Digital Media

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What is Media

"Media is the plural form of medium, which describes any channel of communication. This can include anything from printed paper to digital data…."

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What is Multimedia

"Multimedia is concerned with the presentation of multiple media sources"

What is Multimedia

- The Purpose
  - Stimulate the senses
    - Sight
    - Sound
    - Touch
    - Smell
    - Taste

What is Multimedia

- Media Sources
  - Text
  - Images
  - Audio
  - Video

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What is Multimedia

- Digital Media
  - Text
  - Images
  - Sound
  - Animation
  - Video

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Multimedia Uses

- What is Multimedia used for?
  - Information
    - News
  - Education
    - E-Learning
  - Entertainment
    - Movies
    - Music
    - Experiences

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Multimedia Uses

- What current tools can we use to "communicate or spread a message" to people?
  - Other people
  - Telephone
  - Radio
  - TV
  - Internet -- why??

Multimedia Uses

- The World Wide Web
  - Is Fast
  - Is Cheap
  - Accessibility
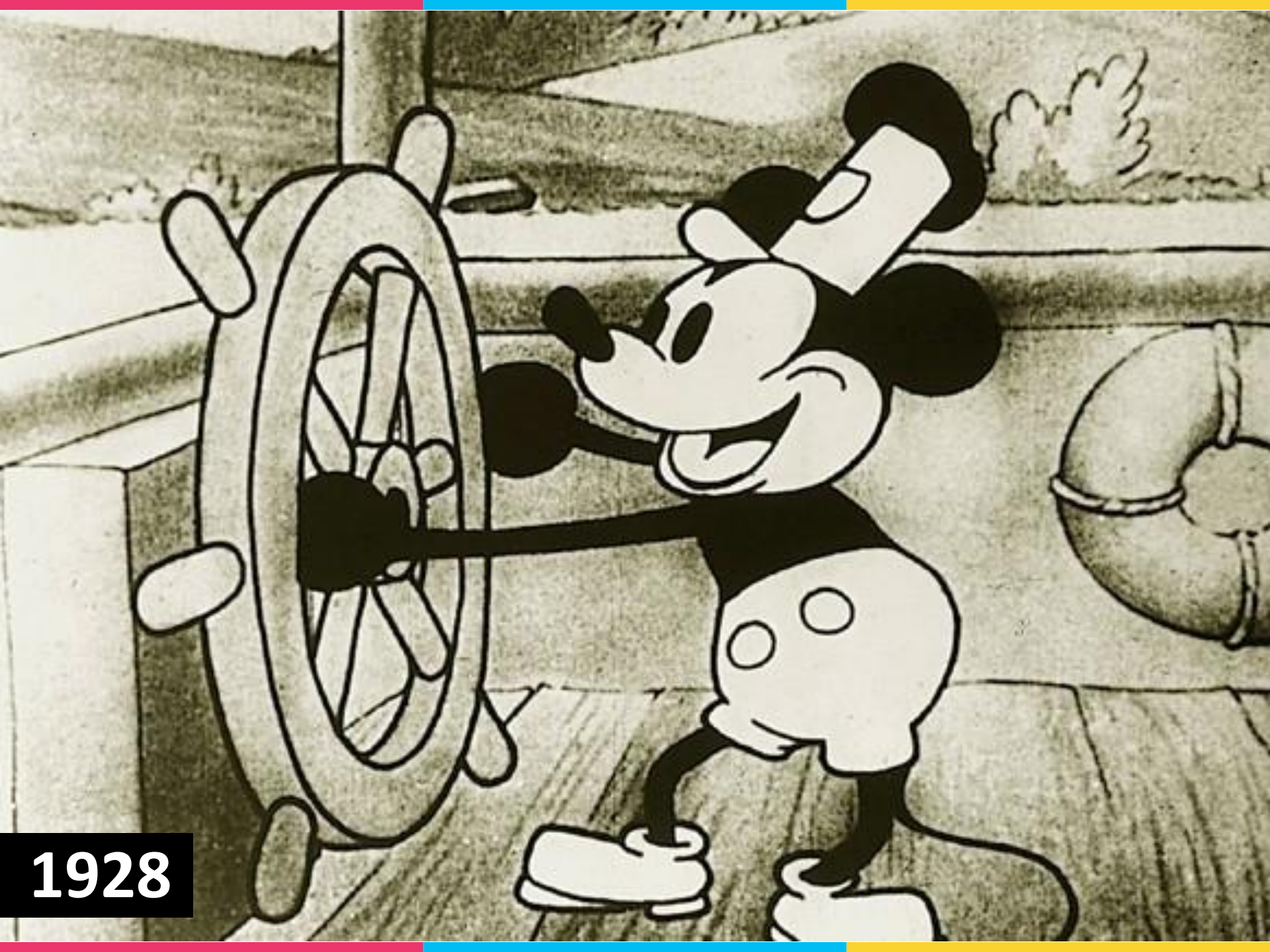   - Reaches people all over the world

