

Transportation and Geography

The goal of this lecture is to provide a definition of the nature, role and function of **transport geography**. It also underlines the importance of specific concepts such as **nodes, locations, networks and interactions**.

Transport geography is a sub-discipline of geography concerned about the mobility of people, freight and information.

It seeks to understand the spatial organization of mobility by considering its attributes and constraints as they relate to the origin, destination, extent, nature and purpose of movements.

The Core Principles of Transport Geography

1

- Transportation is the spatial linking of a **derived demand**

2

- **Distance** is a relative concept involving space, time and effort

3

- **Space** is at the same time a facilitator and a constraint for mobility

4

- The relation between space and time can **converge** or **diverge**

5

- A **location** can be a central or an intermediate element of mobility

6

- To overcome **geography**, transportation must consume space

7

- Transportation seeks **massification** but is constrained by **atomization**

8

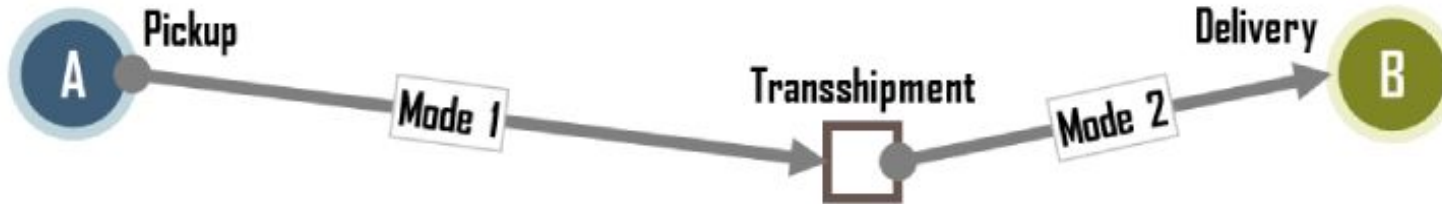
- **Velocity** is a modal, intermodal and managerial effort

REPRESENTATIONS OF DISTANCE

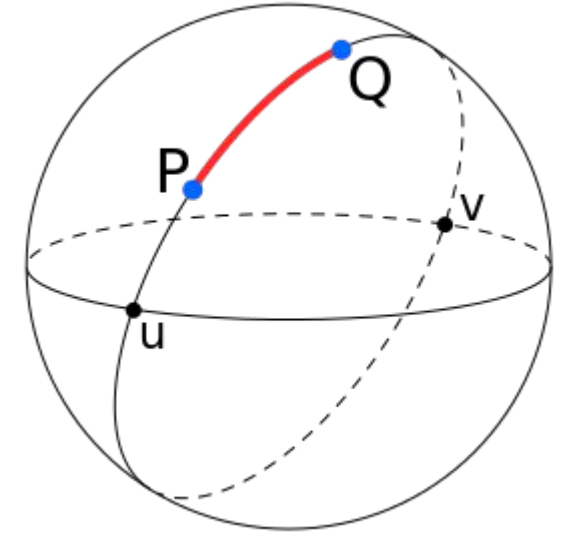
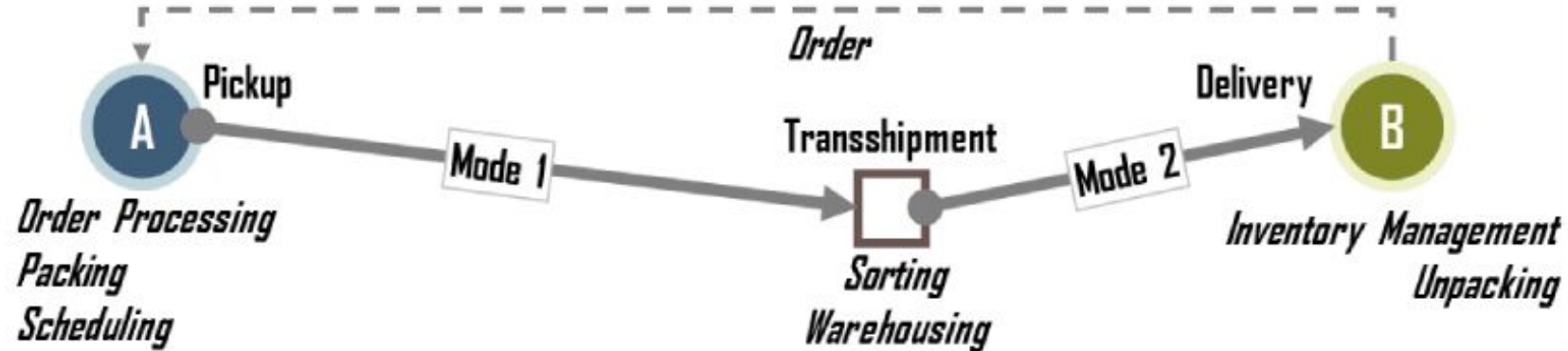
Euclidean Distance



