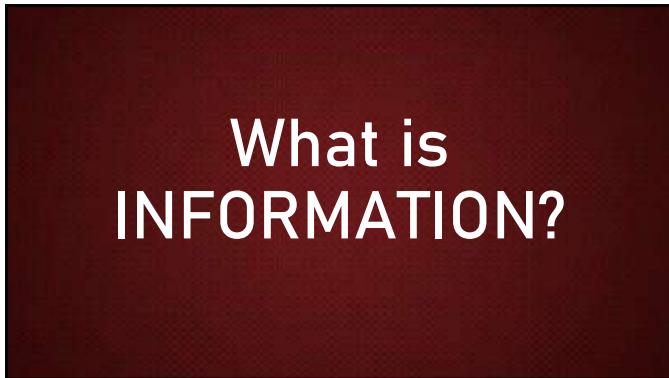


The slide features a dark purple header with the title "The Information Age" in white. Below the title is a circular graphic with concentric rings and a central download icon, with the word "DOWNLOAD" written below it.

Learning Objectives

At the end of this lesson, the students should be able to:

- Define Information Age;
- Discuss the history of information age; and
- Understand the factors that need to be considered in checking website sources.



The slide has a dark brown background. In the center, the word "INFORMATION" is written in large, white, sans-serif capital letters. Above it, the word "What is" is written in smaller, white, sans-serif capital letters.

INFORMATION

- Knowledge communicated or obtained concerning a specific fact or circumstance.
- Information is a very important tool for survival.
- Facts provided or learned about something or someone.




The slide has an orange header with the title "INFORMATION AGE" in white. Below the title is a list of bullet points and a diagram.

- A period starting in the last quarter of the 20th century information became effortlessly accessible through publications and through the management of information by computers and computer networks .
- It is also called the DIGITAL AGE and the NEW MEDIA AGE.



A grid of icons representing various digital and informational technologies, including:

- BLOGS
- ONLINE VIDEO
- ONLINE MUSIC
- TABLETS
- SMARTPHONES
- SMART WATCHES
- E-COMMERCE PORTALS
- PC / LAPTOPS
- SOCIAL MEDIA NETWORKS

INFORMATION AGE

"The Information Age is a true new age based upon the interconnection of computers via telecommunications, with these information systems operating on both a real-time and as needed basis. Furthermore, the primary factors driving this new age forward are convenience and user-friendliness which, in turn, will create user dependence."

(James R. Messenger, Theory of Information Age, 1982)

HISTORY

Table 1. Timeline of the Information Age

YEAR	EVENT
3000 BC	Sumerian writing system used pictographs to represent words
2900 BC	Beginnings of Egyptian hieroglyphic writing
1300 BC	Tortoise shell and oracle bone writing were used
500 BC	Papyrus roll was used
220 BC	Chinese small seal writing was developed
100 AD	Book (parchment)
105 AD	Woodblock printing and paper was invented by the Chinese
1455	Johannes Gutenberg invented the printing press using movable metal type
1755	Samuel Johnson's dictionary standardized English spelling.
1802	<ul style="list-style-type: none"> • The library of Congress was established • Invention of the carbon arc lamp

HISTORY

Summerian Writing Pictographs (3000 BC)

HISTORY

Egyptian Hieroglyphic Writing (2900 BC)

HISTORY

Turtle Shell and Oracle Bone (1300 BC)

HISTORY

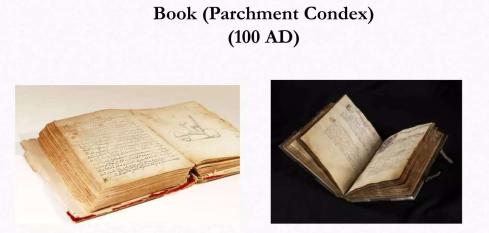
Papyrus Roll (500 BC)

HISTORY

Chinese Small Seal Writing (220 BC)

HISTORY

Book (Parchment Codex)
(100 AD)



HISTORY

Woodblock Printing and Paper
(105 AD)



Woodblock printing or block printing is a technique for printing text, images or patterns used widely throughout East Asia and originating in China in antiquity as a method of printing on textiles and later paper. Woodblock printing existed in Tang China by the 7th century AD and remained the most common East Asian method of printing books and other texts, as well as images, until the 19th century.