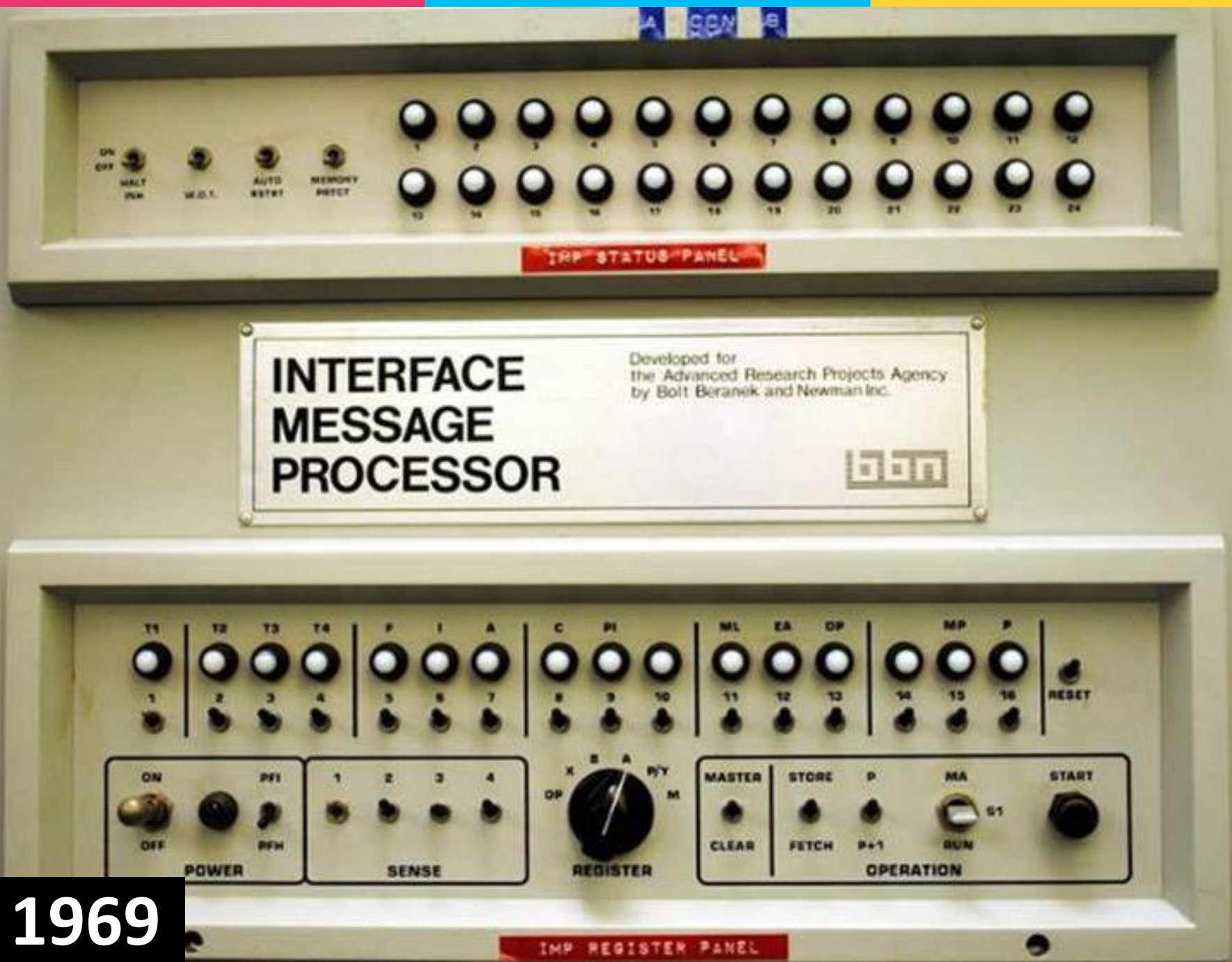**The Evolution of**

Digital Media

15,000 - 13,000 BC

1914

1928

1928 - 1931

1950s

INTERFACE
MESSAGE
PROCESSOR

Developed for
the Advanced Research Projects Agency
by Bolt Beranek and Newman Inc.

bbn

IMP STATUS PANEL

ON
OFF
HALT
RUN

W.D.T.

