Watch first

Mass Transit Documentary

Unit 5 Concept of Transport and Spatial Management

Topic

- Public transport (mass transit)
- Definition of spatial management
- Transportation and spatial structure
- Spatial management in tourism

Objectives

Students should be able to:

- Describe what public transport or mass transit is.
- Explain importance of public transport for urban living in different aspects.
- Indicate the major components of the spatiality imprint of urban transportation.
- Describe how public transportation system enhances accessibility and mobility of residents and visitors living in urban area.
- Analyze how accessibility and mobility induced by transportation affects economic at accessible locations, as well as changes of land forms and land uses.
- Discuss some problems or limitation of urban transportation and people living in or traveling to.
- Discuss inequalities induced from transportation development.


MRT


HORSE
TAXI
TAXI


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PUBLIC TRANSPORT (MASS TRANSIT)

What is public transport?

Shared passenger transport service which is available for use by the general public

Most public transport runs to a scheduled timetable with the most frequent services.

The operation management of public transport includes the management of:

- Infrastructure
- Interchanges
- Timetables
- Financing (fare and ticketing, revenue, profit and subsidies)
- Safety and security
- Impacts (environment, land use social, economic)
- Regulations (food and drink, smoking, noise, banned items, other regulations, sleeping).

THE SPATIALITY OF URBAN PUBLIC TRANSPORTATION

What is spatiality?

Involving a nature of space

The effect that space has on actions, interactions, entities, and concepts.

Physical spatiality can also be symbolic, as human also uses spaces they are in or presence to symbolize their identities. It is used to show social power through occupying of spaces and power expansion

Spatiality in transportation → **site**

→ **situation**

The development of a location reflects the cumulative relationships between transport infrastructure, economic activities and the built- environment.

Let's think what may be the supporting factors to decide to build a public transport in particular areas in urban zone/ city.

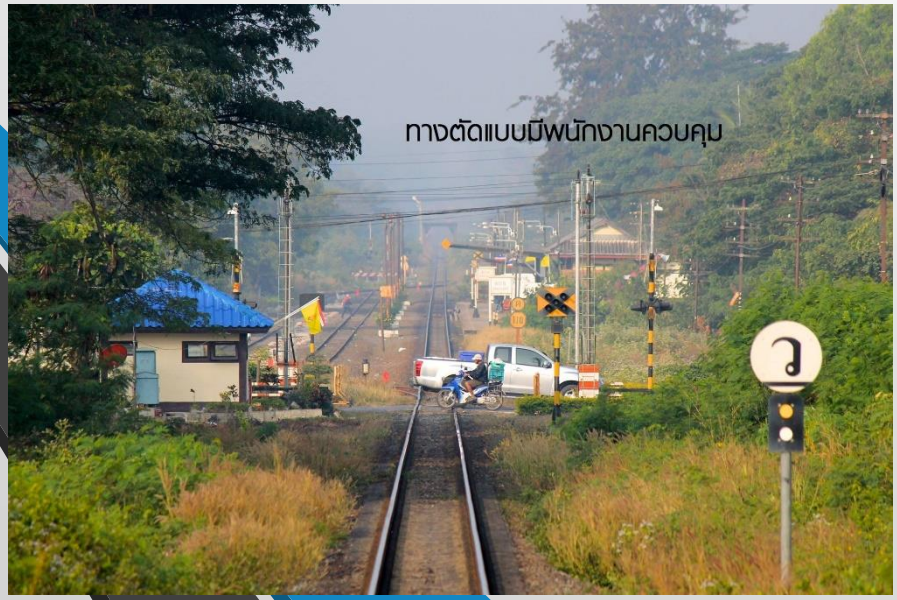
Let's think what may be the constraints or limitations not to build public transport in particular areas in urban zone/ city.

Physical attributes:

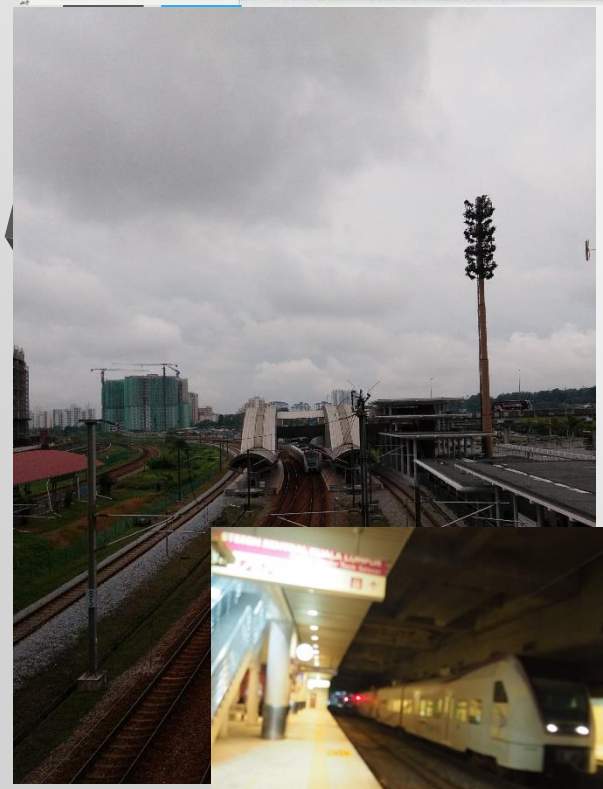
some natural conditions have very difficult constraint, especially for land transportation. It is therefore not surprising to find that most networks still are those along the easiest (least cost) paths, such as valleys and plains (rather than mountains and islands).

***Historical considerations*:**

Old patterns of transportation infrastructure have influence on nowadays development of transport infrastructure. In many areas, new transportation modes and carrying units cannot replace the old one, due to the fact that changing costs too high cost.




BALHAM, HIGH ROAD.



Using the case of Bangkok, even though it is called a metropolis, it is still facing with a limitation of spaces, that affect its less capability to expand the number of roads for very high traffic today (18 million commutes/ ridership per day).

Only 10% of the whole space in Bangkok is for road transport, comparing to Tokyo having 23% and New York 38%. This affects Bangkok become a metropolis that has a lower standard of being a metropolis with convenient travel.