HISTORY

Johannes Gutenberg invented the Printing Press
(1455)



German goldsmith Johannes Gutenberg is credited with inventing the printing press around 1436, although he was far from the first to automate the book-printing process. Woodblock printing in China dates back to the 9th century and Korean bookmakers were printing with moveable metal type a century before Gutenberg.

HISTORY

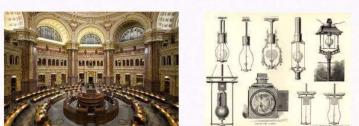
Samuel Johnson dictionary standardized English language
(1755)



Samuel Johnson's Dictionary of the English Language is one of the most famous dictionaries in history. First published in 1755, the dictionary took just over eight years to compile, required six helpers and listed 40,000 words.

HISTORY

Library Congress was Established and invention of Carbon Arc Lamp
(1802)



The Library of Congress is the nation's oldest federal cultural institution, and it serves as the research arm of Congress. It is also the largest library in the world.

An arc lamp or arc light is a lamp that produces light by an electric arc. The carbon arc light, which consists of an arc between carbon electrodes in air, invented by Humphry Davy in the first decade of the 1800s, was the first practical electric light.

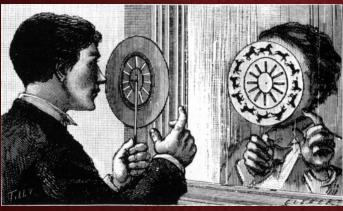
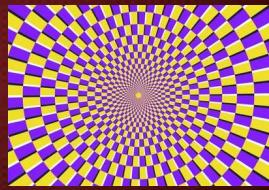
HISTORY

Table 1. Timeline of the Information Age

YEAR	EVENT
1824	Research on persistence of vision published
1830s	<ul style="list-style-type: none"> First viable design for digital computer Augusta Lady Byron writes the world's first computer program
1837	Invention of the telegraph in Great Britain and the United States
1861	Motion pictures were projected onto a screen
1876	Dewey Decimal system was introduced
1877	Eadweard Muybridge demonstrated high-speed photography
1899	First magnetic recordings were released
1902	Motion picture special effects were used
1906	Lee DeForest invented the electronic amplifying tube (triode)

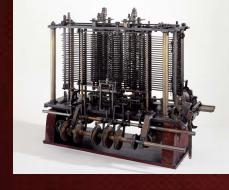
HISTORY

Research on persistence of vision published (1824)

HISTORY

- First viable design for digital computer
- Augusta Lady Byron writes the world's first computer (1830s)





HISTORY

Invention of Telegraph in Great Britain and United States (1837)



A telegraph is a communication system that sends information by making and breaking an electrical connection. It is most associated with sending electrical current pulses along a wire with Morse code encoding.

MORSE CODE by SAMUEL MORSE

A	· -
B	- · - ·
C	- · · -
D	- · -
E	·
F	· · -
G	- - ·
H	· · - ·
I	· -
J	· - - -
K	- - · -
L	- - - ·
M	- -
N	- - · -
O	- - - ·
P	- - - - ·
Q	- - - - - ·
R	- - -
S	- - -
T	-
U	- - -
V	- - -
W	- - - -
X	- - - - -
Y	- - - - - - ·
Z	- - - - - -

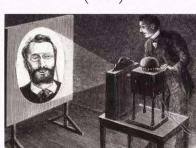
What's your reply?

..... . . - .. . - .. - - -

A	· -
B	- · - ·
C	- · · -
D	- · -
E	·
F	· · -
G	- - ·
H	· · - ·
I	· -
J	· - - -
K	- - · -
L	- - - ·
M	- -
N	- - · -
O	- - - ·
P	- - - - ·
Q	- - - - - ·
R	- - -
S	- - -
T	-
U	- - -
V	- - -
W	- - - -
X	- - - - -
Y	- - - - - - ·
Z	- - - - - -

HISTORY

Motion Picture were projected on Screen (1861)



In October of 1878, the Scientific American published these series of pictures, with instructions to view them through a zoetrope. Muybridge then mounted these individual images on a rotating disk and projected them on a screen through a magic lantern, producing a "moving picture."

