

# **SSUSH11: EXAMINE CONNECTIONS BETWEEN THE RISE OF BIG BUSINESS, THE GROWTH OF LABOR UNIONS, AND TECHNOLOGICAL INNOVATIONS.**



***ELEMENT C: Examine the influence of key inventions on US infrastructure, including but not limited to the telegraph, telephone, and electric light bulb.***

# Influence of Key Inventions on US Infrastructure



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- ❑ The infrastructure of the United States was changed over time by various inventions.
- ❑ Some of the most important inventions were influenced by the conduction of electric current that was realized in the 1830s.
  - Transmitting electric current enabled instant communication by way of telegraph transmission and later the telephone.
- ❑ In the 1870s, Thomas Edison changed American businesses and homes with the invention of the electric light bulb.
- ❑ The effects of technological advances forever changed how people lived and worked.



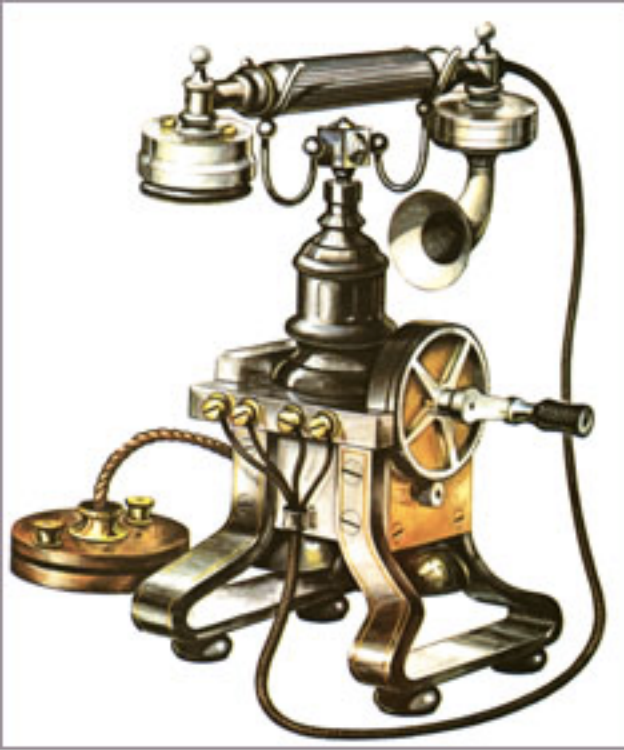
# Telegraph



- ❑ The changes in communication, as well as the expansion of railroads, helped to better connect the quickly expanding West with the industrializing East. The transfer of information, resources, and marketable goods connected all regions of the United States.
- ❑ Telegraph communication was the first nationwide information transmitter.
  - Samuel Morse invented the technology in 1832.
  - The telegraph machine received coded messages across electric wires connecting long distances.
    - Morse Code is the system of dots and dashes that correspond to letters of the alphabet. Telegraph operators decoded the messages sent instantaneously across the telegraph wires.
  - With the development of telegraph technology, business could be more efficiently conducted between industrial centers in the East and their sources for raw materials in the South and West.
  - The Civil War was the first war conducted with the use of widespread telegraph connectivity.
    - Abraham Lincoln and his Secretary of War Edwin Stanton received almost daily updates at the Washington DC telegraph office from various fighting fronts and were able to coordinate the entire war based on real time information from the field.



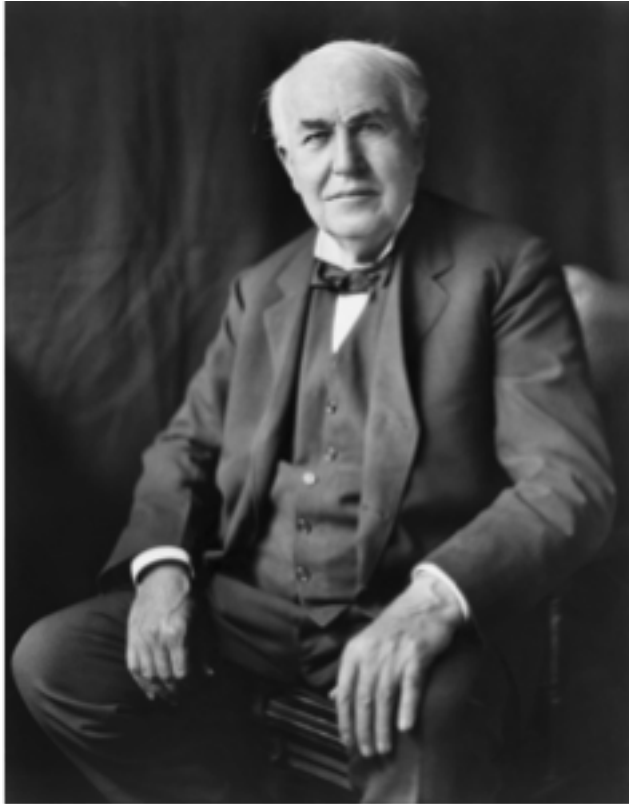
# Telephone



- ❑ In 1876, Alexander Graham Bell further expanded on the telegraph's capability for instant communication. He invented the telephone, which allowed for voice - to - voice communication over electric wires.
  - As was true for the telegraph, the telephone impacted the United States by allowing instant communication.
  - With the invention of the telephone, conversations were more efficient and true discussion between individuals in distant locations was made possible.



# Electric Light Bulb



- ❑ Thomas Edison was one of the most famous and successful American inventors. He invented a wide variety of technologies and held over 1,000 patents.
- ❑ Edison established the concept of industrial research, which allowed him to develop and expand his wide-ranging ideas. He founded a research laboratory in Menlo Park, New Jersey that was staffed by engineers and technicians under his direction.
- ❑ One of Edison's most revolutionary inventions was the electric light bulb.
  - Not only did this development allow factories to be lit and operate twenty-four hours a day, but the light bulb also illuminated buildings, streets, and neighborhoods across the United States.
  - The light bulb was developed in the 1870s and quickly replaced the more dangerous and expensive lamp oils that burned for illumination.



# **Impact of Key Inventions on US Infrastructure**

- ❑ With greater technological innovation, such as the telegraph, telephone, and electric light bulb came greater connectivity and productivity for the development of industry in the United States.
- ❑ The late nineteenth century was a time of great change in the way people lived and conducted business in part because of these inventions.
  - Communities invested in the technology that in turn cut costs to individuals.
  - The United States became a contending industrial producer during the same period in part because of the efficient production of products and ease of communication for business across great distances.