Transport Distance

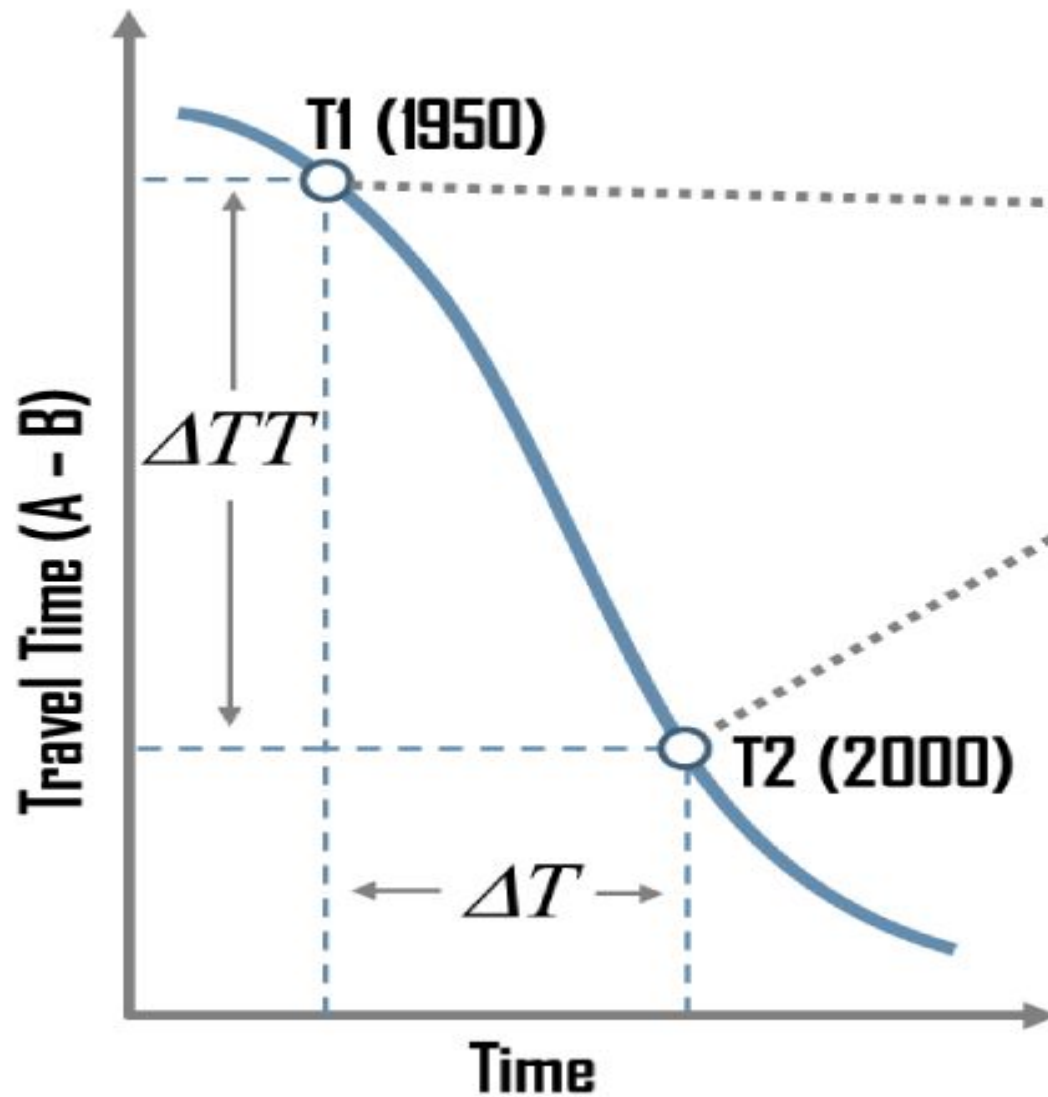


Logistical Distance



Orthodromic distance (drawn in red) between two points on a sphere, P and Q.

