

History of Communications Media

Class 8

williamreader40@gmail.com

What We Will Cover Today

- Television
 - Impact of Television on Politics, Sports , Advertising & Childhood
- Computers
 - Origin & History
 - The Personal Computer
- Internet
 - Origin
 - Effects
- Cell Phones

Television & Politics - 1

- Changed the nature of political campaigns -1
 - TV enabled candidates to reach the voters directly without the need to use intermediaries
 - Before television (and radio), candidates had to resort to mediators such as political parties and newspapers to reach the electorate
 - TV reduced political campaigns to rival television commercials, often in the form of attack ads

Television & Politics - 2

- Changed the nature of political campaigns – 2
 - TV changed political conventions from decision-making entities that actually chose the presidential nominees to coronations of a nominee chosen long beforehand
 - TV made debates a key element in the political campaign
 - TV led the media to portray campaigns as horse races

Television & Politics - 3

- Brought celebrity culture into the political realm
 - Led entertainment and sports celebrities to go into politics and embrace political causes
 - Treated politicians in the same way they treated entertainment celebrities – “tabloid politics”
 - Focused policy discussions less on how a proposed policy or policy change would affect the public and more on its effect on poll numbers or re-election chances

Television & Society

- Led to the creation of the “pseudo-event” – events concocted simply to attract media attention
- Led to the decline of both night life and civic life
 - Greatly cut into movie attendance
 - Led to a decline in civic and fraternal life

Television & Sports - 1

- Increased the audience for sports by enabling those not present in the stadium or sports arena to see the sport and develop an interest in it
- Created interest in previously unknown or little-known sports
 - Popularized many little-known Olympic sports

Television & Sports - 2

- Greatly popularized football
 - Television made football easier to watch
 - With its close-ups and slow-motion replay, it enabled the audience to more closely view the action
 - At stadiums with jumbotron screens, people characteristically watch the jumbotron rather than the field
 - The once a week frequency of football synchronized very easily with the once a week frequency of most TV programming.
 - This made football both a weekly habit and a special event – enough so that each game was important and an event to look forward to

Television & Sports - 3

- Contributed to the decline in the popularity of baseball
 - Baseball is a one-thing-at-a-time game with the focus on the duel between pitcher and batter.
 - Thus, baseball was well adapted to radio, where the announcer's verbal account and the listener's imagination could convey what was happening
 - Baseball did not come across as well on TV since its relative lack of action made the game seem boring and tedious
 - Baseball is a statistician's game & television is not a medium that conveys statistics very well

Television & Advertising - 1

- Continued and intensified the revolution in advertising that radio began
 - Like Radio, TV enabled the advertiser to reach into the home
 - Like Radio, TV used celebrity product endorsers
 - Even more than radio. TV enabled sponsors to identify their products with certain lifestyles and demographic groups

Television & Advertising - 2

- Substituted images of products for claims about products
 - Imagery of handsome people happily or ecstatically buying or using the product largely replace claims about what the product can do or why it is better than a competitor's product
 - Imagery that focuses on the fears, dreams, and hopes of those who buy the product largely replace factual information about what the product does

Television & Advertising - 3

- Turned sex into a form of advertising
 - Use of young, attractive, (and often scantily-clad) women in commercials
 - Use of suggestive commercials
 - E.g. the Noxzema shaving cream ad, the Swedish bikini team, & the Paris Hilton Carl's Hamburger Ad
 - Commercials that strongly imply that use of the product will get you the girl
 - E.g. the Just for Men commercial

Television & Childhood - 1

- Just as printing brought about the emergence of childhood as a separate social category, TV erased the distinction between childhood and adulthood
 - TV requires no instruction on how to watch it and it communicates the same information to everyone watching
 - TV erodes the idea that there are certain things that are not considered suitable for children to know until they reach a suitable level of maturity

Television & Childhood - 2

- The result is that we are reverting to the medieval notion of seeing children as simply young adults
 - Dress distinctions that used to differentiate children from adults have largely vanished
 - There is an increasing tendency to try juvenile offenders in adult courts
 - The use of four-letter words in front of and by children is increasingly common

Television & Other Media

- Reduced radio from a broadcast to a narrowcast media
 - Popular radio entertainment programs migrate to television
- Drove many mass audience magazines (such as *Life* and *Look*) out of business
 - Siphoned away advertising revenues
 - Monopolized consumer time