HISTORY

Dewey Decimal System was introduced (1876)

Dewey classification system:

The Dewey Decimal Classification, colloquially known as the Dewey Decimal System, is a proprietary library classification system which allows new books to be added to a library in their appropriate location based on subject. It was first published in the United States by Melvil Dewey in 1876

Dewey Numbers	Dewey Main Category	Books in this Category Answer this Question
000 - 099	General Information	How do we organize information?
100 - 199	Philosophy & Psychology	Who am I?
200 - 299	Religion	How did we get here?
300 - 399	Social Sciences	Who are the people around me?
400 - 499	Language	How can I communicate with others?
500 - 599	Science	How can I explain the world around me?
600 - 699	Technology	How can I control the world around me?
700 - 799	Arts & Recreation	How can I enjoy my free time?
800 - 899	Literature	What are the stories of our lives?
900 - 999	History & Geography	What was the world like in the past? What is it like now?

HISTORY

Eadweard Muybridge Demonstrated High-speed Photography (1877)

The first major breakthrough with high-speed cameras was in 1878. Eadweard Muybridge, a British expat and photographer living in California, was commissioned to use photographs to determine whether a horse lifted all four hooves off the ground when galloping.

HISTORY

First Magnetic Recording was Released (1899)

At the Copenhagen Telegraph Company, in 1898 Danish inventor Valdemar Poulsen (1869–1942) recorded his voice by feeding a telephone microphone signal to an electromagnet that he moved along a steel piano wire.

HISTORY

Motion Picture Special Effects were used (1902)

Georges Méliès, a magician-turned-filmmaker, introduced innovative special effects in the first real science fiction film, Le Voyage Dans La Lune (1902), aka A Trip to the Moon.

HISTORY

Lee DeForest invented the Electronic Amplifying Tube (Triode) (1906)

On October 20, 1906, Lee de Forest announced his invention, a triode called audion, at a meeting. Despite having invented the first triode, which served as an amplifying device that changed the face of the broadcasting industry, de Forest was plagued by many failures. A triode is an electronic amplifying vacuum tube (or valve in British English) consisting of three electrodes inside an evacuated glass envelope: a heated filament or cathode, a grid, and a plate (anode).

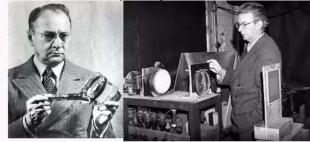
HISTORY

Table 1. Timeline of the Information Age

YEAR	EVENT
1923	Television camera tube was invented Zworkyn
1926	First practical sound movie
1939	Regularly scheduled television broadcasting began in the US
1940s	Beginnings of information science as a discipline
1945	Vannevar Bush foresaw the invention of hypertext
1946	ENIAC computer was developed
1948	Birth of field-of-information theory proposed by Claude E. Shannon
1957	Plannar transistor was developed by Jean Hoerni
1958	First integrated circuit
1960s	Library of Congress developed LC MARC (machine readable code)
1969	UNIX operating system was developed , which could handle multitasking

HISTORY

Television Camera Tube was invented by Zworkyn (1923)



In 1923, Vladimir Zworykin Offsite Link, a Russian immigrant to the United States, working at WestinghouseOffsite Link Laboratories in Pittsburgh, patented the iconoscopeOffsite Link, the first electronic television camera

HISTORY

The First Practical Sound Movie (1926)



A sound film is a motion picture with synchronized sound, or sound technologically coupled to image, as opposed to a silent film. The first feature film originally presented as a talkie (although it had only limited sound sequences) was The Jazz Singer, which premiered on October 6, 1926.

HISTORY

Regularly scheduled television broadcasting began in the US (1939)



HISTORY

Beginnings of information science as a discipline (1940s)

Information science is that discipline that investigates the properties and behavior of information, the forces governing the flow of information, and the means of processing information for optimum accessibility and usability.



