operators. According to comScore market research from November 2009, Google Search is the dominant search engine in the United States market, with a market share of 65.6%. In May 2017, Google enabled a new "Personal" tab in Google Search, letting users search for content in their Google accounts' various services, including email messages from Gmail and photos from Google Photos.

**Part5: Communicate**

The people power led to the fast growing of internet company such as Facebook, Digg, Youtube. All those three companies have in common on their service they provided, that is build a platform for people to communicate to each other in this digital era.

**Digg:** Digg started as an experiment in November 2004 by collaborators Kevin Rose, Owen Byrne, Ron Gorodetzky, and Jay Adelson. The original design by Dan Ries was free of advertisements. The company added Google AdSense early in the project but switched to MSN adCenter in 2007.

The site's main function was to let users discover, share and recommend web content. Members of the community could submit a webpage for general consideration. Other members could vote that page up ("digg") or down ("bury"). Although voting took place on digg.com, many websites added "digg" buttons to their pages, allowing users to vote as they browsed the web. The end product was a series of wide-ranging, constantly updated lists of popular and trending content from around the Internet, aggregated by a social network.

**Facebook:** Facebook was founded in 2004 by Mark Zuckerberg, Eduardo Saverin, Dustin Moskovitz, and Chris Hughes, all of whom were students at Harvard University.Zuckerberg built a website called "Facemash" in 2003 while attending Harvard University. The site was comparable to Hot or Not and used "photos compiled from the online face books of nine Houses, placing two next to each other at a time and asking users to choose the "hotter" person". Facebook became the largest social network in the world, with more than one billion users as of 2012, and about half that number were using Facebook every day.

**Youtube:** YouTube was founded by Steve Chen, Chad Hurley, and Jawed Karim. The trio were all early employees of PayPal, which them left enriched after the company was bought by eBay.[12] Hurley had studied design at Indiana University of Pennsylvania, and Chen and Karim studied computer science together at the University of Illinois at Urbana–Champaign. The company experienced rapid growth. The Daily Telegraph wrote that in 2007, YouTube consumed as much bandwidth as the entire Internet in 2000.[41] By 2010, the company had reached a market share of around 43% and more than 14 billion views of videos, according to comScore.[42] That year, the company simplified its interface in order to increase the time users would spend on the site.[43] In 2011, more than three billion videos were being watched each day with 48 hours of new videos uploaded every minute.