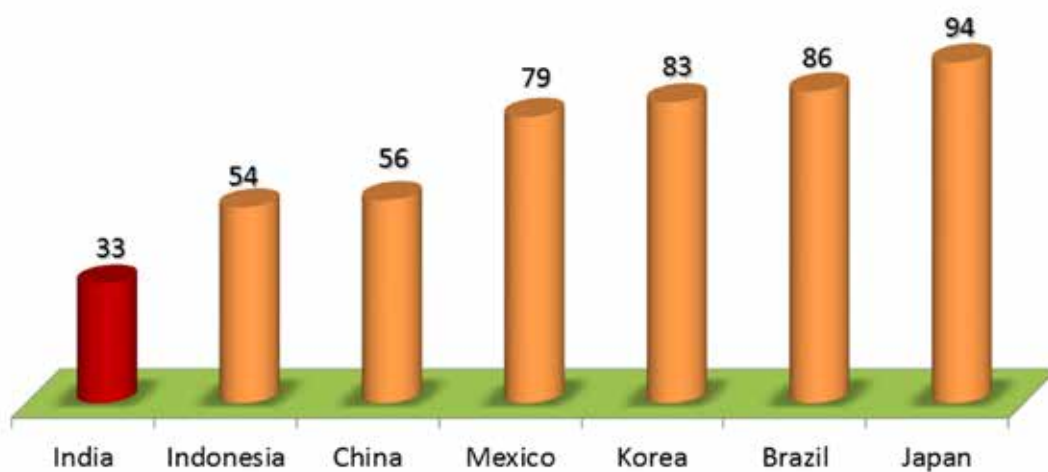




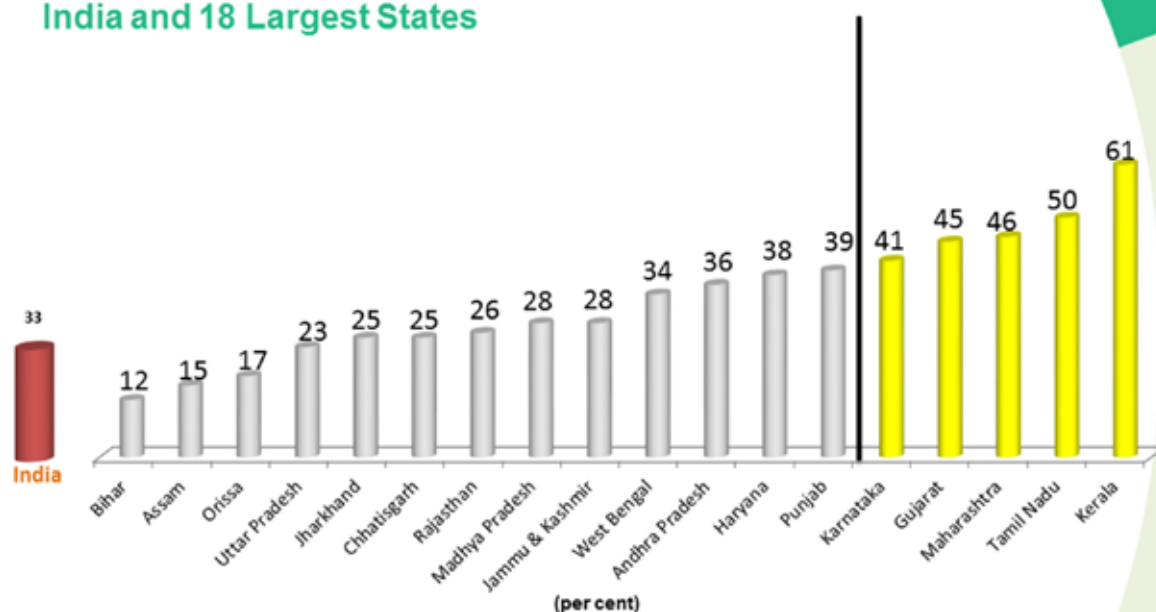
Presentation on Challenges and Opportunities of Urbanisation in India

Urban Share of Total Population in 2015 India and Some Selected Countries



Source: World Urbanisation Prospects, Population division, United Nations

Urban Share of Total Population in 2015 India and 18 Largest States



Only 5 states have urban population greater than 40%

3

Per capita income and urbanisation levels: States 2011



Urbanisation level increases with per capita income level across the states of India

Source: Estimates based on Census of India data and CSO.

