**Epochs of Urban Transportation Development**

**Proposed by John Borchert in 1967.**

**1. Sail-Wagon Epoch, 1790-1830*:* Pre-industrial** epoch.  
Transportation slow: overland travel (wagon and horse) and waterways (sailing vessels).  
Trade was heavily oriented towards Europe.  
Interior portions of the country were still mostly inaccessible.  
Leading cities at that time were Boston, New York and Philadelphia.  
These cities were not yet Primate Cities - not large enough yet.

### Primate City

Exceptionally large cities based on a comparison of the ratio of the population in one city to another.

**2. Iron Horse Epoch, 1830-1870:** Start of **the Industrial Revolution** in NA.  
Introduction and spread of steam powered railroad.  
Nationwide transportation system begins to develop.  
First transcontinental railroad is completed. (1869)  
Faster and easier transportation = industrialization.  
Coal industry grows.  
Cheaper, easier transportation of raw materials allows manufacturing to develop westward from the East Coast.  
- Pittsburgh, Detroit and Chicago.  
New York City becomes a Primate City in 1830.

**3. Steel-Rail Epoch, 1870-1920 Advancement of the Ind. Rev.**

**Time-Space Convergence**

Faster travel and communications.  
Rail cut travel time across the US from months to a week.  
Telegraph meant instant exchange of info.

North America (US):  
National metropolitan system development occurs.  
Steel industry plays a major role in defining this epoch.  
Iron rails are replaced by steel rails.  
Allows for higher travel speeds, heavier loads, and cheaper transportation.  
Steel industries - Chicago-Detroit-Pittsburgh axis

Steel industries location develops in response to the location of raw materials.  
What two materials are needed to make steel?

**4. Auto-Air-Amenity Epoch, 1920-1970**

Improvements in transportation.  
Internal combustion engines improved and used in cars, trucks, locomotives, airplanes and ships.  
Henry Ford's production line assembly method led to increased automation in manufacturing - increased productivity  
More jobs were created to manage the industrial economy.  
Separation of White Collar workers (management) and Blue Collar workers (skilled and unskilled factory labor)  
White collar professions meant higher income.  
Higher income leads to the purchasing of nicer possessions, bigger homes, homes located on the margins of the industrial cities (suburbs).

**Megalopolis Growth**

Megalopolis - merging of multiple cities to form a continuous urban landscape.

**\*\*Shifting Populations**

Throughout these first four epochs populations have shifted within the realm.  
Major migration westward – nationwide.  
Urban Migration  
1) Initially movement was towards industrial centers.  
2) Development of white collar professions redirected this movement.

**5. Satellite-Electronic-Jet Propulsion Epoch, 1970-?** “Post-Industrial” Epoch

1939 - first turbo-jet engine airplane  
1939 - first electronic computer  
1944 - first digital computer  
1957 - Sputnik I launched by the USSR – marks beginning of the Space Age

Post-industrial society characterized by:  
Production and manipulation of information/data  
Services  
High-tech manufacturing  
Global economies - international business and travel