Space / Time Convergence



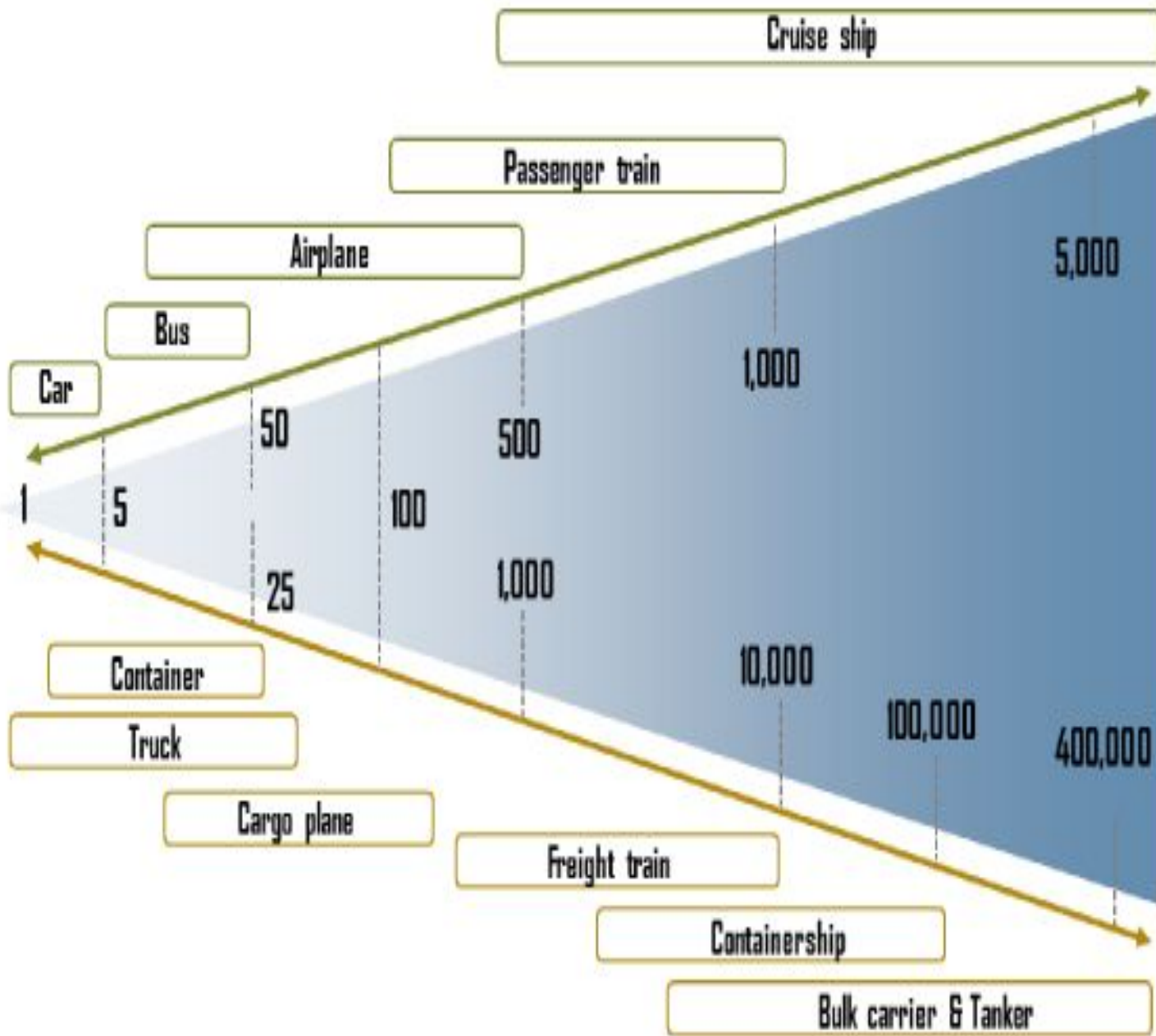
$$STC = \frac{\Delta T}{\Delta TT}$$

$$STC = \frac{(2.6 - 6.2)}{(2000 - 1950)}$$

$$STC = -0.072 \text{ hours per year}$$

Atomization

Person
Parcel
Part



Passengers

Massification

Tons

MASSIFIED TRANSPORTATION

Land: train - about 1,000 passengers

Air: Airbus A380 - 550 passengers

Water: Cruise ship - about 6,000 passengers



Tanker ships - up to 400,000 tons



Bulk carriers - up to 350,000 tons

Transportability refers to the ease of movement of passengers, freight or information.