AUTO
RSTRT

MEMORY
PRTCT

IMP REGISTER PANEL

1969

T1 T2 T3 T4   F I A   C PI   ML EA OP   MP P
1   2   3   4   5 6 7   8 9 10 11 12 13   14 15 16   RESET

POWER
ON   PFI
OFF   PFW

SENSE
1 2 3 4

REGISTER
X S A R/Y
OP   M

OPERATION
MASTER   STORE   P   MA   START
CLEAR   FETCH   P+1   RUN   S1
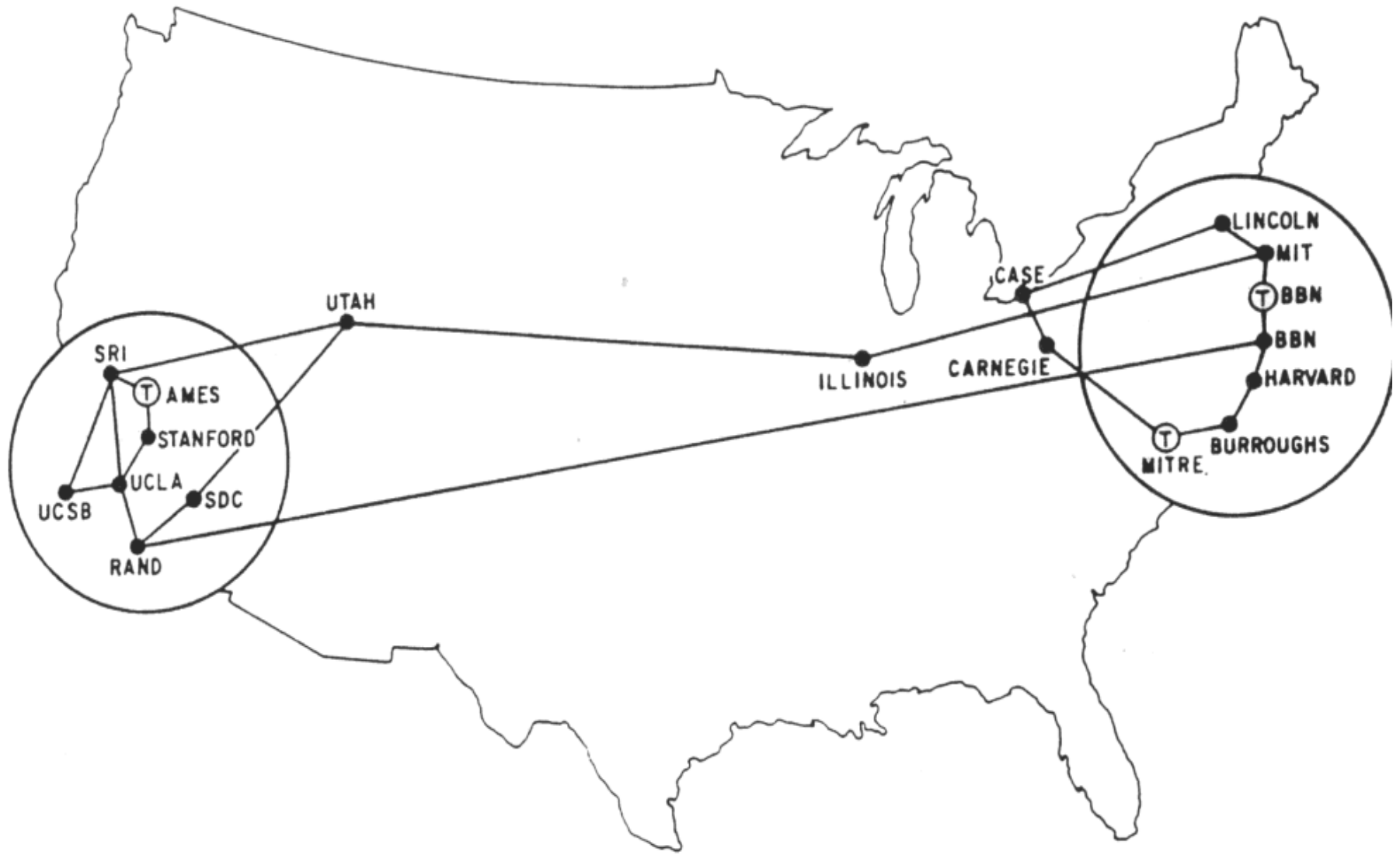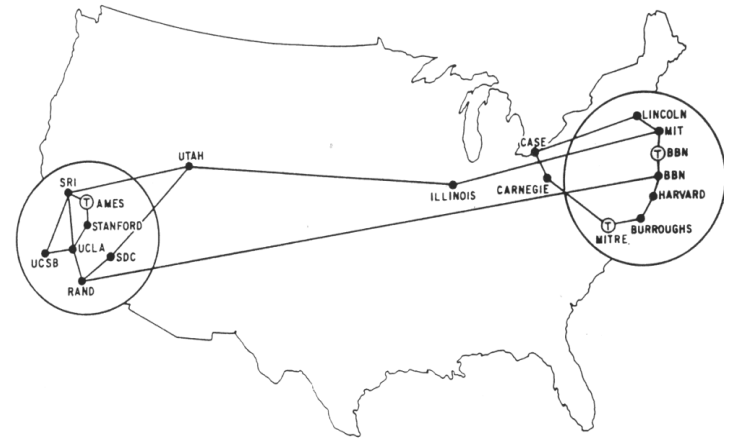
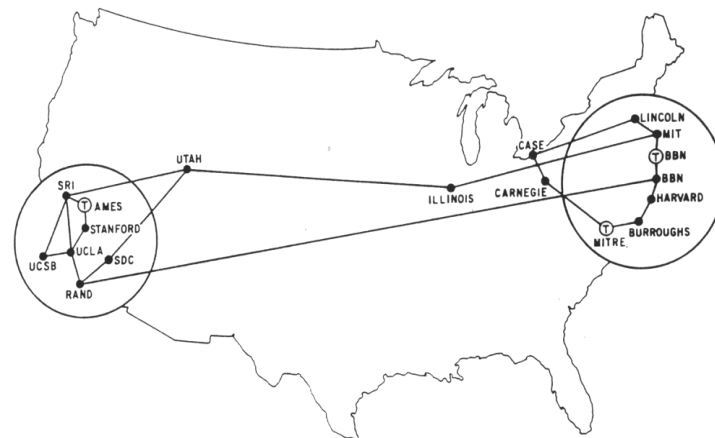**Arpanet**

Creation of Arpanet 1969

- Arpanet Objective
  - Network technology
  - Connect Colleges
    - 4 locations
      - UCLA
      - Stanford
      - UC Santa Barbara
      - University of Utah
  - Share information
    - Research

MAP 4   September 1971
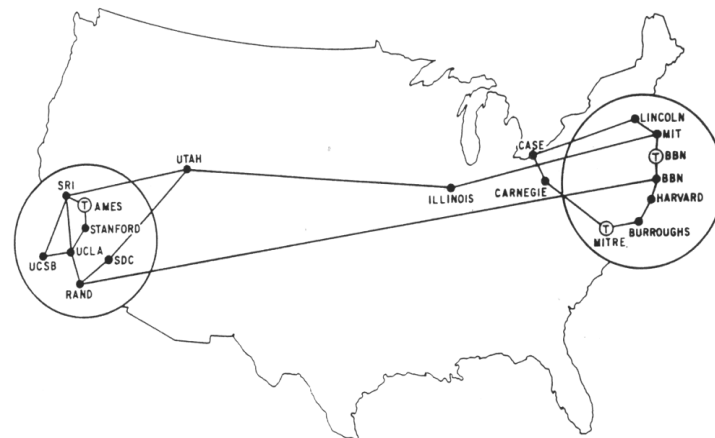
Creation of Arpanet 1969

- The Advanced Research Projects Agency Network (ARPANET)
  - The world's first operational packet switching networks
  - The first network to implement TCP/IP
  - What became the global Internet

MAP 4   September 1971

Creation of Arpanet 1969

- The Advanced Research Projects Agency Network (ARPANET)
  - Funded by the U.S. Department of Defence
    - Projects at universities and research labs in the US
  - The Internet Backbone
    - Packet switching
    - TCP/IP