Computers

Origins of Computers

- Persons who made the computer possible
 - Gottfried Leibnitz – binary numbering system
 - Charles Babbage – the “analytical engine”
 - Herman Hollerith – the punch card
 - Lee De Forest – the audion tube
 - Claude Shannon – the idea that relay circuits could perform arithmetic, logical, and comparison functions

The First Computers

- John V. Atanasoff – first working model of a data processing unit and computer memory at the Univ of Iowa
- Alan Turing – Colossus, the first working digital computer, created to crack Nazi codes
- J. Presper Eckert & John Mauchly – ENIAC, developed at the Univ of Pennsylvania in 1946 to do ballistics calculations

Computers

- Computers have gone through five major computer ages – each of which differed in their basic technology and capabilities
 - 1st Generation – vacuum tubes
 - 2nd Generation – transistors
 - 3rd Generation – integrated circuits
 - 4th Generation – microprocessors
 - 5th Generation – advanced microprocessors & the Internet

First Computer Age

– 1940-56: Vacuum Tubes

- Used vacuum tubes for circuitry and magnetic drums for memory
- Very expensive and took up large rooms
- Programmed in machine language
- Input was on punch cards and paper tape
- Output displayed on printouts
- UNIVAC I, UNIVAC 1103, and IBM 704

Second Computer Age

– 1956-1963: Transistors

- Used transistors for circuitry and magnetic core for memory
- Programmed in assembly language and early versions of COBOL and FORTRAN
- Input and output as in 1st Computer Age
- IBM 1401

Third Computer Age

- 1964-1971 Integrated Circuits
 - Used integrated circuits (small transistors on silicon chips) for circuitry
 - Users could interact via keyboard and monitor as well as with punch cards
 - Users interfaced with an operating system which allowed the computer to run different applications at one time
 - IBM 360 series & 370 series
 - IBM 360s & 370s were scalable

A Note on the Impact of the Integrated Circuit

- Once invented, the IC proved useful to other industries besides the computer industry
 - While the computer industry was the largest user of ICs, demand for them was also extensive in other industries
- In 1994, IC sales by industry were as follows:
 - Computers – 47.9%
 - Industrial & Instrument Manufacturers – 10.3%
 - Communications – 14%
 - Consumer Electronics – 21.9%
 - Automotive – 4.9%
 - This was the largest growth area in the 1980s
 - Government & Military – 1.0%

A Note about 2nd & 3rd Generation Computers

- Computers were divided into three categories
 - Mainframes - a large digital computer serving 100-400 users and occupying a special air-conditioned room
 - Minicomputer - a medium-scale, centralized computer that supported multiple users. It was roughly the size of a refrigerator and fell between the early microcomputer and the mainframe in terms of memory size and disk space
 - Dumb Terminals - a terminal which can display and input data; but which lacks any significant local programmable data processing capability

Fourth Computer Age

- 1971-1991: Microprocessors
 - Microprocessors are ICs that incorporate most or all of the functions of the CPU on a single chip.
 - Before the microprocessor, the CPU was built with many chips
- Microprocessors made possible the Personal Computer (PC)

Origins of the PC

- Had its origins in the computer hobby culture
 - Its members were engineers who worked in either the computer or electronics industries .
 - The culture included the Homebrew Computer Club of Silicon Valley
- In 1977 when Apple, Commodore, and Tandy introduced the first commercial PCs
- The success of Apple and Commodore led IBM to enter the PC market

Origins of the PC - 2

- The PC market really took off when IBM introduced its “open architecture” PC in October 1981
 - _ It had an Intel 8088 microprocessor and a Microsoft MS-DOS operating system
- IBM’s entry into the PC market had profound consequences
 1. It revealed a mass market for computers. Before, the market had been institutional – corporations, government offices, universities, businesses, etc
 2. By making its PC an open system, IBM enabled existing and startup companies to enter this new market
 - By 1986, over 200 companies were producing IBM PC clones. Among the new entrants were Dell, Compaq, Gateway, and Hewlett Packard
 - Conversely, it reduced PC manufacturers with proprietary operating systems to minor niche status