Transportability related to transport costs as well as to the attributes of what is being transported (fragility, perishable, price).

Political factors can also influence transportability such as laws, regulations, borders and tariffs.

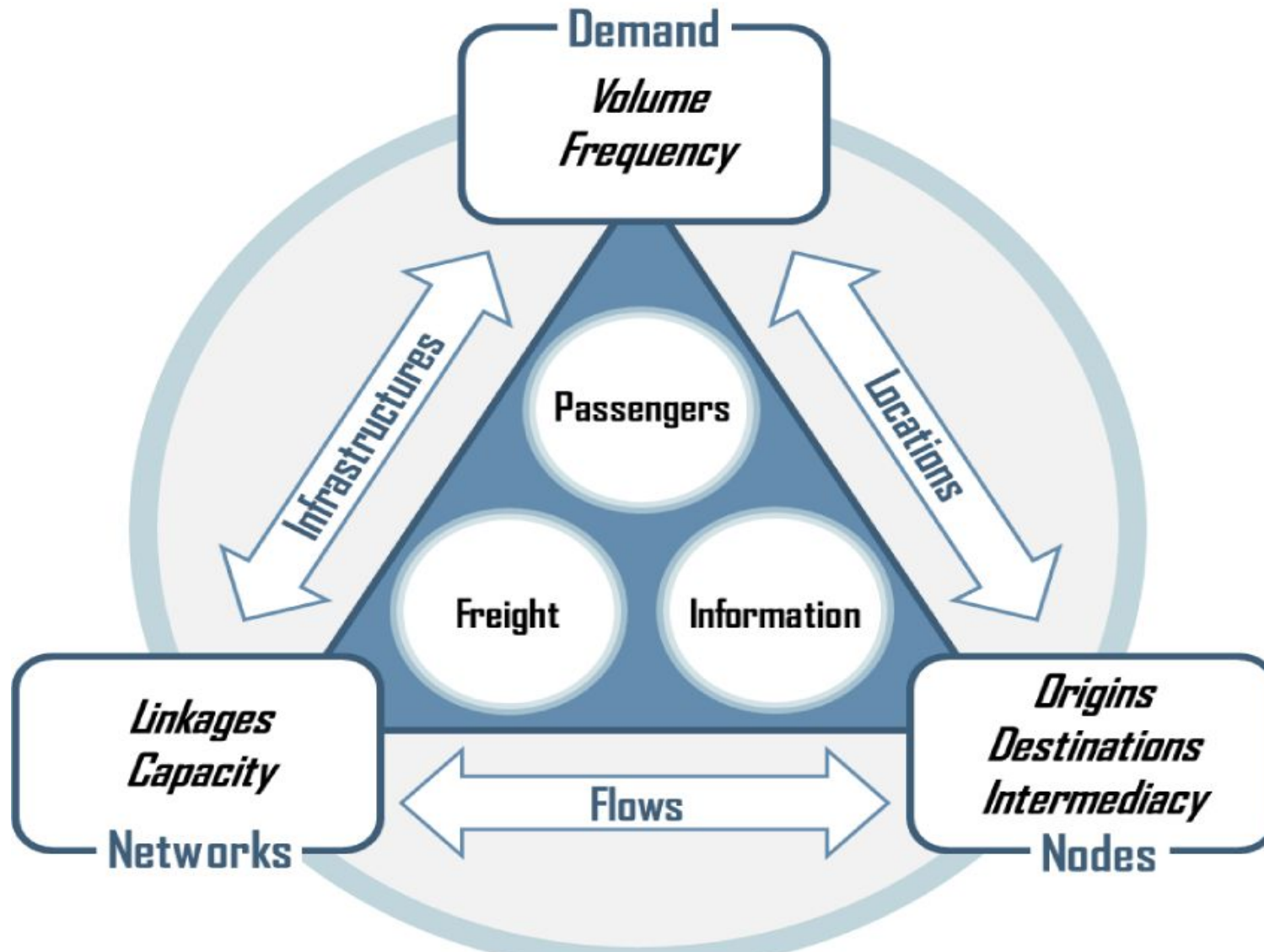
When **transportability** is high, activities are less constrained by distance.