Bangkok

NATIONAL GEOGRAPHIC

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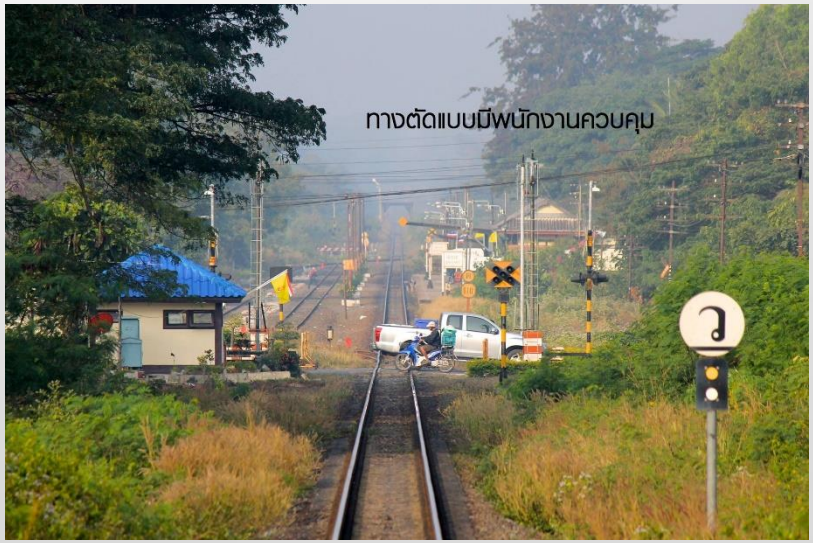
Photograph by Jodi Cobb


Tokyo

New Yor

Most travelers use private car and many others also have a high level of need for car ownership, *whereas mass public transport (i.e. bus) is still operated with car drive lanes*, and *mass transit with rail system occupies only 3% of all transport modes in Bangkok* due to the fact that the network is not completed yet and it lacks of planning to integrate with other transport modes




ยูนิค
UNIQUE
5


SU JOINT VENTURE

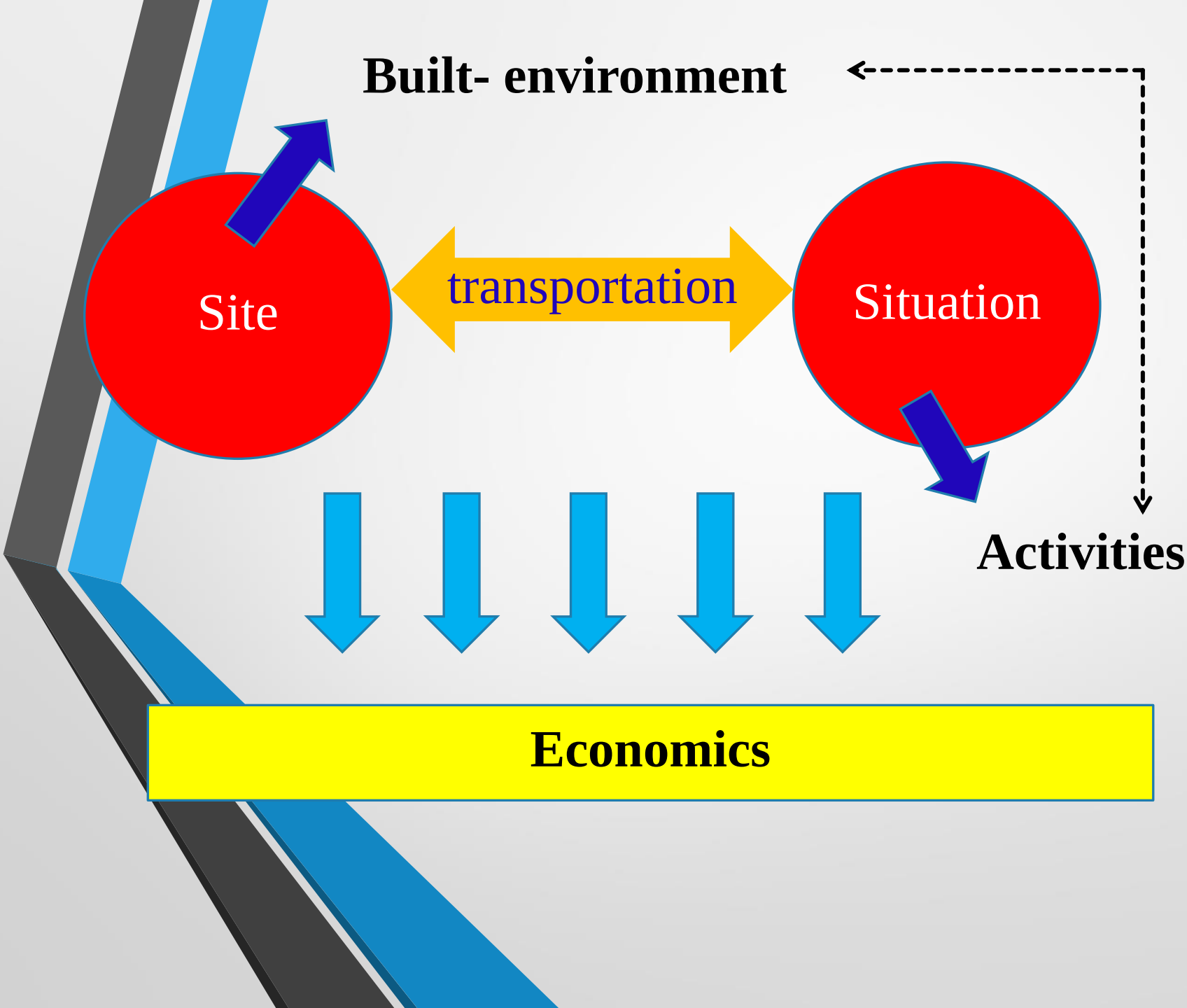
How is spatiality concept related with urban public transportation?

