

# Drive Your Own Car

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This talk analyzes open source software's challenge to proprietary software in an historical context.

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*<http://momjian.us/presentations>*

*There Is Nothing New  
Under The Sun*

*Technological Change  
Is Nothing New*

# New Technologies Have Changed Industries Before

- ▶ Transportation
  - ▶ Horse
  - ▶ Automobile
  - ▶ Airplane
- ▶ Energy
  - ▶ Coal
  - ▶ Oil Lamp
- ▶ Communications
  - ▶ Printing
  - ▶ Computers
  - ▶ Internet

*The Most Dramatic Impact  
Is On Industries  
That Seem Unchangeable*

# Robber Barons Of Industry - 1890



They seems unchangeable.

# The Robber Barons of Industry

- ▶ John Jacob Astor (real estate, fur)
- ▶ Andrew Carnegie (steel)
- ▶ Jay Cooke (finance)
- ▶ Daniel Drew (finance)
- ▶ James Fisk (finance)
- ▶ Henry Flagler (railroads)
- ▶ Henry Clay Frick (steel)
- ▶ Jay Gould (finance, railroads)
- ▶ Edward Henry Harriman (railroads)
- ▶ Collis P. Huntington (railroads)
- ▶ James J. Hill (railroads)
- ▶ J. P. Morgan (banking)
- ▶ John D. Rockefeller (oil)
- ▶ Leland Stanford (railroads)
- ▶ Cornelius Vanderbilt (railroads, shipping)

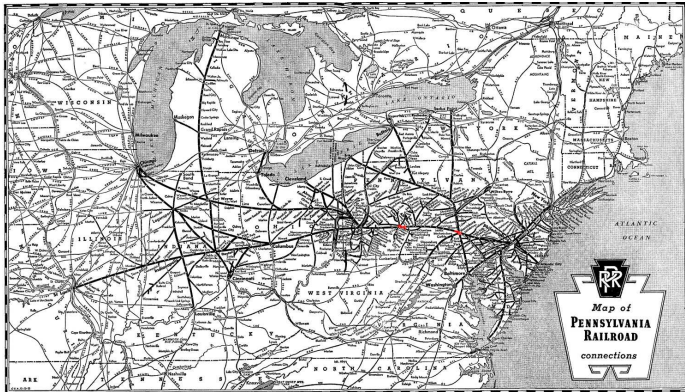
# Characteristics of Robber Baron Industries

- ▶ High Infrastructure Costs
- ▶ Scarce Resources
- ▶ Legal Barriers To Entry

# Choose One Industry — Railroads

- ▶ High Infrastructure Costs (Trains, Stations)
- ▶ Scarce Resources (Land For Tracks, Rail Yards)
- ▶ Legal Barriers To Entry

# Infrastructure - Rails



Pennsylvania Railroad System, 1954

# Stations



Thirtieth Street Station, Philadelphia, Built 1934

# Power



Electric Power Distribution

# Trains



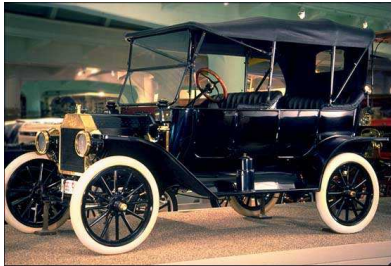
GG1 Electric Locomotive

# Staff



Engineers, Conductors, Track Maintenance, Station Staff

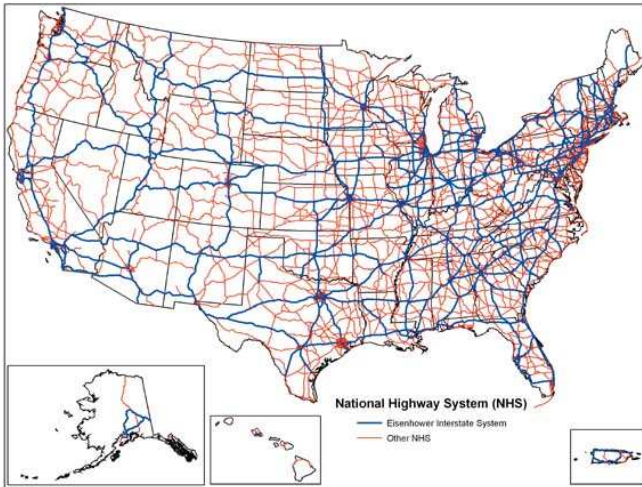
# Technological Change: The Internal Combustion Engine Enables The Automobile



# Initially Automobile Seen As A Fad

- ▶ Costly
- ▶ Unreliable
- ▶ Roads Inadequate
- ▶ Same Speed As A Horse
- ▶ Slower Than The Train

# Roads



Interstate Highway System, For Defense, Started In The 1950's

# Purchase



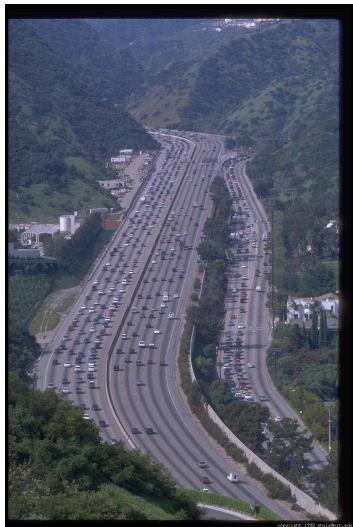
Would You Own Your Own Train? No.

# Service



Service Is Distributed Near Consumers

# Driving



You Control — no conductor, no tracks, no station, no timetables

# Freight



# You At The Wheel



# The Robber Barons of Software



Bill Gates



Larry Ellison



Scott McNealy

# Robber Baron?



At Least One Person Thinks So

# Characteristics of Robber Baron Industries (Again)

- ▶ High Infrastructure Costs
- ▶ Scarce Resources
- ▶ Legal Barriers To Entry

# Staff



Pay Those Programmers In The Building

# Buildings



Oracle Headquarters, Redwood City, California

# Technological Change: The Internet Enables Open Source



# Characteristics Of The Internet

- ▶ Communication Cost Near Zero
- ▶ Developers Don't Have To Be In The Same Building
- ▶ Volunteers Can Now Work Together With Little Expense

# You Behind The Software Wheel



Computer-generated Driving Image

# Questions



<http://momjian.us/presentations>  
*Thirtieth Street Station, Philadelphia*

*The Spirit Of Transportation, Karl Bitter, 1895*