HISTORY

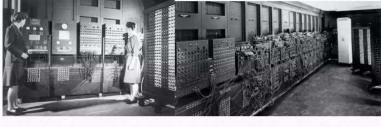
Vannevar Bush Foresaw the invention of hypertext (1945)



Hyperlink is a software system allowing extensive cross-referencing between related sections of text and associated graphic material. Vannevar Bush (1890–1974) is normally considered the "grandfather" of hypertext, since he proposed a system we would now describe as a hypertext system as long ago as 1945.

HISTORY

ENIAC computer was developed (1946)



ENIAC (Electronic Numerical Integrator And Computer) was the world's first general-purpose computer. ENIAC was designed and built for the United States Army to calculate artillery firing tables. However, it was ENIAC's power and general-purpose programmability that excited the public's imagination.

HISTORY

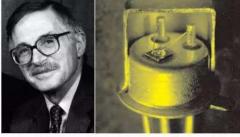
Birth of Field-of-Information Theory proposed by Claude Shannon (1948)



Information theory is the scientific study of the quantification, storage, and communication of digital information. The field was fundamentally established by the works of Harry Nyquist and Ralph Hartley, in the 1920s, and Claude Shannon in the 1940s.

HISTORY

Planar Transistor was developed by Jean Hoerni (1957)

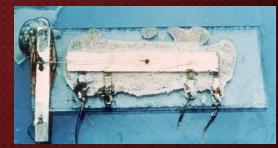


On 1 December 1957, physicist Jean Hoerni conceived the planar process, a technique used to manufacture essentially all silicon transistors and micro-chips today.

HISTORY

First Integrated Circuit (1958)

On 12 September 1958, Jack S. Kilby demonstrated the first working integrated circuit to managers at Texas Instruments. This was the first time electronic components were integrated onto a single substrate.



HISTORY

Library Congress developed LC MARC (Machine Readable Code) (1960s)



The Library of Congress developed MARC in the 1960's. Their intent was to create a computer-readable format that could be used for bibliographic records, enabling libraries to download cataloging, share information, and search all parts of a cataloging record. Libraries had shared cataloging before MARC was developed, through union catalogs, usually in book or microfilm form.

HISTORY

UNIX Operating System, which could handle Multitasking (1969)



Unix (UNiplexed Information Computing System) is a multiuser, multitasking operating system that was developed by Bell Laboratories in 1969. In a multiuser system, many users can use the system simultaneously. A multitasking system is capable of doing multiple jobs.

HISTORY

Table 1. Timeline of the Information Age

YEAR	EVENT
1971	Intel introduced the first microprocessor chip
1972	Optical laserdisc was developed by Philips and MCA
1974	MCA and Philips agreed on a standard videodisc encoding format
1975	Altair Microcomputer Kit was released: first personal computer for the public
1977	RadioShack introduced the first complete personal computer
1984	Apple Macintosh computer introduced
Mid 1980s	Artificial intelligence was separated from information science
1987	Hypercard was developed by Bill Atkinson recipe box metaphor
1991	Four hundred fifty complete works of literature on one CD-ROM was released
January 1997	RSA (encryption and network security software) internet security code cracked for a 48 bit number.

HISTORY

Intel introduced the First Microprocessor Chip (1971)

The Intel 4004 is a 4-bit central processing unit released by Intel Corporation in 1971. Sold for US\$60, it was the first commercially produced microprocessor, and the first in a long line of Intel CPUs.

HISTORY

Optical Laserdisc was developed by Philips and MCA (1972)

The LaserDisc (LD) is a home video format and the first commercial optical disc storage medium.

HISTORY

MCA and Philips agreed on a standard videodisc encoding format (1974)

After a year or two of negotiating, Philips and MCA resolved all their differences in September of 1974 and pooled their considerable resources towards developing a compatible videodisc system, each compromising their own systems slightly to allow for complete interchangeability.