4

Urbanisation in India has a long way to go

- India's urban population to increase from 420 million in 2015 to 600 million by 2031
- Metropolitan cities (**with population over 1 million**) to increase from **57** in 2015 to **87** by 2031
- There will be 255 million Indians living in metropolitan cities and 165 million in other cities and towns by 2031
- Metropolitan and Regional Development is crucial for better connectivity in a rapidly growing economy

Metropolitan cities are cities with population over 1 million or 10 lakh (Class IA and Class IB cities); Other cities are cities with population between 1 lakh and 10 lakh

Urban agglomeration is a continuous urban spread of a town and its adjoining outgrowths, or two or more physically contiguous towns with or without outgrowths of such towns. An urban agglomeration must have at least one statutory town and its total population should not be less than 20,000 (as per Census 2001).

5

Some of India's Urbanisation is not even recognized...

Much smaller increase in Towns with Local Governments compared to "Towns" as declared by the Census of India.

Census Towns

	2001	2011
All India	1362	3894
Tamil Nadu	111	374
Maharashtra	127	279
Gujarat	74	153
Karnataka	44	127
Punjab	18	74
Haryana	22	25
Andhra Pradesh	93	228
West Bengal	252	729
Madhya Pradesh	55	112
Rajasthan	34	113
Uttar Pradesh	66	267
Bihar	5	60

Statutory Towns

	2001	2011
All India	3799	4041
Tamil Nadu	721	723
Maharashtra	251	255
Gujarat	168	195
Karnataka	226	220
Punjab	139	143
Haryana	84	129
Andhra Pradesh	117	125
West Bengal	123	80
Madhya Pradesh	339	364
Rajasthan	182	185
Uttar Pradesh	638	648
Bihar	125	139

Census towns have at least 75% of male working population engaged in non-agricultural activities, have a population of at least 5,000 and have a population density of at least 400 per sq. km

Statutory towns have local bodies like municipal corporations, municipal committees, etc. irrespective of their demographic characteristics

Towns have to be notified by the state government to qualify for a statutory local government.

6

Implications of Structural Transformation for Urban India



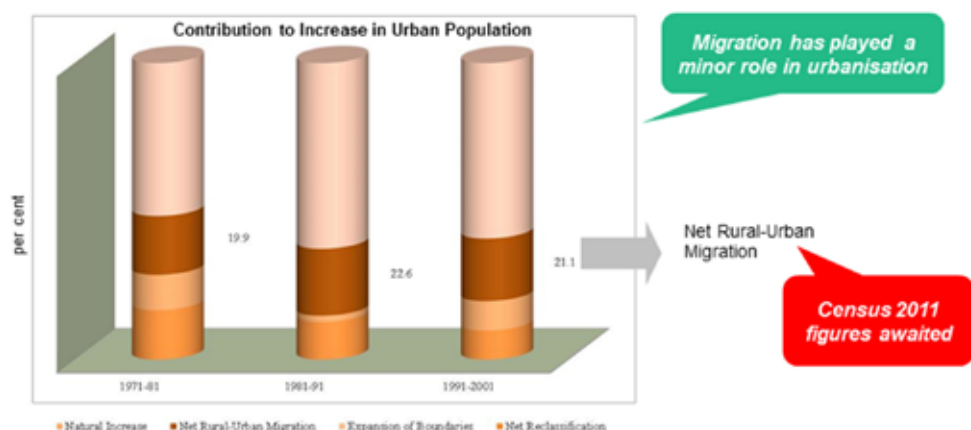
Source: CSO, Eleventh Five Year Plan and the Mid-Term Appraisal Document of the Eleventh Five Year Plan

Rapid Growth has meant that urban share of GDP is rising rapidly as Indian economy goes through a major structural transformation, and this is projected to continue.

Faster growth of GDP will come increasingly from industry and services which will be located in urban space to garner economies of agglomeration.

