

A. Nuri YURDUSEV

## TECHNOLOGY-DRIVEN CHANGE IN INTERNATIONAL RELATIONS: QUANTITATIVE OR QUALITATIVE?

**Abstract:** This paper takes the view that technological inventions and changes, although appear to be precipitating in the last decades, have always been pivotal for international relations. The paper begins with some examples of technical inventions such as saddle, gunpowder and heavy artillery, steam engine and rail ways, telegraph and telecommunication technics, and digital and online technologies and argues that these technics made great impact upon international relations in respective periods. The paper then deals with the issue of whether these technology-driven changes resulted in quantitative or qualitative changes in international relations in terms of its content and procedures. It concludes by arguing that those changes led to both quantitative and qualitative changes in the nature and conduct of international relations.

### INTRODUCTION

Modern vs. pre-modern

International relations vs. inter-societal relations

Going beyond the local

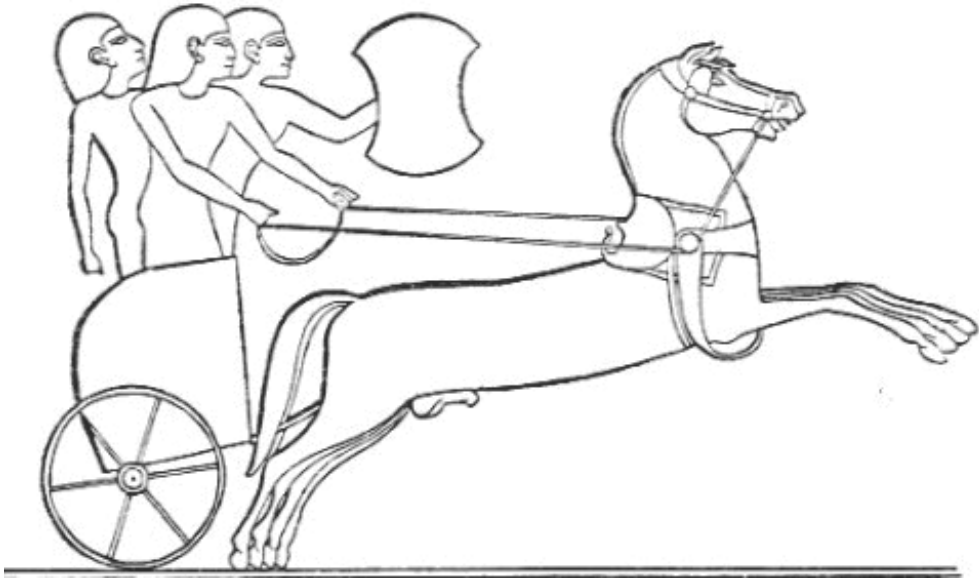
Domestication of horse (from 3500 CB to 2000 CB)

Chariot (2000 CB to 1300 CB)

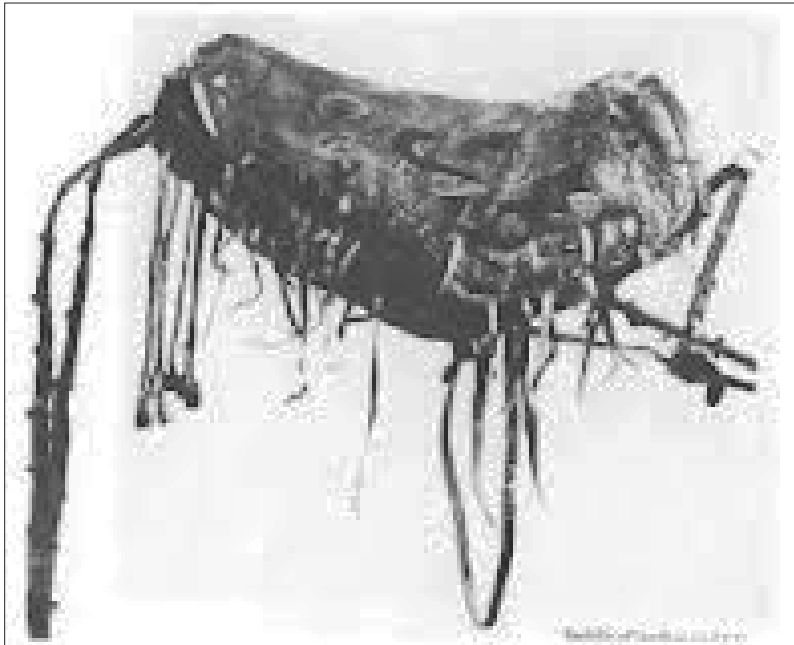
Saddle (700 CB)