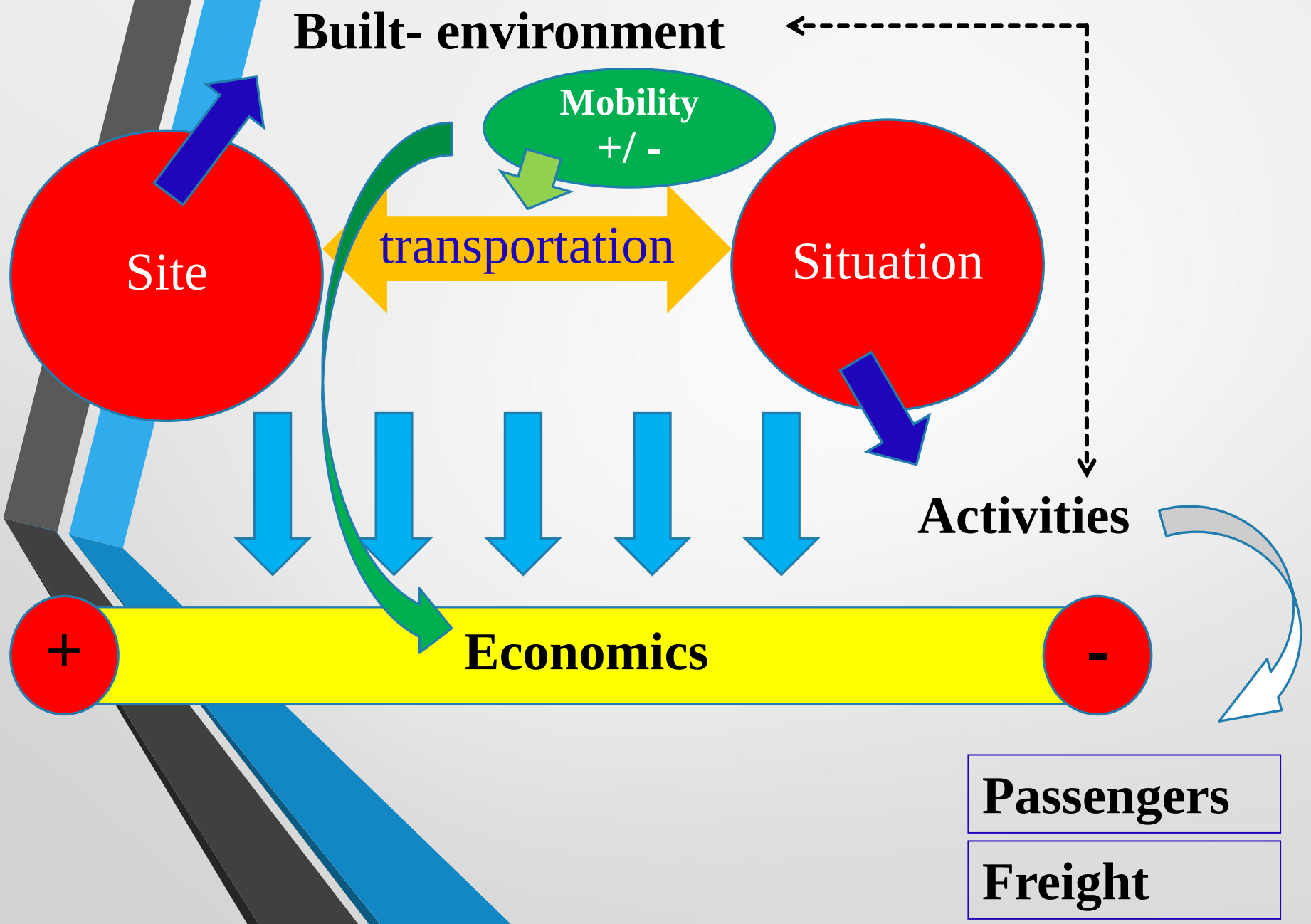
Good public transport
Effective / productive land use
Higher spread of economics impact

VS

Bad public transport
Ineffective / not productive land use
Less spread of economics impact

Good public transport will allow the creation of centers around the transport hubs, serving passengers' daily commercial needs and public services.


Built- environment
Site
transportation
Situation
Activities
Economics


Built- environment
Mobility
+/ -
Site
transportation
Situation
Activities
+
Economics
-
Passengers
Freight

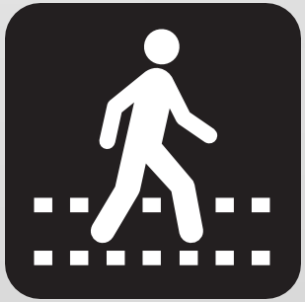
The spatiality of urban transportation

- The amount of urban land allocated to transportation is often correlated with the level of mobility.
- During the pre- automobile era, about 10% of the urban land was for used for pedestrians.
- As the mobility of people and freight increased, a growing share of urban areas was allocated to transport and the infrastructure supporting it. There are more modes, more carrying units, while the land may not increase, but segmented……

Different cities or even different parts of a city are varied in terms of spatiality imprint of transportation. The major components of the spatiality imprint of urban transportation are:

Pedestrian areas: refer to the amount of space devoted to walking. This space is often shared with roads as sidewalks may use between 10% and 20% of a road's right of way. In central areas, pedestrian areas tend to use a greater share of the right of way and in some instances whole areas are reserved for pedestrians.

However, in the context where motorized or automobile era, most pedestrian areas are for servicing people's access to transport modes such as parked automobiles.



3Q0863 [RM] © www.visualphotos.com

Roads and parking areas: refer to the amount of space devoted to road transportation.

This type of area has 2 states of activity: moving or parked.

In a motorized city (high automobile travel dependency city), on average 30% of the surface is devoted to roads while another 20% in required for off- street parking

Off- street parking

On- street parking

Cycling areas: cycling simply shares access to pedestrian and road space.

However, many attempts have been made to create spaces specifically for bicycles in urban areas, with reserved lanes and parking facilities.

The Netherlands has been particularly proactive over this issue making biking paths part of the urban transport system: 27% of the total amount of commuting is by cycling.

“Velib” – Velo Libre

Bicycle pool, Paris, France

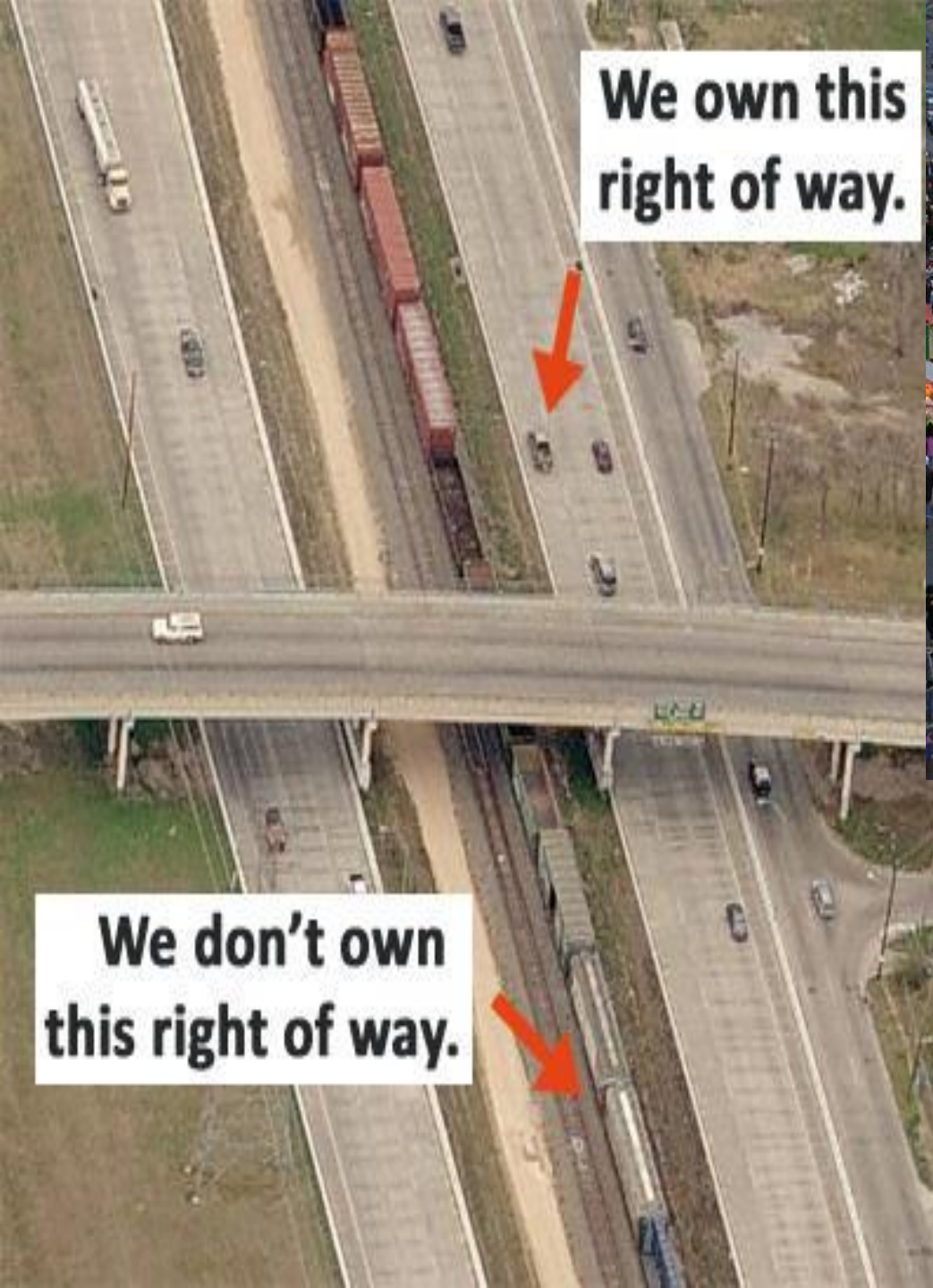
The pooling of vehicles for short- term rent is an option that is increasingly being considered and applied. This photo shows the “Velib” (Velo Libre--*freedom or liberty of wheel*) initiative in Paris, France, where bicycles are offered for rental for less than 24 hours, and ideally for less than 2 hours. The system is composed of 1,450 bicycle rental stations that have an average separation of 300 meters with a pool of 20,000 bicycles. The pooling system turned out to be very popular but also had some problems, notably a high level of vandalism and the need to reposition bicycles every night because of commuting patterns.