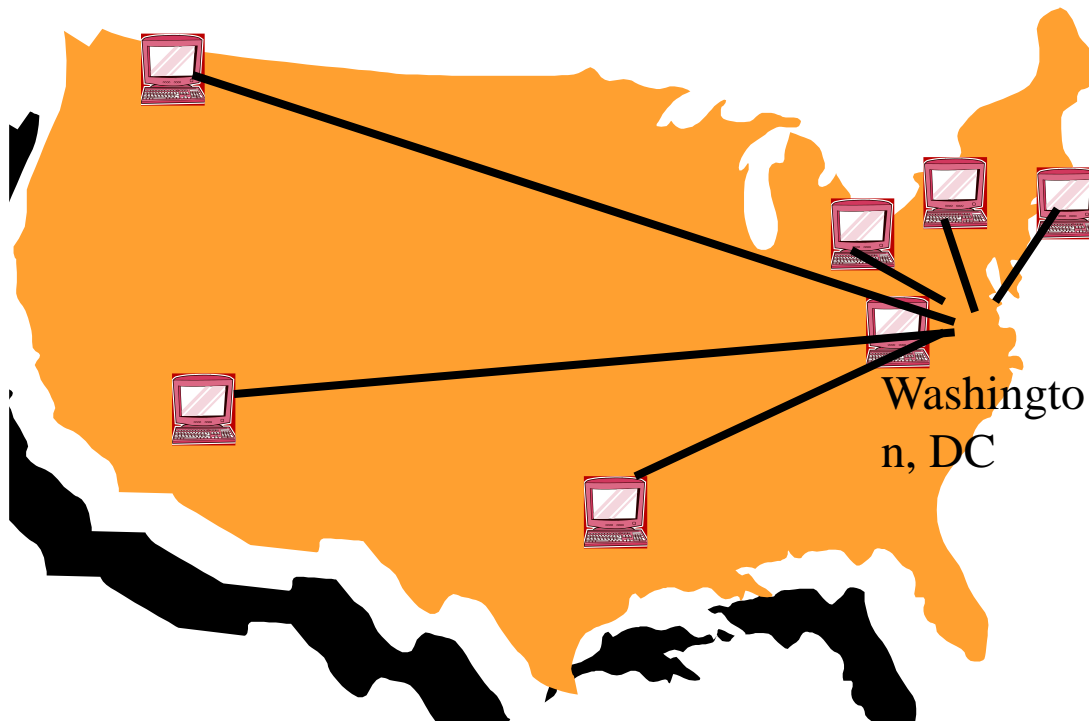MAP 4   September 1971

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Creation of Arpanet 1969

- Let's look at several ways to connect some computers together and consider both the good and the bad for each approach!
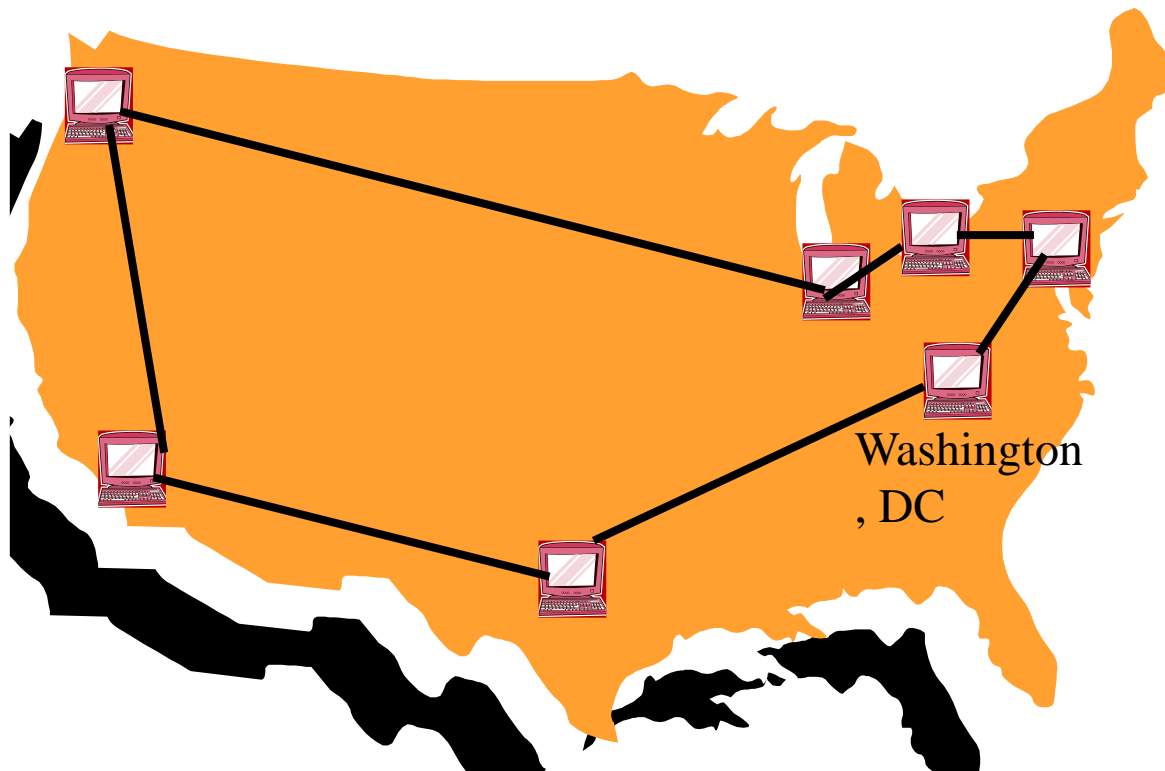
Creation of Arpanet 1969