HISTORY

The first Personal Computer for the Public (1975)

The MITS Altair 8800 was the first commercially successful personal computer. Created by Ed Roberts in 1974, it was purchased by the thousands via mail order, proving there was a huge demand for computers outside universities and large corporations. According to the magazine, the machine sold as a kit for \$395, and assembled for \$498.

HISTORY

RadioShack introduced the first Complete Computer (1977)

Introduced in August 1977 by the retail electronics chain Radio Shack, the TRS 80 was the first complete, pre-assembled small computer system on the market.

HISTORY

Apple Macintosh Computer was introduced (1984)



The first Mac was released in 1984 under the name Macintosh, and was advertised with Apple's now-famous 1984. The Mac has undergone four major transitions: from Motorola 68000 to PowerPC processors, from Classic Mac OS to Mac OS X, from PowerPC to Intel x86 processors, and from Intel to Apple silicon processors.

HISTORY

Artificial intelligence was separated from information science (Mid 1980s)

Humans use the brain's computing power, memory, and ability to think, whereas AI-powered machines rely on data and specific instructions fed into the system.



HISTORY

Hypercard was developed by Bill Atkinson Recipe Box Metaphor (1987)



HyperCard is a set of tools used for creating software applications. HyperCard was developed by Bill Atkinson and gifted to Apple on the basis that Apple would release it for free use on all Macintoshes. It was initially released in August 1987. It immediately became a huge success and was used in many ways by many people, many of whom began programming for the first time.

HISTORY

450 Complete works of literature in one CDROM (1991)



CD-ROM is an adaptation of the CD that is designed to store computer data in the form of text and graphics, as well as hi-fi stereo sound.

Information Anxiety



- Human cost of information overload.
- In the words of Richard Saul Wurman (author of the book 'Information Anxiety'), it is "produced by the ever-widening gap between what we understand and what we think we should understand. It is the black hole between data and knowledge, and what happens when information doesn't tell us what we want or need to know."

Truths of the Information Age

1. Information must compete
2. Newer is equated with truer
3. Selection is a viewpoint
4. The media sells what the culture buys
5. The early word gets the perm
6. You are what you eat and so is your brain
7. Anything in great demand will be counterfeited



8. Ideas are seen as controversial
 9. Undeath information walks ever on
 10. Media presence creates the story
 11. The medium selects the message
 12. The whole truth is a pursuit

Computer

- An electronic device that stores and processes data (information)
- Runs on a program that contains the exact, step-by-step directions to solve a problem.

Types of Computer

1. Personal Computer

- Single-user instrument
- Known as microcomputers since they were a computer but built on a smaller scale

2. Desktop Computer

- PC that is not designed for portability
- Workstation: desktop computer that has a more powerful processor, additional memory, and enhanced capabilities for performing special groups of tasks.

3. Laptops

- Portable computers that integrate the essentials of a desktop computer in a battery operated package

4. Personal Digital Assistant (PDA)

it is usually have no keyboards but rely on a touch screen for user input. Typically smaller than a paperback, lightweight and battery-powered.

5. SERVERS

- Computer that has been improved to provide network services to other computers.
- Usually boast powerful processors, tons of memory, and large hard drives.

6. Mainframes

- Huge computer systems that can fill an entire room.
- Used by large firms that process millions of transactions every day

6. Wearable computers

- Materials that are usually integrated into cellphones, watches and other small objects or places.
- Perform common computer applications such as databases, emails, multimedia and schedules

What type of computer would you have in the future?

The World Wide Web (Internet)

- Claude E. Shannon – “Father of Information Theory”
- Internet – world wide system of interconnected networks that facilitate data transmission among innumerable computers.

Applications of Computer in Science and Research

- ❑ Bioinformatics
- ❑ Application of information technology to store, organize, and analyze vast amount of biological data.
- ❑ SWISS-PROT protein sequence database
- ❑ Rational drug discovery
- ❑ Plant biotechnology

How to check the Reliability of Web Source?

1. Who is the author of the article/site?
2. Who published the site?
3. What is the main purpose of the site? Why did the author write it and why did the publisher post it?
4. Who is the intended audience?
5. What is the quality of information provided on the website?

What other technological advancements can possibly be developed in the future?