Transit systems: many transit systems, such as buses and tramways, share road space with automobiles, which often reduce their respective efficiency.

Attempts to mitigate congestion have resulted in the creation of road lanes reserved for buses either on a permanent or temporary (during rush hour) basis.

Other transport systems such as subways and rail have their own infrastructures and, consequently, their own rights of way.

Thailand (esp. the case of Bangkok metropolitan) has been developing transit system connecting rail and road modes


We own this right of way.
We don't own this right of way.


© DYLAN PASSMORE


OFO

Whose right of way?

Transport terminals: refer to the amount of space devoted to terminal facilities such as ports, airports, transit stations rail yards* and distribution centers.

Globalization has increased the mobility of people and freight, both in relative and absolute terms, and consequently the amount of urban space required to support those activities. Many major terminals are located in the peripheral areas of cities, which are the only locations where sufficient amounts of land are available

(peripheral areas have more spaces for transport terminals that are usually large and thus require large areas – e.g. Suvannabhumi Airport, Morchit Bus Terminal)


E5
E6
ทางออกขึ้นเครื่อง
Gates
E1,E1A
ทางออกขึ้นเครื่อง
Gates
E2,E2A
ทางออกขึ้นเครื่อง
Gates
E3,5,7,9


ANGKOK BUS TERMINAL (CHATUCHAK)
TRANSPORT CO.,LTD.


HOME
BUYERS
GROUP
Home Update
สถานีกลางบางซื่อ
"สถานีกลางบางซื่อ"
ศูนย์รวมระบบรางใหญ่ที่สุดในอาเซียน

Rail yard

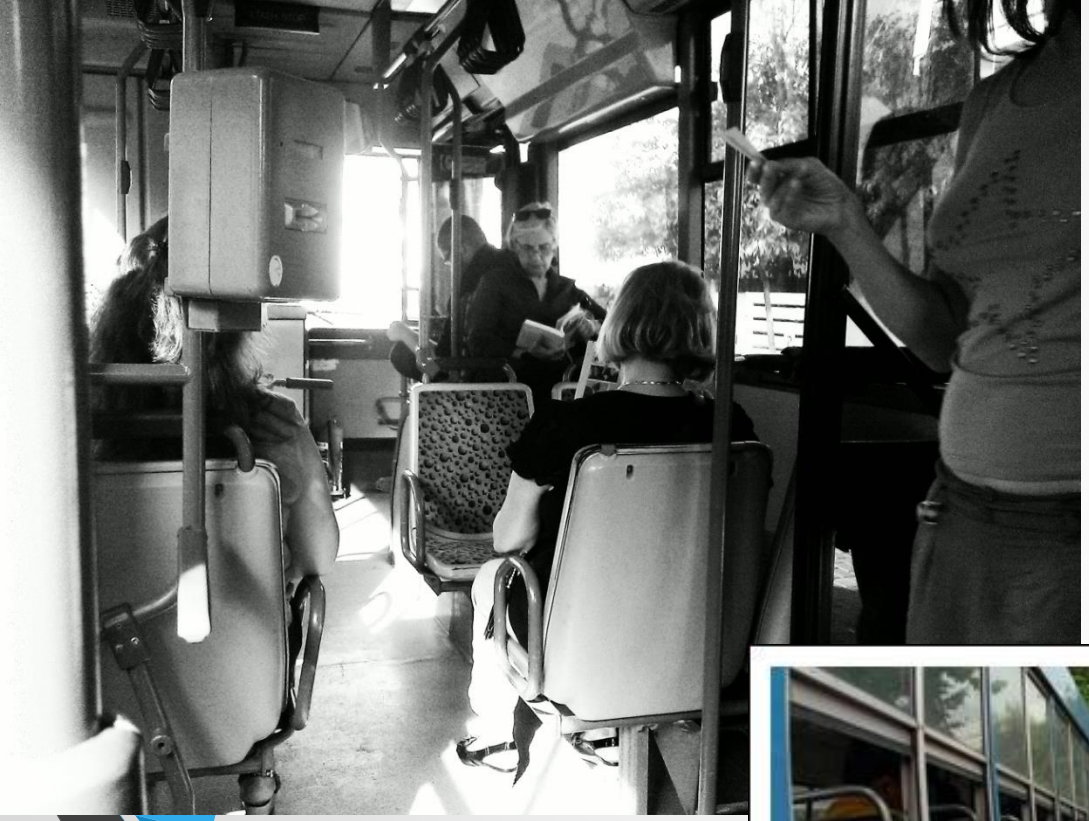
Each transport mode has “unique performance” and “(urban) space consumption characteristics”.

What does this mean?

What is space consumption?

- How people use spaces around different transport modes? /
- How they spend their time at spaces around different transport modes? / What they do?/ When?/ Why?
- How people make use of spaces? /
- How people act or behave when they are passing or staying at places around different transport modes?