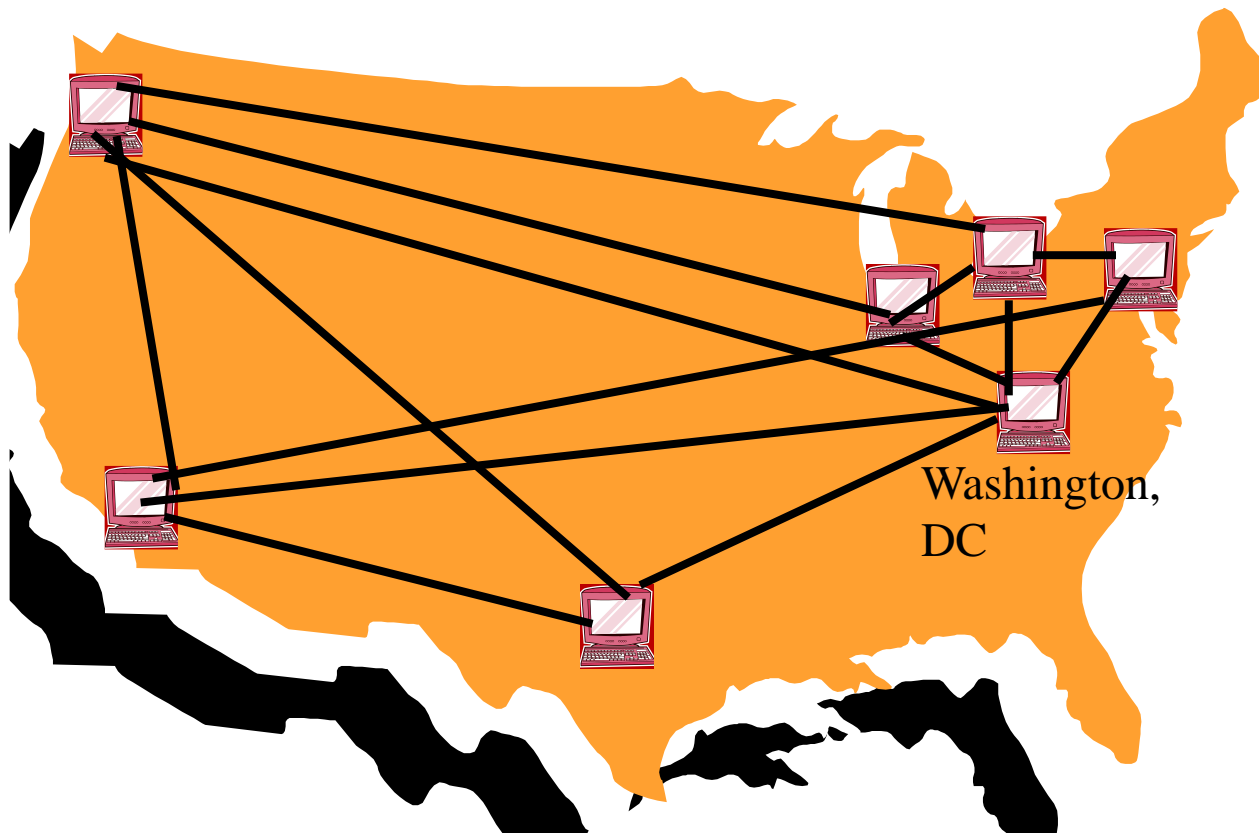- What is wrong and right with this connection approach?

Washington, DC

Creation of Arpanet 1969

- How about this one?

Washington, DC

Creation of Arpanet 1969

- How about this one?

Washington, DC

World Wide Web

- Which area do you think has the most people?
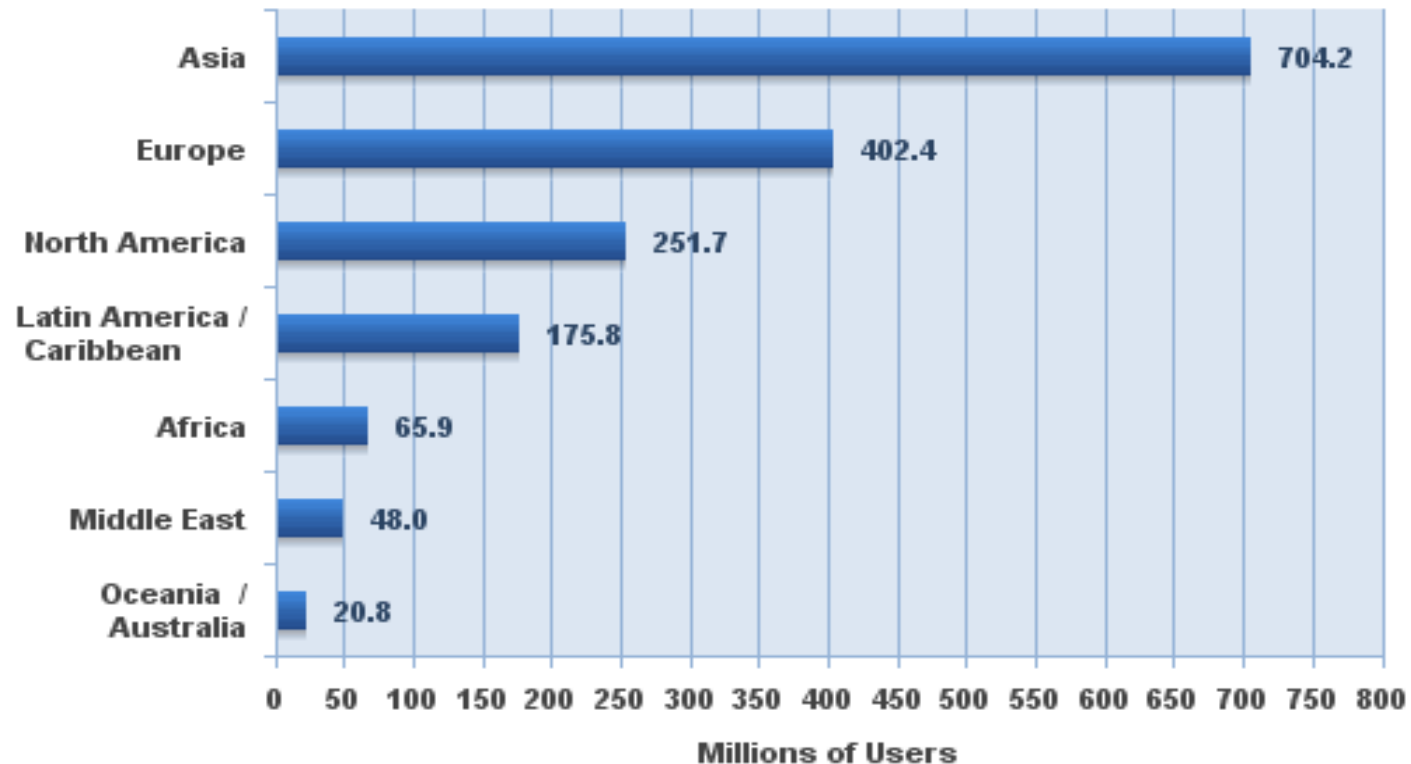 - Africa
  - Asia
  - Europe
  - Latin America
  - Caribbean
  - Middle East
  - North America
  - Australia

- Which area do you think has the most internet users?