7

Role of rural-urban migration



- Pressure of rural-urban migration will increase further with
 - increasing role of industry and services sector in growth
 - with more labour absorbing growth resulting from increasing integration with the world economy
- Many cities will experience peripheral expansion, with smaller municipalities and large villages surrounding the core city becoming part of the metropolitan area.

8

The challenge of faster and more inclusive growth

- To sustain growth rates of GDP of 8 per cent per annum, or per capita income increases of about 6.5 per cent per annum
- Industry and Services growth must accelerate.
- Growth of industry and services must become more labour intensive
 - **modernise labour laws** (to provide greater flexibility in hiring and firing labour)
 - provide **social protection** to those who do not find productive employment in the organised sector.

9

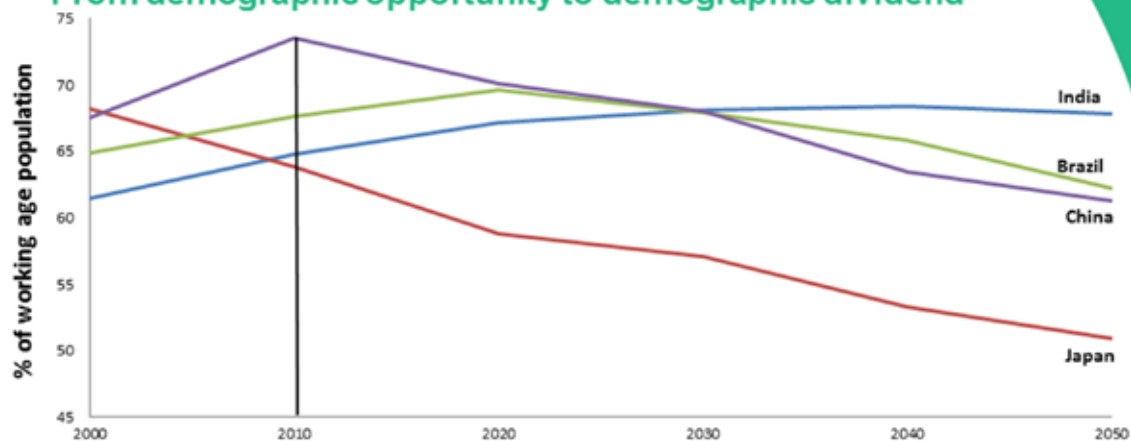
Urbanisation is not all about urban development

- Fortunes of the rural sector are critically linked to the manner in which urbanisation unfolds: examples
 - Income per head in agriculture can increase only if people move out of agriculture into higher productivity jobs in industry and services.
 - Increase in employment intensity of non-agricultural growth is crucial.
 - Modern supply chains offer opportunities for high value agriculture.
 - The quantity of water available for agriculture is significantly affected by water use in urban areas.

“India cannot get its urban strategy right without bringing about a fundamental shift in the mindset which separates rural from the urban” (HPEC 2011).

10

From demographic opportunity to demographic dividend



- Decline in China's working age population from 2010 onwards
- Decline in Brazil's working age population from 2020 onwards
- Increase in India's working age population will continue till 2040 and begin to decline mildly after that
- Demographic dividend can be reaped if
 - Youth is empowered with education, skills and innovative capacity
 - Employment opportunities expand

Source: Population Estimates & Projections, World Bank

11

The ground realities of Urban India

Indian cities and towns are visibly deficient in the coverage and quality of public services which are much below norms set by MoUD.

The state of service delivery is also far short of what is needed to realise their economic potential.

Investments to bridge urban infrastructure deficits are necessary to improve service delivery but not sufficient.

Financing of these investments is crucially dependent on the reforms of institutions and the capacity of those who run the institutions to plan and manage the system for better service delivery

12

Urban Infrastructure Investment requirement: 2012- 2031

A High Powered Expert Committee on Urban Infrastructure and Services set up by the Government of India in 2008, submitted its Report in March 2011 with the estimate: **\$827 billion** as the total cumulative investment over the period 2012-2031.