A Note about the PC

- PCs went through multiple PC eras with each era reflecting a new microprocessor chip and often a new operating system
 - The Intel eras were based on the 8088, 80286, 386, 486, Pentium, and successive chips
 - The Microsoft operating systems were DOS, and the various versions of Windows, starting with 3.0 up to the present XP and Vista
 - In each era, the memory, speed, and capabilities of the computer increased and both the size and especially the cost of the computer decreased

A Note about the PC - 2

- IBM's commitment to the mainframe eventually caused it to lose control of the PC market
 - While IBM's XT (based on the 8088 chip) and AT (based on the 80286 chip and introduced in 1984) were great successes, IBM held back on a computer with a 386 chip in order to protect sales of its lower end mini-computers
 - Result: Compaq Computer came out with the first 386 chip-based PC in 1986 so that IBM lost both its control of PC architecture and its ability to dominate the PC industry

A Note about the PC -3

- Other consequences of IBM's entry into the PC market
 3. It made Intel and Microsoft the dominant players in the PC industry
 4. It created a demand for new types of packaged software that could be used by non-techie users in offices and homes
 - Prior to packaged software, software applications were generally created for existing installation computers by in-house or contract software programmers who wrote custom-made code

A Note about the PC - 4

- Other consequences of IBM's entry into the PC market
 5. The appearance of PCs on a multitude of desks within corporate, government, and university offices led to the creation of internal enterprise networks or intranets to link these computers
 - By 1983, start-ups Novell and 3Com were providing software for Local Area Networks (LANs). Others soon followed

Fifth Computer Age

- 1991 – present: era of the Internet
 - Desktop and laptop PCs, home modems, and the World Wide Web
 - Graphical User Interfaces
 - Web browsing software
 - 1993 – Mosaic
 - 1994 – Netscape Navigator 1.0
 - 1996 – Internet Explorer 3.0
 - Beginnings of e-Commerce & e-Government
 - Internet both a broadcasting (websites & streaming video) and narrowcasting (e-mail) medium

Computers

- Each Computer Age has had a differential impact on society
 - The first two Computer Ages of computers had limited impact on society because of their limited capabilities, large size, high expense, and inability to communicate
 - Resided in large corporate and governmental entities where they handled tabulation and payroll functions

Computers

- The third Computer Age had a little more of an impact because it did have some limited communication with dumb terminals
 - This had impact on such areas as travel reservations, remote data input and output, and banking transactions
- The fourth Computer Age had an ever-increasing impact as micro processing capability increased, costs decreased, and increasing numbers of people acquired computers

Effects of the Personal Computer

- Altered the dynamics and structure of office work
 - Replaced typewriters and their clerk-typists
 - Supplemented centralized paper record files with online desktop files
 - Thanks to spell check, eliminated typing errors and misspellings in documents
 - Replaced card index files and standardized paper case files with local databases

The Internet & the PC

- While each Computer Age has had a differential impact on society, it is the Internet, however, that made the PC such a revolutionary technology
 - Made the PC part of worldwide network
 - Made possible the near-real-time dissemination of text, audio, still imagery, and video
 - Allowed any PC or computer to communicate with any other computer regardless of platform

Internet as the 5th Computer Age

- 5th Computer Age – 1991 – present: Internet
 - Desktop and laptop PCs, home modems, and the World Wide Web
 - Graphical User Interfaces
 - Web browsing software
 - Beginnings of e-Commerce & e-Government
 - Internet both a broadcasting (websites & streaming video) and narrowcasting (e-mail) medium

The Internet

Origins of the Internet - 1

- 1958 – Creation of the Defense Advanced Research Projects Agency (DARPA)
 - Internet grew out of DARPA's attempt to link DoD and contractor computers into a network so that information could be easily shared
- 1969 - Creation of the ARPANET
 - Based on packet switching & a network of nodes
 - Grew from 4 computers in 1969 to 15 in 1971 and nearly 2,000 by 1985

Origins of the Internet - 2

- 1985 – Funding of the network was assumed by the National Science Foundation and the name changed to the INTERNET
- 1989 – The NSF abandoned its support of the net and allowed commercial Internet service providers (ISPs) to offer Internet access to paying customers
 - By 1995, the Net encompassed 44,000 local networks, 160 countries, and an estimated 50 million users

Origins of the Internet - 3

- Origins of the Internet – 3
 - 1989 – Tim Berners-Lee of CERN developed three breakthrough techniques that made possible the World Wide Web
 - Hypertext Markup Language (HTML) – to format and layout pages of text on the Internet
 - Hypertext Transfer Protocol (HTTP) – a system to link documents
 - Uniform Resource Locators (URLs) – a scheme to address and thereby locate specific nodes of information