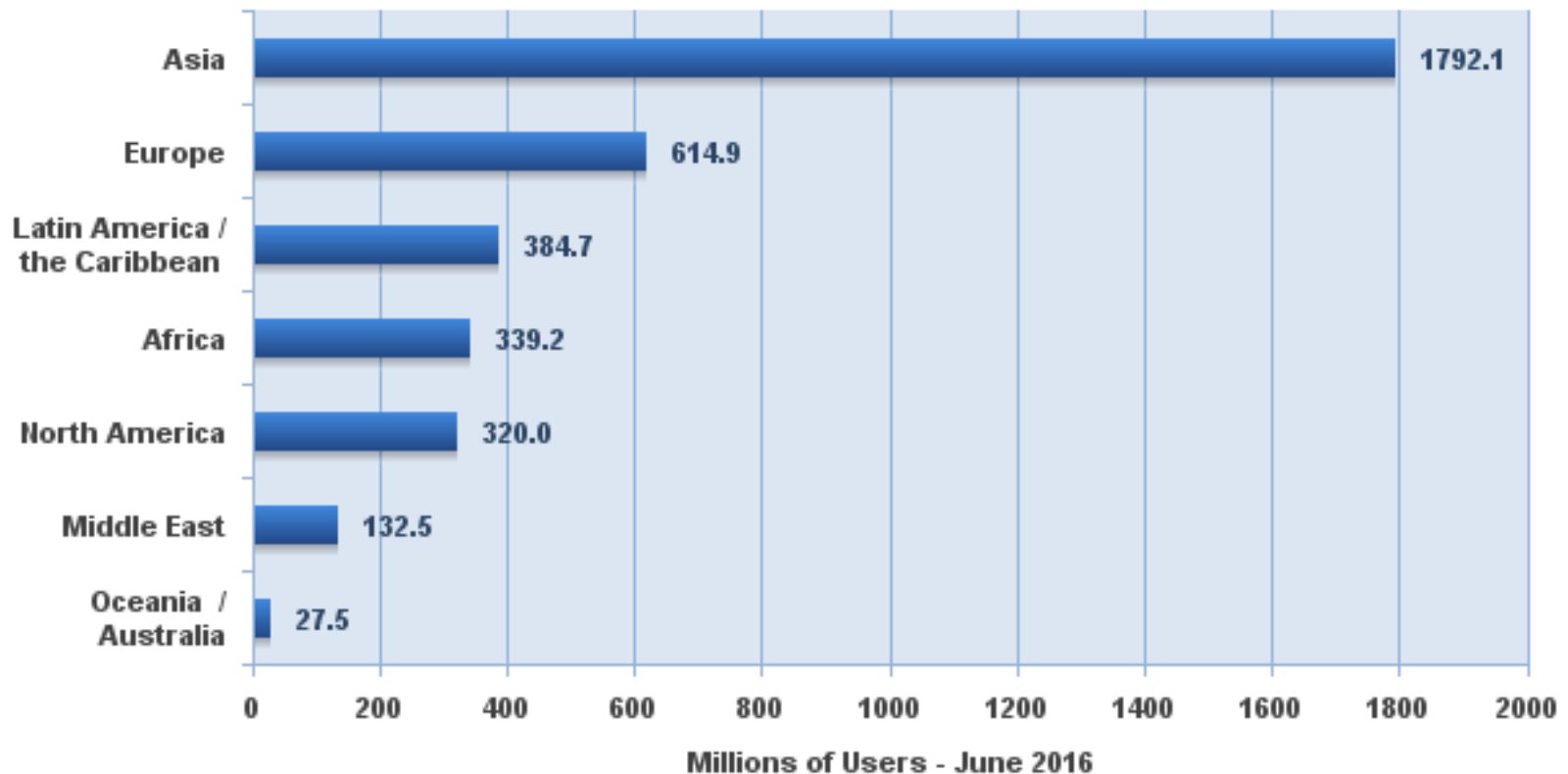- Which area is the smallest, has the least users?

World Wide Web: 2009

Internet Users in the World by Geographic Regions

World Wide Web: 2016

Internet Users in the World by Geographic Regions - June 2016

Region	Millions of Users
Asia	1792.1
Europe	614.9
Latin America / the Caribbean	384.7
Africa	339.2
North America	320.0
Middle East	132.5
Oceania / Australia	27.5

Millions of Users - June 2016

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INTERNET USAGE STATISTICS
The Internet Big Picture
World Internet Users and Population Stats

WORLD INTERNET USAGE AND POPULATION STATISTICS						
World Regions	Population (2009 Est.)	Internet Users Dec. 31, 2000	Internet Users Latest Data	Penetration (% Population)	Users Growth 2000-2009	Users % of Table
Africa	991,002,342	4,514,400	65,903,900	6.7 %	1,359.9 %	3.9 %
Asia	3,808,070,503	114,304,000	704,213,930	18.5 %	516.1 %	42.2 %
Europe	803,850,858	105,096,093	402,380,474	50.1 %	282.9 %	24.2 %
Middle East	202,687,005	3,284,800	47,964,146	23.7 %	1,360.2 %	2.9 %
North America	340,831,831	108,096,800	251,735,500	73.9 %	132.9 %	15.1 %
Latin America/Caribbean	586,662,468	18,068,919	175,834,439	30.0 %	873.1 %	10.5 %
Oceania / Australia	34,700,201	7,620,480	20,838,019	60.1 %	173.4 %	1.2 %
WORLD TOTAL	6,767,805,208	360,985,492	1,668,870,408	24.7 %	362.3 %	100.0 %

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INTERNET USAGE STATISTICS
The Internet Big Picture
World Internet Users and 2016 Population Stats

WORLD INTERNET USAGE AND POPULATION STATISTICS JUNE 30, 2016 - Update					
World Regions	**Population (2016 Est.)**	**Population % of World**	**Internet Users 30 June 2016**	**Penetration (% Population)**	**Growth 2000-2016**	**Users % of Table**
Africa	1,185,529,578	16.2 %	339,283,342	28.6 %	7,415.6%	9.4 %
Asia	4,052,652,889	55.2 %	1,792,163,654	44.2 %	1,467.9%	49.6 %
Europe	832,073,224	11.3 %	614,979,903	73.9 %	485.2%	17.0 %
Latin America / Caribbean	626,054,392	8.5 %	384,751,302	61.5 %	2,029.4%	10.7 %
Middle East	246,700,900	3.4 %	132,589,765	53.7 %	3,936.5%	3.7 %
North America	359,492,293	4.9 %	320,067,193	89.0 %	196.1%	8.9 %
Oceania / Australia	37,590,704	0.5 %	27,540,654	73.3 %	261.4%	0.8 %
WORLD TOTAL	7,340,093,980	100.0 %	3,611,375,813	49.2 %	900.4%	100.0 %