Assuming:

- All the unserved and underserved population between 2012 and 2031 will be covered.
- All the additional population will be covered.
- Service standards will match the norms set by the Ministry of Urban Development.
- This estimate is based on 2009-10 prices.
- This estimate does not include primary education, primary health, electricity distribution and land cost.
- GDP is assumed to increase at 8 per cent per annum for the 20-year period

13

Service Standards

• Water Supply	: 100 per cent piped water, 24x7 flow, and 135 lpcd consumption per capita	
• Sewerage	: Underground sewerage with 100 per cent collection and treatment of waste water	
• Solid Waste	: 100 per cent collection, transportation and treatment	
• Urban Roads	: Area under roads	11 per cent area for cities
		7 per cent for towns
	: Road density (km per sq. km.)	12.25 km per sq. km. for cities
		7 km per sq. km. for towns
• Storm Water Drains	: Network covering 100 per cent road length on both sides of the road	
• Urban Transport	: Rail-based and road-based Mass Rapid Transit System for cities with population 1 mn and above, city bus service for smaller cities and towns	
• Street Lighting	: Illuminance: 35 Lux for all cities and towns; 40 m spacing for major roads, 45 m for collector roads, and 50 m for access road spaces	
• Traffic Support Infrastructure	: Details by city size in the Committee's Report	

14

Share of Major Sectors in Total Investment Requirement of Urban Infrastructure

Urban roads (backlog very large) 50 per cent

Transport and traffic support infrastructure 16 per cent

Water, sewerage, solid waste management, storm water drains, street lighting 24 per cent

Other sectors 9 per cent

Sectors	\$ billion
Urban roads	364.9
Urban transport	94.9
Traffic infrastructure	21.1
Water supply	67.5
Sewerage	50.6
Storm water drains	42.2
Solid waste management	10.5
Street lighting	4.2
Other sectors	65.4
Total	721.3

	\$ billion
Slum Redevelopment	86
Capacity Building	21

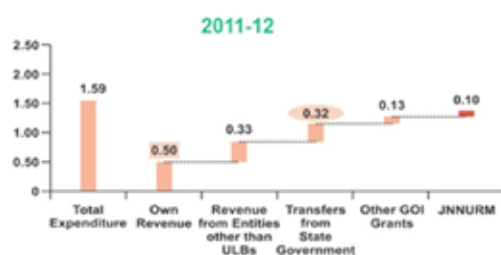
15% per annum increase from 2012 to 2016

12% per annum increase from 2017 to 2021

8 % per annum increase from 2022 to 2031

15

Projections for Financing (per cent of GDP)



Large sums, but financeable if

- Government of India scales up urban development funding to 0.25 per cent of GDP per year for 20 years
- State governments enter into Constitutionally mandated revenue-sharing arrangement with ULBs
- State governments provide enabling environment for ULBs to reform
- ULBs aggressively push reforms to increase own revenues, i.e.,
Access to borrowing and PPP is made possible by working on a Revenue Model which makes ULBs credit-worthy and market-worthy

16

Recommendations on financing

1. Tax reforms

- Introduce a 'Local Bodies Finance List' in the Constitution
- Empower ULBs with 'exclusive' taxes
- Constitutionally ensure sharing by the state governments of a pre-specified percentage of their revenues from all taxes on goods and services with ULBs
- Provide for formula-based transfers and grants-in-aid to ULBs from the divisible pool
- Abolish octroi and entry taxes in all states
- Reform property tax so as to levy tax on constructed building under an Area Based System and levy of vacant land tax on the basis of ready-reckoner capital value

2. Unlocking land value

- Tapping land-based financing sources including conversion charges, betterment charges, impact fees, and development charges
- Pricing of Floor Space Index (FSI) above a certain limit, within overall planning guidelines
- Preparing city-wide inventory of land assets
- Putting in place a transparent and accountable mechanism for monetisation of public land with due attention to the needs of the poor and the marginalised