Origins of the Internet - 4

- 1993 – Development of Mosaic – the first web browser by Marc Andriessen
- 1994 – Development of Netscape Navigator – an upgraded version of Mosaic
- 1996 – Development of Internet Explorer by Microsoft

Intellectual Effects of the Internet - 1

- Made anyone with Internet access both a potential publisher and broadcaster
- Changed how people access and get information
 - Enabled people to obtain information not available in most news media outlets or libraries
 - Enabled people to seek out controversial issues and topics that are ignored by the mass media
 - Abolished information gatekeepers
- Fostered the rapid circulation of information, rumors, and misinformation

Intellectual Effects of the Internet - 2

- Led to the migration of intellectual content from the printed page to the web
 - Many academic journals and other publications are now published only online
 - Many publications now have an online as well as a printed version
 - News magazines such as *Time* and *Newsweek*
 - Newspapers such as the *New York Times*, *Washington Post*, and *Los Angeles Times*

Intellectual Effects of the Internet - 3

- Allowed the reader to intervene in the text of a book or article by:
 - Altering the visible format of the text
 - Linking to related information (such as a definition, a picture of an object, an extended discussion of a point, or a related subject) in other texts
 - Making annotations and comments on the text
- Brought the incipit back to life in the form of the URL
 - It thus returned printed text to the status of the Medieval manuscript

Economic Effects of the Internet - 1

- Enabled formerly local markets to become national and even international markets by
 - Diminishing the costs of acquiring needed market information
 - Allowing auction sites such as e-Bay to turn local flea markets into a worldwide community of potential buyers and sellers

Economic Effects of the Internet - 2

- Ended the economics that result from poor matching of supply and demand
 - Poor matching of supply and demand reflected both the limited shelf space for storing physical media and the need for a local audience or market
 - The Internet allowed for virtual stores with infinite shelf space and real-time information about sales trends to emerge
 - Thus, virtual stores like Rhapsody and Amazon.com made it profitable to sell long-tail items

Economic Effects of the Internet - 3

- Facilitated commerce by reducing transaction costs
 - Permitted disintermediation
 - Enabled airlines to dispense with travel agents
 - Gave rise to direct sell websites like Expedia, Priceline, & Travelocity
 - Reduced paperwork costs
 - Airlines reduced the costs of processing an airline ticket from \$8 to \$1 by substituting e-tickets for paper tickets

Economic Effects of the Internet - 4

- Facilitated the rise of offshore banking
 - Online banking permitted banks and financial institutions to establish themselves in countries with minimal or no regulations
- Facilitated the rise of global back offices
 - Enabled sites in Third World countries to perform such functions as transaction data entry, payroll and bill processing, insurance claims processing, etc

Economic Effects of the Internet - 5

- Allowed banks to replace tellers with online banking and automated teller machines
 - Allowed people to purchase airline tickets, books, and other online
 - Hurt brick-and-mortar bookstores
 - Drove travel agents out of business by allowing people to book their own trips
 - Replaced the newspaper ad with online ads at Craigslist, eBay, and other similar websites

Economic Effects of the Internet - 6

- Altered the economics of information production & dissemination
 - Eliminated such large fixed costs of information production as printing presses & TV studio equipment
 - Eliminated the marginal costs of paper & ink
 - Eliminated the costs of transmission & distribution
 - Eliminated or reduced many traditional sources of revenue for information content producers
 - This has greatly affected newspapers and magazines by eliminating subscription sales and diminishing advertising revenues

Social Effects of the Internet - 1

- Fostered Exhibitionism
 - Allowed people to turn their lives via camcorders and the Internet into web spectacles
- Allowed people to assume virtual identities
- Facilitated access to Pornography
 - Porn pioneered the use of streaming video, Java-based methods of video transmission, and encryption for secure credit card purchases
 - Accelerated the decline of sex magazines

Social Effects of the Internet - 2

- Created bonds between ordinary citizens of different states
- Enabled individuals with specialized or idiosyncratic interests to find each other, communicate with each other, exchange information, and coordinate their activities