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Internet Usage Statistic: 2019

WORLD INTERNET USAGE AND POPULATION STATISTICS 2019 Mid-Year Estimates						
World Regions	**Population (2019 Est.)**	**Population % of World**	**Internet Users 30 June 2019**	**Penetration Rate (% Pop.)**	**Growth 2000-2019**	**Internet World %**
Africa	1,320,038,716	17.1 %	522,809,480	39.6 %	11,481 %	11.5 %
Asia	4,241,972,790	55.0 %	2,300,469,859	54.2 %	1,913 %	50.7 %
Europe	829,173,007	10.7 %	727,559,682	87.7 %	592 %	16.0 %
Latin America / Caribbean	658,345,826	8.5 %	453,702,292	68.9 %	2,411 %	10.0 %
Middle East	258,356,867	3.3 %	175,502,589	67.9 %	5,243 %	3.9 %
North America	366,496,802	4.7 %	327,568,628	89.4 %	203 %	7.2 %
Oceania / Australia	41,839,201	0.5 %	28,636,278	68.4 %	276 %	0.6 %
WORLD TOTAL	7,716,223,209	100.0 %	4,536,248,808	58.8 %	1,157 %	100.0 %

https://www.internetworldstats.com/stats.htm

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History - Summary

- **Past**
  - **15,000–13,000 BC -** Prehistoric humans paint images on the walls of their caves
    - Grotte de Lascaux, France
  - **1914 -** Silent movies incorporated multiple media by using film and text captions together
  - **1928**— Walt Disney debuts [Steamboat Willie,](#) the third short movie starring a mouse named Mickey, and the first cartoon to use synchronized sound.

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History - Summary

- **Past**
  - **1928—1931** "Movies with sound replace silent movies
  - **1950s:** Old black and white movies are being renewed with "colour"
  - **1969:** Network technology introduced: ARPANET

The Digital Age

Apple vs IBM

1977

1981

1991

History - Summary

- The Digital Age
  - **1969:** Network technology introduced: ARPANET
  - **1977:** Apple Leads the way
  - **1981:** IBM PC announced and captures market in 18 months

History - Summary

- The Digital Age
  - **1991:** World Wide Web debut
    - Tim Berners Lee
  - **1992:** MS Windows version 3.1 is released.
  - **1992:** Hypertext markup language (HTML) debuts
  - **1993:** The first graphical browser is born:
    - Mosaic browser (Netscape) Marc Anderssen,), Erin Brina Jim Clark,(SGI(Univ of Illinois)

History - Summary

- The Digital Age
  - **1994:** The Rolling Stones become the first major band to broadcast a live performance over the Internet
  - **1995:** Disney releases Toy Story, the first feature-length movie computer graphics
    - 77 minutes film; 4 years to make; 800,000 machine hours to render

History - Summary

- The Digital Age
  - **1996:** Affordable digital cameras widely available.
  - **1998:** Google Search Engine operates – Larry Page, Sergey Brin
  - **1999:** Napster debuts, allowing users to download (and share) MP3s

History - Summary

- The Digital Age
  - **2003:** Android operating system is launched by Andy Rubin. In August
  - **2005:** Android is purchased by Google.
  - **2005:** YouTube video-sharing website is launched. Users can now upload content from their source device directly to the internet

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History - Summary

- The Digital Age
  - **2007:** iOS Originally unveiled in 2007, for the iPhone,
  - **2013:** Disney announces that "The princess and the frog" was its last traditionally animated film. All future Disney films will use Computer Generated Imagery (CGI).

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The Future of

Digital Media

The Future of Digital Media

- Multimedia Growth
  - More than a $30 billion industry
  - Three top applications
    - Entertainment ($9.1 Billion)
    - Publishing ($4.7 Billion)
    - Education/Training ($4.3 Billion)
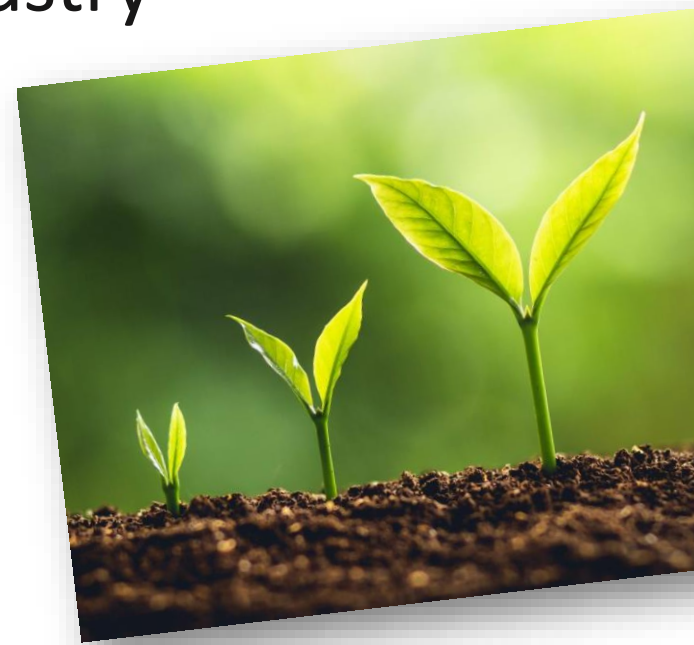
The Future of Digital Media

- What's Next?
  - E-learning
  - iTV (interactive TV)
  - Web 2.0
    - Social Web
      - Content sharing
      - Social-networking
      - Creativity
      - Collaboration
  - New Technology
    - Mixed Reality