SAJAN TEMPO SERVICE
M:9899688412
CNG




dhaniz


ouise in UK
photo by ouise
http://ouise.bloggang.com


2012
REPÚBLICA
ARGENTINA

MRT
3 mins
Aljunied MRT station

MRT
4 mins
Mountbatten MRT station

6 mins
Sport Hub

15 mins
East Coast Park

MRT
1 MRT Stop
Paya Lebar Business Hub

8 Mins
Parkway Parade Shopping Mall

5 mins
Nicoll Highway

7 mins
East Coast Parkway

8 mins
Singapore Flyer

10 mins
Gardens By the Bay

Within 1km
Kong Hwa School

MRT
4 MRT Stops
City Hall Interchange

MRT
5 MRT Stops
Central Business District


TransitScreen
TransitScreen
Graphic Design by Brennen Vasquez


STARBUCKS COFFEE
H
i
J


Blair jokes
the
on
superstock.com


EXIT


APEX
mar
StickmanBangkok.com

Why do we need to know people and passengers behaviour or what/ why/ how/ when they do those activities?

Some spaces need motionless while some spaces need mobile objects or stimulators

This is to stimulate a city life to make it more comfortable, mobile and walkable (walkability concept)

By support passengers' transport and logistics.

ECONOMICS OF PUBLIC TRANSPORT (MASS TRANSIT)

Public transport allows transport at an economy of scale that is not available through private transport.

Investment of public transport or mass transit is claimed to ultimately reduce the total transport cost for the public.

Time saved can also be significant, for both those who use public transport and those who still use private vehicle

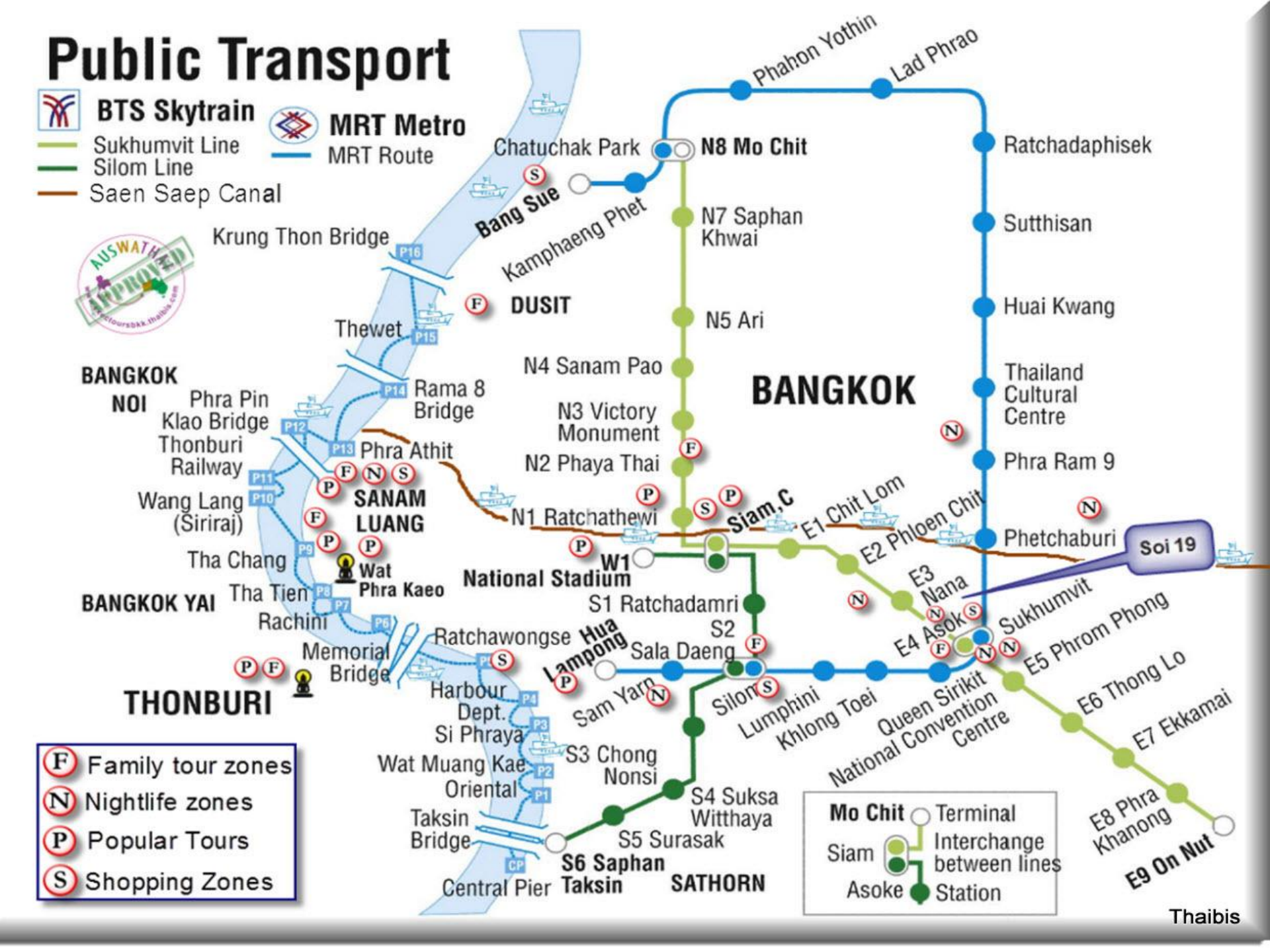
Transit-oriented development (TOD) can both improve the usefulness and efficiency of the public transit system as well as result in increased business for commercial developments.