Social Effects of the Internet - 3

- Affected the nature and quality of human interaction
 - Transmits much less non-verbal information than face-to-face communication
 - Replaces high quality relationships in the real world with low quality virtual relationships
 - Permitted human relationships to transcend the limitations of geographic proximity
 - People who don't know their next door neighbors now have online chats with people on other continents

Political Effects of the Internet - 1

- Facilitated political mobilization
 - Enabled narrow coalitions and interest groups to use the Internet to find and mobilize sympathizers via targeted websites and email responses
- Enhanced the power of small sub-groups (such as dissenters or terrorists) vis-à-vis the State
 - Such groups can use the Web to obtain critical information, mount propaganda campaigns, solicit funds, recruit new members, and plan and coordinate actions

Political Effects of the Internet - 2

- Enhanced the power of networked small groups and individuals vis-à-vis state and large corporate bureaucracies by
 - Greatly reducing the information-gathering costs that previously favored large organizations over small ones
 - Enabling the superior coordinating and quicker decision-making capabilities of small entities vis-à-vis larger ones to exert their effects

Military Effects of the Internet - 1

- Changed the role of the combat camera operator
 - Before: Shot film for historical record and stock imagery
 - After: Shot digital imagery for near-real time dissemination to combat commanders, intelligence personnel, and public affairs officers
- Turned wars and insurgencies into contests of competing imagery as well as of competing combatants and weaponry

Military Effects of the Internet - 2

- Permitted the remote training of personnel in-the-field by the use of digital imagery, audio-visual production, and multimedia
 - Before: Trainers found out about a desired film or video via a published catalog, got film or video from a base VI facility, and since they got it days or weeks after order, had to plan ahead for it to use it in their course
 - After: Trainers can resort to on-line catalogs, order it over the web, and receive either a digital VI product over the web or a physical VI product via mail

A Note on Search Engines

- The ever larger numbers of web pages placed on the Web created a need for search engines so that users could find desired items
- Thus, the emergence of several search engines
- Problem: a typical search brings too many hits

Google

- Linked user search terms to relevant ads
- Created an algorithm for rank ordering search results so the most important results ranked at the top of the queue
- Pioneered in machine translation
- Popularized the idea of digitizing all of the world's books
- Was a major player in the development of the concept of “cloud computing”

A Note on Blogs

- A “Blog” is a contraction of the term “web log”
- It is a website maintained by an individual who posts regular entries
 - These are usually news on a particular subject, commentaries on current events, personal online diaries, or rants
 - They allow readers to post comments on what has been blogged

A Note on Wikis

- A “Wiki” is a website that allows the easy creation and editing of any number of interlinked web pages
 - It is in effect a collaborate website of collaborately composed pages
- The most famous wiki and one of the ten most accessed web items is “Wikipedia” – the online encyclopedia
 - It s website is <http://www.wikipedia.org>

A Note on Social Networking Sites

- Social networking sites
 - Focus on building online communities of people who share interests or something else in common
 - Provide means to connect with friends, former classmates, or old acquaintances (usually via self-descriptive pages about oneself)
 - Provide a recommendation system by which links to others can be established
 - Two noted social networking sites are Facebook and MySpace

The Cell Phone

The Cell Phone

- Was anticipated in science fiction before becoming a product
 - Dick Tracy's wrist watch radio
 - Captain Kirk's beeping communicator
- Catered to people's desire to have portable, wireless phone service
- As time has gone on, the cell phone has acquired web access, photographic, and video capabilities
 - The laptop computer has been migrating to the cell phone

A Note about Cell Phones

- Cellular Telephone systems consist of
 - A large number of both receiver cells and low-power transmitters that relay local calls from one cell to another
 - A signal strong enough for the local phone company to relay it anywhere
- In 1985, there were 91,600 mobile phone subscribers in the U.S.; in 2000, there were 85,000,000; in 2005, there were 207,900,000

Effects of the Cell Phone - 1

- Did away with the phone booth and the public pay phone
- Made place irrelevant in terms of being able to receive a phone call
- Permitted live continuous contact between news organizations and reporters in the field
- Made possible the creation of IEDs that could be exploded remotely by the bomber setting off the bomb by a phone call

Effects of the Cell Phone - 2

- Broke down the line separating personal private space from public social space
 - Created the phenomenon of “absent presence” – being in a social space while completely ignoring one’s surroundings
- Contributed to traffic accidents
- Affected public opinion polling accuracy and sampling techniques