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The Future of Digital Media

- The Challenges
  - Legal Issues
  - Copyright, rights management, piracy
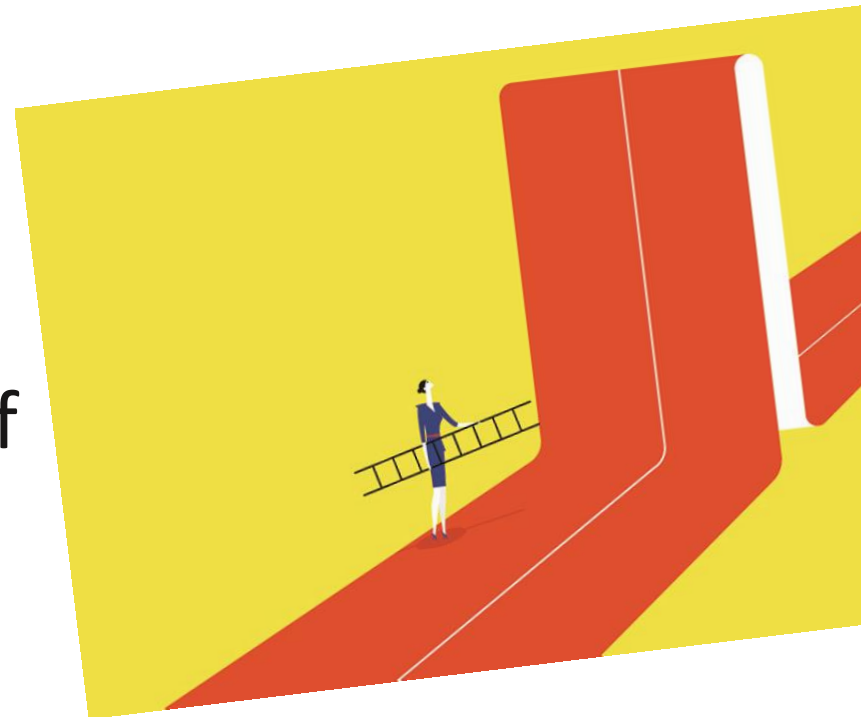 - Problematic because of the rapid change in technology

The Future of Digital Media

- Better skills
  - Need to be multi-skilled:
    - Domain knowledge
      - Business, Communication, IT and design
    - Think and write clearly
    - Design/creativity
  - Understand the requirements
    - Media
    - Video

Multimedia Delivery

Multimedia Delivery

Education	Entertainment	Reference	Business
Offering instruction ● CD-ROM titles for preschoolers ● Biology labs in virtual labs ● How to use software applications	**The largest category of multimedia apps** ● Games on CD-ROMs, the web ● Proprietary systems (X-Box,Playstation) ● MP3 Players, Ipods	**Microsoft's *Encarta Encyclopedia* and Compton's *Interactive World Atlas*** ● Interactive multimedia, including sound, video, and 3-D animation to provide information and illustrate concepts.	**Businesses delivering both marketing applications and employee training on CD's intranet** ●Job openings ● Product lines ● Services

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Multimedia Delivery

	CD's	World Web Web
Access Time	**View in a few moments** by inserting into drive	**Slow connection speeds** to the Internet affect time needed to download images, play video etc
Ability to change content	**Cannot change content** Must recreate and redistribute to audience	**Easy to update material** through webpages, and add new video content New updates can be **instantly accessed off the web**

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Multimedia Features

- Multimedia components are used in combination with the following features:
  - Interactivity
  - Hyperlinking

Multimedia Features

- Interactivity
  - Examples
    - Surfing the Internet and clicking on links to move to different webpages
    - Student selecting choices during an on-line computer-based exam
    - A user simulating a driver test through a computer game.

Multimedia Features

- Interactivity
  - What are some examples?
    - Control of an application, system, or service.
    - Engage with multimedia content, rather than being a passive viewer (like TV)

Multimedia Features

- Hyperlinking
  - What is it?
    - Hyperlinking allows the user to "jump" from one part of the multimedia application to another.
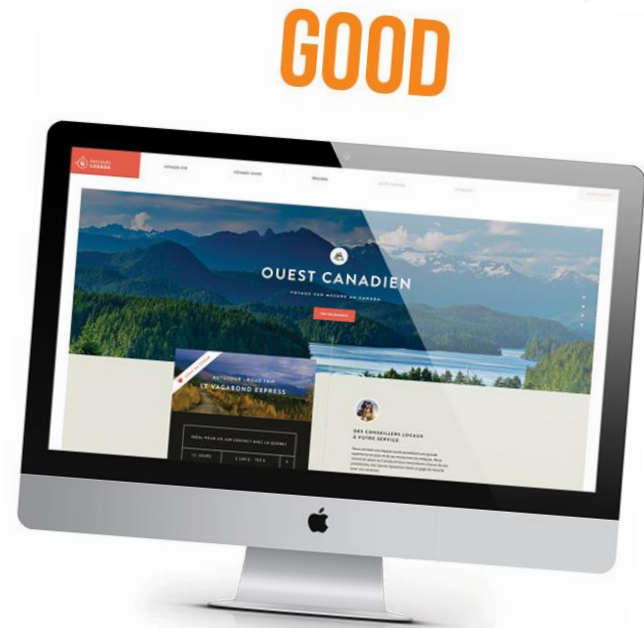
Websites

Websites

Websites

- Consider your first visit
  - Inaccessibility
    - Slow
  - Navigation
    - Frustrating
  - Advertisement
  - Satisfaction
  - Unprofessional

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Websites

- Consider your first visit
  - 7 Factors of Good Web Design
    - Purpose
    - Clarity
    - Usability
    - Accessibility
    - User Focus
    - Navigation
    - Appearance

BAD

GOOD

Interesting Videos

- First motion picture

http://www.youtube.com/watch?v=dDmAxdLvdQ4

- First photograph

http://www.youtube.com/watch?v=sOkd8ObhN_M&feature=related

- Interview with Sergey Brin – founder of google

http://www.youtube.com/watch?v=zIx5F0vbjB4

- Interview with Mark Zuckerberg – founder of Facebook

http://www.youtube.com/watch?v=v32AABzvCyc

Questions