Globalization supported the development of complex air and maritime transportation networks, many of which supporting global supply chains and trade relations across long distances.

“New transport geography” is based on the premise:

*transportation is a system supporting complex relationships between its core components, which are **nodes, networks and demand.***

Dimensions of Transport Geography



Transportation nodes

Transport geography must consider its places of convergence and transshipment.

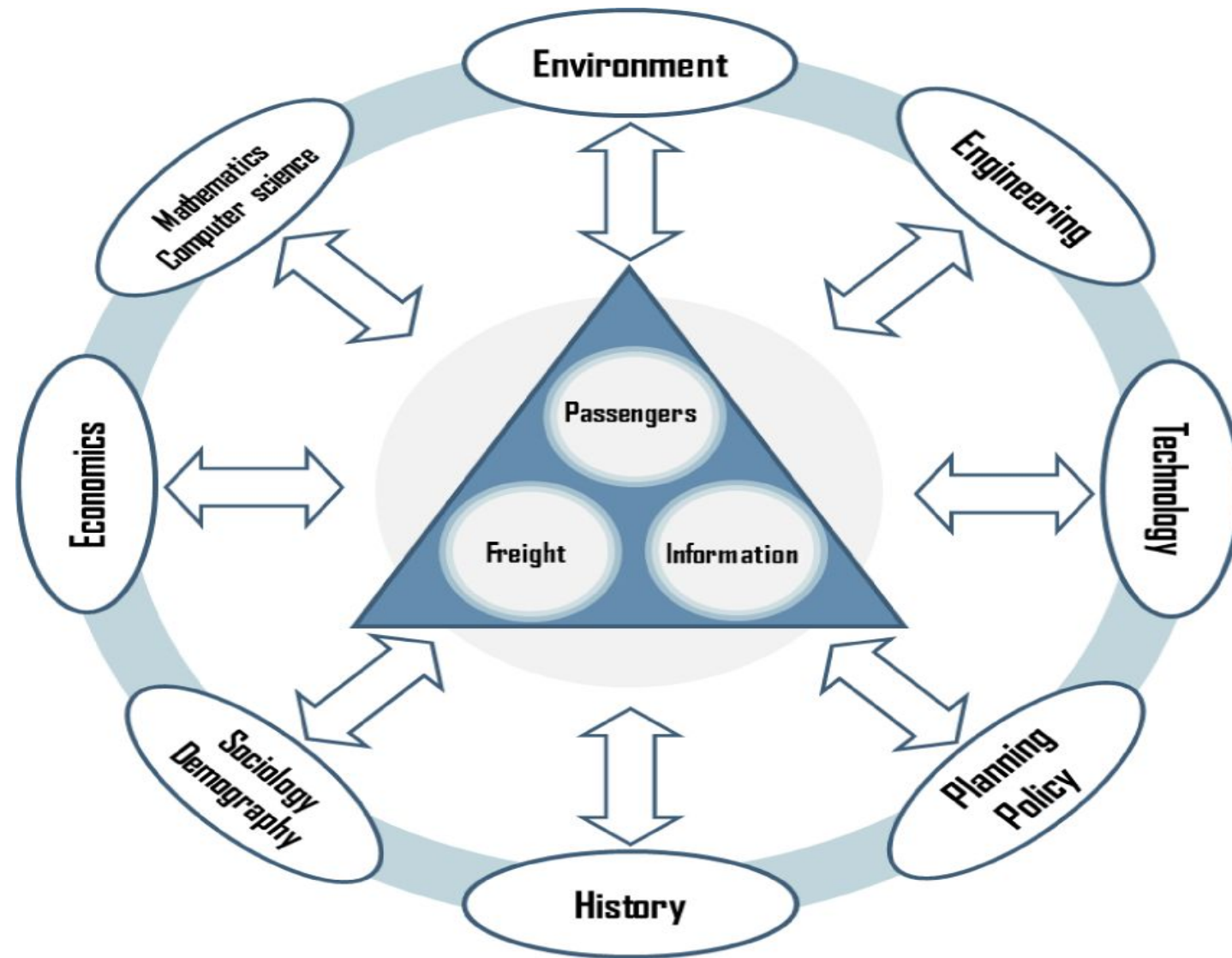
Transportation networks

Transport geography must include in its investigation the structures (routes and infrastructures) supporting and shaping movements.

Transportation demand

Transport geography must evaluate the factors affecting its derived demand function.

Dimensions of Transport Geography



Multidisciplinary