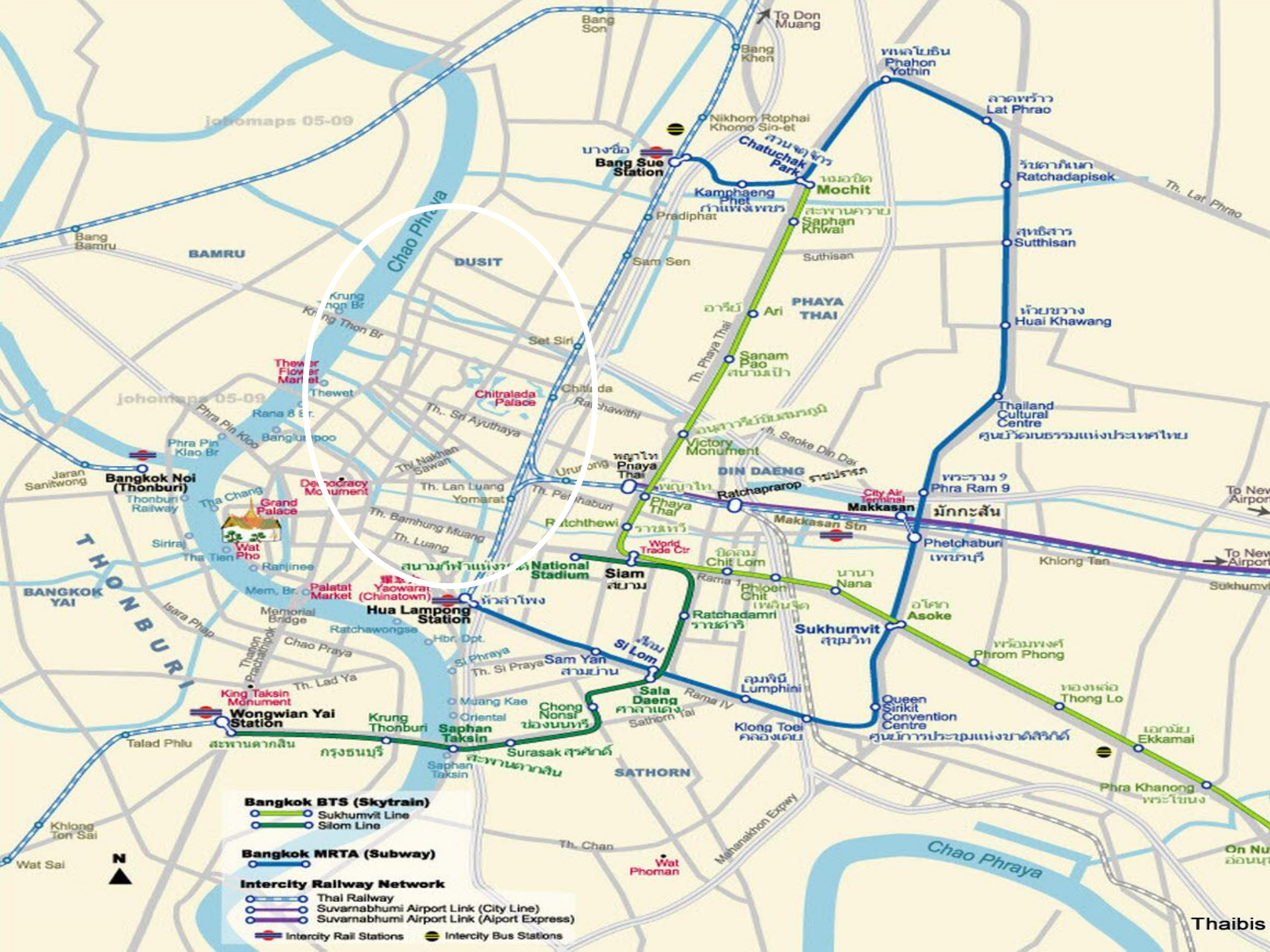
Because of the increased traffic and access to transit systems, putting in public transit frequently has a positive effect on real estate prices. Investment in public transport also has secondary positive effects on the local economy. Many businesses rely on access to a transit system, in particular in cities and countries where people's access to cars is less widespread (*less automobile dependent*).

With public transport, especially in cities, businesses that require large amounts of people going to a same place, such as concert or expo venues, sport stadium, airports, exhibition centres, etc., may not be able to accommodate a large number of cars, or businesses where people are not able to use a car (bars, hospitals, or industries in the tourism sector whose customers may not have their cars).

Attractions in Bangkok that are typically located in the inner and business districts whose space is not spacious enough to travel to by car (no or not enough car park areas), or some exhibition or convention centers such as Queen Sirikit National Convention Center- even though it can accommodate large number of people, it cannot accommodate much of cars.

SKYTRAIN, METRO & AIRPORT RAIL LINK


Public Transport
BTS Skytrain
Sukhumvit Line
Silom Line
Saen Saep Canal
MRT Metro
MRT Route
Phahon Yothin
Lad Phrao
Chatuchak Park
N8 Mo Chit
Ratchadaphisek
Bang Sue
Kamphaeng Phet
N7 Saphan Khwai
Sutthisan
Krung Thon Bridge
DUSIT
N5 Ari
Huai Kwang
Thewet
N4 Sanam Pao
Thailand Cultural Centre
BANGKOK NOI
Rama 8 Bridge
Phra Pin Klao Bridge
N3 Victory Monument
BANGKOK
Thonburi Railway
Phra Athit
N2 Phaya Thai
Phra Ram 9
Wang Lang (Siriraj)
SANAM LUANG
N1 Ratchathewi
Siam
E1 Chit Lom
E2 Phloen Chit
Phetchaburi
Soi 19
Tha Chang
Wat Phra Kaeo
W1
National Stadium
E3 Nana
Tha Tien
BANGKOK YAI
S1 Ratchadamri
E4 Asok
Sukhumvit
Rachini
S2
Ratchawongse
Hua Lampong
Sala Daeng
E5 Phrom Phong
Memorial Bridge
Harbour Dept.
Sam Yan
Silom
Lumphini
Khlong Toei
Queen Sirikit National Convention Centre
E6 Thong Lo
THONBURI
Si Phraya
S3 Chong Nonsi
E7 Ekkamai
Wat Muang Kae
Oriental
S4 Suksa Witthaya
Taksin Bridge
S5 Surasak
E8 Phra Khanong
S6 Saphan Taksin
SATHORN
Central Pier
E9 On Nut
F Family tour zones
N Nightlife zones
P Popular Tours
S Shopping Zones
Mo Chit
Terminal
Siam
Interchange between lines
Asoke
Station
Thaibis


Bang Son
To Don Muang
Bang Khen
Nikhom Rotphai Khomo Sio-et
Bang Sue Station
Chatuchak Park
Kamphaeng Phet
Pradiphat
Mochit
Saphan Khwai
Phahon Yothin
Lat Phrao
Ratchadapisek
Th. Lat Phrao
Sutthisan
Suthisan
Sam Sen
Bang Bamru
BAMRU
DUSIT
Chao Phraya
Krung Thon Br
Set Siri
Ari
PHAYA THAI
Th. Phaya Thai
Sanam Pao
Huai Khawang
Thewet Flower Market
Thewet
Chitralada Palace
Th. Si Ayuthaya
Victory Monument
Thailand Cultural Centre
Phra Pin Klao Br
Rama 8 Br.
Bangkhunpoo
Th. Saoke Din Dae
Jaran Sanitwong
Bangkok Noi (Thonburi)
Thonburi Railway
Tha Chang
Grand Palace
Democracy Monument
Th. Lan Luang
Yomarat
Th. Bamhung Muang
Th. Luang
Phaya Thai
DIN DAENG
Ratchaprarop
Phra Ram 9
City Air Terminal
Makkasan
Makkasan Stn
Ratchathewi
World Trade Ctr
Pheichaburi
Khlong Tan
To New Airport
Sirirat
Wat Pho
Ranjinee
THONBURI
BANGKOK YAI
Mem. Br.
Palatat Market
Yaowarat (Chinatown)
Hua Lampong Station
National Stadium
Siam
Chit Lom
Phloen Chit
Nana
Asoke
Sukhumvit
Sukhumvit
Memorial Bridge
Ratchawongse
Hbr. Dpt.
Chao Praya
Si Phraya
Th. Si Praya
Sam Yan
Si Lom
Ratchadamri
Phrom Phong
Th. Lad Ya
King Taksin Monument
Wongwian Yai Station
Talad Phlu
Krung Thonburi
Saphan Taksin
Muang Kae
Oriental
Chong Nonsi
Sala Daeng
Rama IV
Lumphini
Queen Sirikit Convention Centre
Thong Lo
Ekkamai
Klong Toei
Surasak
SATHORN
Phra Khanong
Khlong Ton Sai
Wat Sai
Th. Chan
Wat Phoman
Mahanakhon Expwy
Chao Phraya
Bangkok BTS (Skytrain)
Sukhumvit Line
Silom Line
Bangkok MRTA (Subway)
Intercity Railway Network
Thai Railway
Suvarnabhumi Airport Link (City Line)
Suvarnabhumi Airport Link (Aiport Express)
Intercity Rail Stations
Intercity Bus Stations
N
Thaibis