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\* Vice President, Turkish Academy of Sciences



Hittite chariot (drawing of an Egyptian relief)



A sythian pad saddle

## HIGH MOBILITY AND MASSIVE MOBILIZATION

Gunpowder and heavy artillery (9<sup>th</sup> to 15<sup>th</sup> centuries)  
From China through the Middle East to Europe



Yuan Dynasty hand cannon (dated 1288)

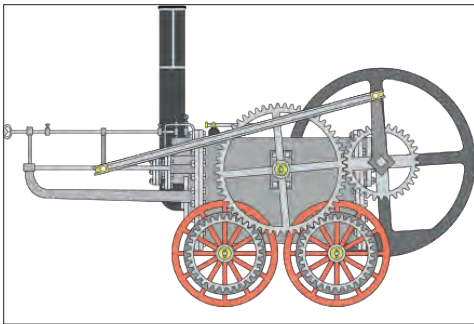


Dardanelles gun — Şahi topu (dated 1453)

Conquest of castles & walled cities  
 Consolidation into centralized kingdoms  
 Sailing vessels, steam engine and railways (16<sup>th</sup> to 19<sup>th</sup> centuries)



16<sup>th</sup> century Spanish Galleon



R. Trevithick 1802 Coalbrookdale locomotive

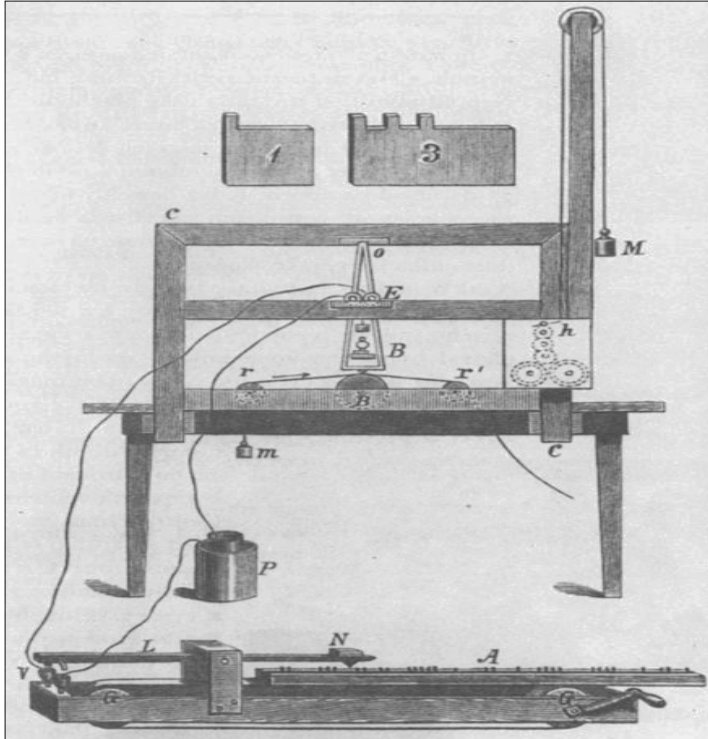


1817 beam and blowing engine

Inter-continental transportation  
 Inter-continental conquest  
 Increased production

## GLOBALIZATION

Telegraph and telecommunication technics (19<sup>th</sup> century)