BIKE ROUTE : RATTANAKOSIN LINE

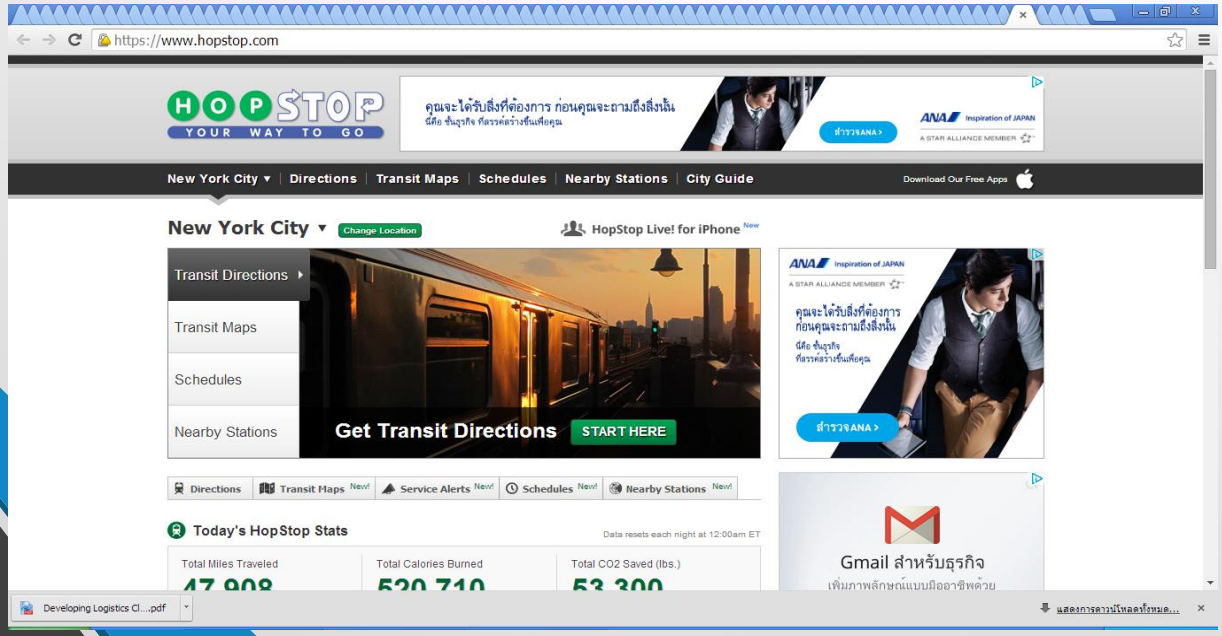
Wat Arun Ratchawararam
Ratchaworadit Pier
Chao Phraya River
Wat Dusitaram
Phra Racha Wang Derm Palace
Silapakorn University
Bangkok Tourism Division
Wat Kanlayanamit
Wichaiprasith Fortress
Grand Palace
The Temple of the Emerald Buddha
Thammasat University
National Museum
National Theater
UNICEF
Kiang Un Keng Shrine
The National Gallery
Wat Phra Chetuphon (Wat Pho)
The City Pillar Shrine
Sanam Luang (Royal Field)
Santa Cruz Church
Royal Thai Survey Department
Defence Ministry
Memorial of Expeditionary Force
Ban Phra Athit
Phrasumeru Fortress
Phraratchawang Police Station
Saranrom Park
The Supreme Court
Wat Ratchapradit
Flower Market
Chakkraphong Mosque
Interior Ministry
Chao Pho Seo Shrine
Khuru Sapha Printing House
Bang Lamphu Market
King Rama I Monument
Wat Sangwet
13 October 73 Memorial
Deva Stan
Wat Bowonnivet
The Giant Swing
Democracy Monument
Bangkok City Hall
Wat Ratchanatdaram
Lohaprasada
Mahakan Fortress
Golden Mountain

Symbolic For Getting Around Rattanakosin

- Bike Route
- Rattanakosin Bike Station
- Pier
- Tourist Information Center
- Temple

Travel with equality

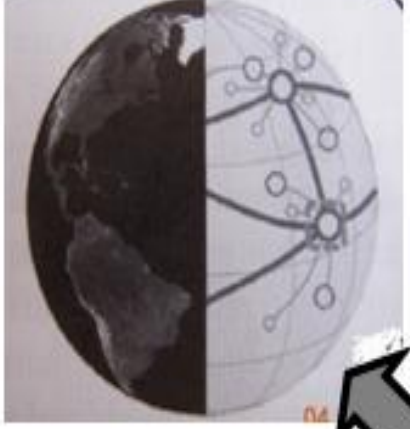
Transit systems also have an effect on derived businesses: commercial websites have been founded, such as Hopstop.com that gives directions through mass transit systems; in some cities, such as London, products themed on the local transport system are a popular tourist souvenir.



At a global level, transportation supports and shapes economic specialization and productivity through international trade.

The patterns of globalization have created a growth in spatial flows (trade) and increased interdependencies.

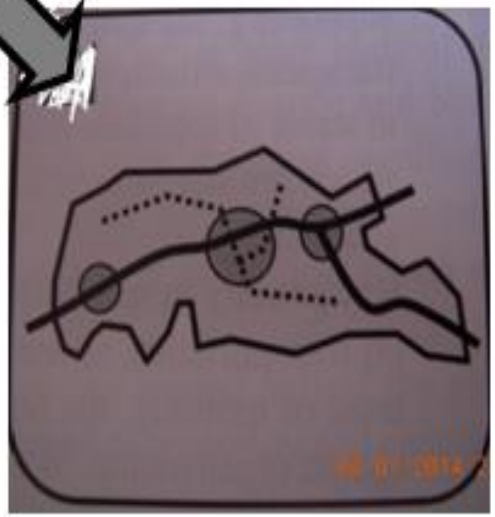
Telecommunications, maritime transport and air transport support the majority of global flows, because telecommunications, maritime transport and air transport have high scale of service.



Global
1) Gateways and hubs (airports and ports)
2) Air and maritime routes
3) Investment, trade and production

Regional
1) Metropolitan areas
2) Corridors (rail lines, highways, canals)
3) Urban system and hinterland

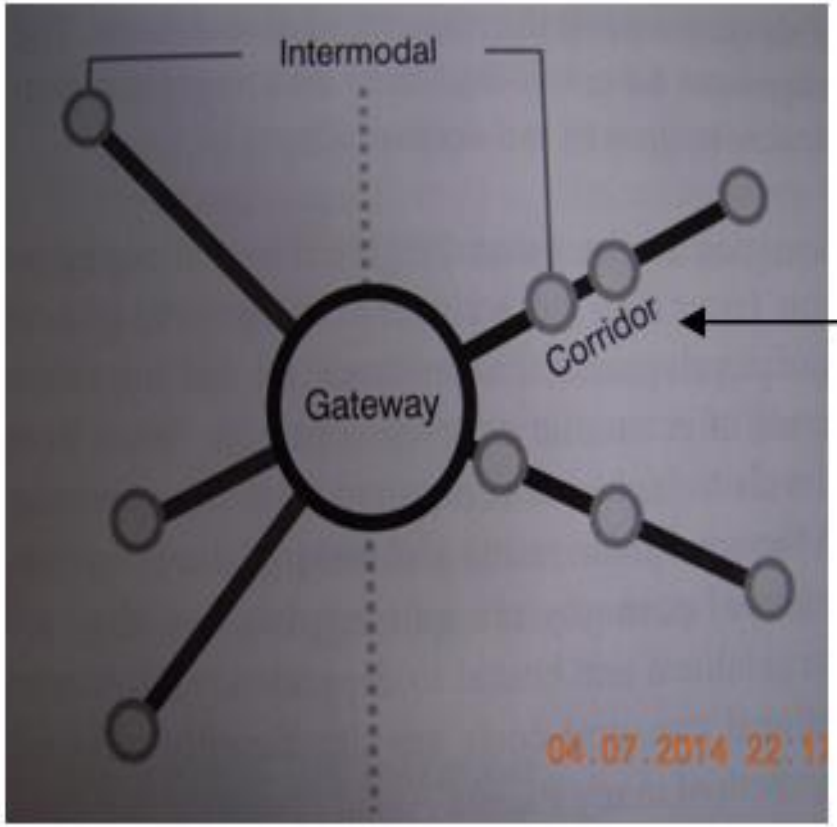
1) Nodes
2) Links
3) Relations



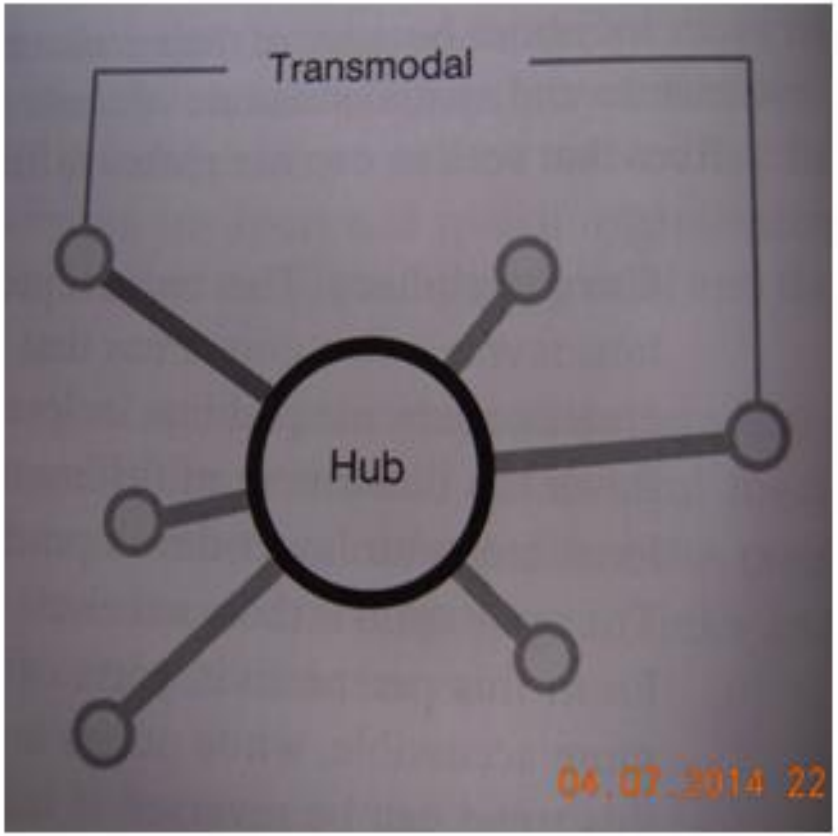
Local
1) Employment and commercial activities
2) Roads and transit systems
3) Commuting and distribution

Scales of spatial organization for transportation

Performing an intermodal function (between modes)



Performing an transmodal function (within a mode)



Transport corridors are commonly linking gateways to the hinterland.

Regional spatial organization

The spatial structure of most regions can be subdivided into three basic components:

A set of locations of specialized industries such as manufacturing and mining (in some other countries), which tend to group into agglomerations according to location factors such as a raw materials, labor, markets, etc. They are often export- oriented industries from which a region derives the bulk of its basic growth.

A set of service industry locations, including administration, finance, retail, wholesale and other similar services (including tourism), which tend to agglomerate in a system of central places (cities) providing optimal accessibility to labor or potential customers.

A pattern of transport nodes and links, such as roads, railways, ports and airports, which services major centers of economic activity.

From the above explanation, you can make an understanding that these components define the spatial order of a region that involves flows of people, freight and information.

In conclusion, there is a relationship between transport, urban systems and regional development, the core/ periphery stages of development and the network expansion.

ASEAN Case

There are clusters of countries in accordance with business specialization resulted from level of accessibility due to transportation information and technology.

A set of industrial countries include for example Indonesia, Vietnam, Laos, Cambodia and Myanmar,

A set of service countries include for example Singapore, Malaysia and Thailand.

Even in the local level,

Clustering of districts also relate with transportation information and technology that provide accessibility and flows to each districts in each cluster

For example entertainment district, attraction district, employment district (i.e. industrial district, i.e. factories), central business district or CBD (service district, i.e. banking, governmental offices), residential district-- these clusters can be more obviously seen in western continent.

https://www.youtube.com/watch?v=qy4VwN8l3cw

Individual Paper (10 marks)

Study the Concept “Transit-Oriented Development” (TOD) and summarize with example cases.

Submission: Next Friday for Discussion