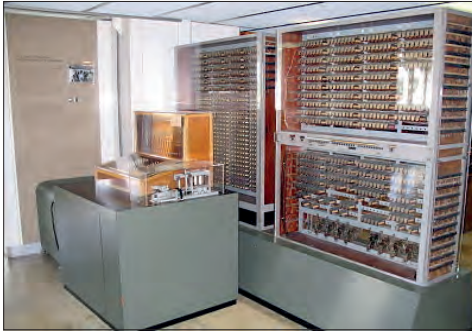


Samuel Morse telegraph

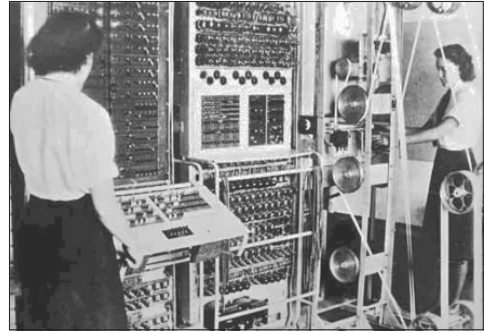
Before telegraph a letter from London to  
New York 12 days  
Istanbul 19 days  
Bombay 33 days  
Sydney 73 days

15 words a minute were transmitted by 1840  
Speedy communication  
Computers, digital technologies and online resources  
(20<sup>th</sup> to 21<sup>st</sup> centuries)

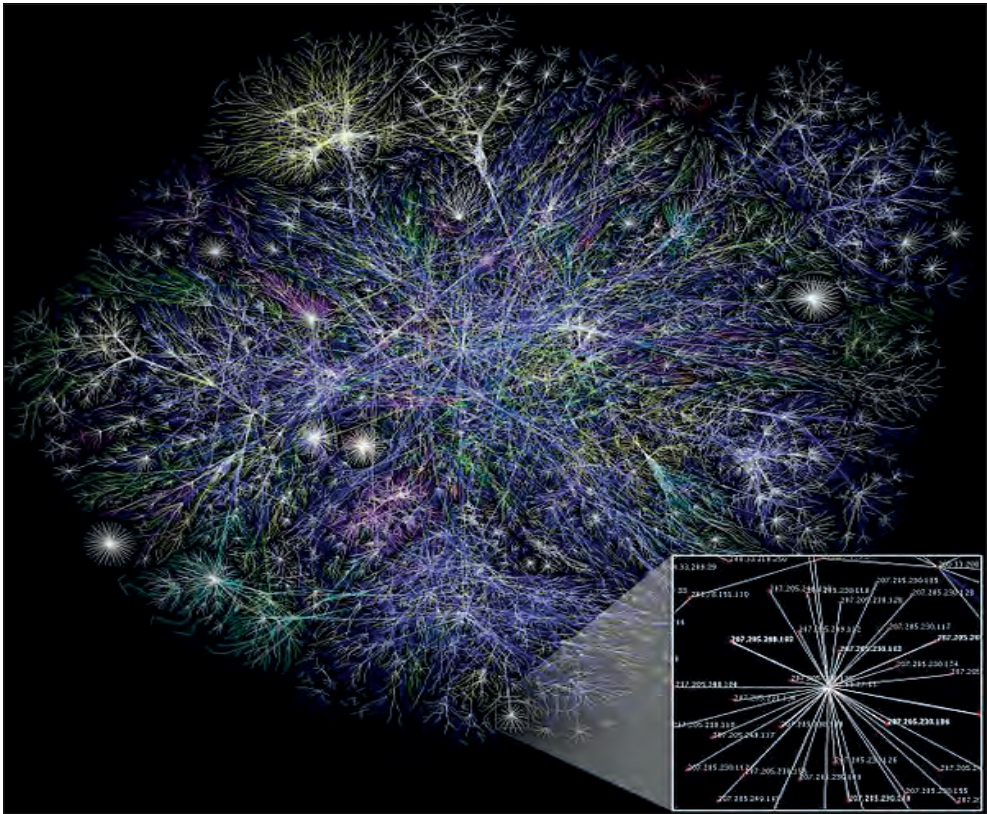




Replica of K. Zuse's computer (1939)



Colossus computer (1943–45)



Visualization from the Opte Project of the routes through a portion of the Internet in 2005

Instant communication, comprehensive storage and ubiquitous availability

## QUANTITATIVE CHANGES

Integration of the globe

Enormous increase in the number of actors and elements

Huge increase in the volume of interactions

## QUALITATIVE CHANGES

Increase in the type of actors

Variety of the issues (high politics to low politics)

Decrease in significance of conventional actors and methods

Blurring of international vs. domestic distinction