17

3. Reforms to strengthen non-tax revenues

- Municipal Service Regulator should be assigned the responsibility of revising user charges regularly. Even when different segments of the population are charged differently, the cross-subsidisation should be such that the overall O&M cost is recovered and a minimal surplus generated. Automatic indexation will ensure smooth increase over time without the challenge of having to defend cumulative adjustment every few years.
- User charges to be so structured as to meet O&M cost, debt servicing, and depreciation towards the cost of the project. In addition, they must also generate some surplus to enable building the equity base of ULBs, supported, where appropriate, with viability gap funding (VGF)
- Levy water and sewerage charges separately rather than build into the property tax
- Introduce parking fee, improve collection of trade licensing fee

18

Governance is Crucial

- Financing is crucially dependent on the reform of institutions and the capacity of those who run the institutions for service delivery and revenue generation.
- Municipal entities need to be empowered to raise 'own' sources of revenue, predictable transfers from state governments, and other transfers from the GoI and state governments, to help them discharge the larger responsibilities assigned to them by the 74th Constitutional Amendment.
- The ULBs themselves need to carry out reforms to strengthen their finances, and improve service delivery
- Building and developing a Municipal cadre is very important

So is Capacity

- The JNNURM has created dynamism in the Indian urban sector which has long suffered neglect. But progress in implementing reforms under the JNNURM has been slow. The Mission has generally exposed the lack of capacity to prepare and implement projects in urban infrastructure within an integrated framework of a City Development Plan.

19

Innovation makes a big difference

- Examples were presented of some cities of India, which have successfully implemented significant innovations on the ground to address their challenges and bring about perceptible improvements in the standards of living they offer their residents. As Pune, Pimri-Chinchwad, Ahmedabad Surat, Hyderabad, Bangalore, Nagpur, Kalyan-Dombivli, Malkapur, Alandur, Pammal and some other cities innovate to transform service delivery in some sectors, they set example for others.

20



Session 3 Comments



Dr. Timothy J. Dalton | Tim_Dalton@US.IBM.COM | +1 (914) 945 2480
Nanoscience & Technology Program Manager, Master Inventor, Principal RSM,
Member-IBM Academy of Technology. IBM T.J. Watson Research Center, Yorktown Heights, NY



To meet and exceed citizen expectations, leaders must innovate

"The 19th century was a century of empires, the 20th century was a century of nation states. The 21st century will be a century of cities."

– Wellington E. Webb, former Mayor of Denver, Colorado
US Conference of Mayors, 2000

improve efficiency, collaboration

Goal: A prosperous and sustainable future for urban areas by efficient service delivery to address citizen and business needs

Build resilient, sustainable

Dynamics: Cities are living entities and are very dynamic and require planning and operation. Situations change rapidly. Real time awareness is crucial for efficient operation and management. A city is a "System of Systems" that must operate synergistically for optimum performance and efficiency.

outcomes and reduced costs in social

Departments

Solution: Delivery of insight to city managers through DATA enabled by confluence of technologies: Cloud, Analytics, Mobile, Social – All with Security

To meet and exceed citizen expectations, leaders must innovate across three key service areas

Government
and Agency
Administration

City Planning
and Operations

Planning and management

Lead with vision and deep insight to improve efficiency, collaboration

INSIGHT

- Real time awareness and sharing of analysis across agencies to

Urban Data from sensors, surveillance cameras, mobile phones, smart phone applications, social media, city agencies, weather systems, databases, etc. will enable solutions and enhanced service delivery that address the ever increasing needs of citizens and businesses to allow for a prosperous and sustainable future for urban areas

Smarter
Care

Water

Education

Transportation

Communication

People

Enable individuals' health and productivity to deliver better outcomes and reduced costs in social programs, health and education

COLLABORATION

- Agencies
- Departments
- Citizens
- Businesses

3

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To meet and exceed citizen expectations, leaders must innovate across three key service areas, though data!



Planning and management

Lead with vision and deep insight to improve efficiency, collaboration and response for government, public safety and city operations

Infrastructure

Build resilient, sustainable infrastructure to increase efficiency, sustainability and proactively plan for energy, water and transportation

People

Enable individuals' health and productivity to deliver better outcomes and reduced costs in social programs, health and education

INSIGHT

- Real time awareness and sharing of analysis across agencies to delivery services

EFFICIENCY

- Reduced cost
- Better response time
- Scenario modeling

COLLABORATION

- Agencies
- Departments
- Citizens
- Businesses

4

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To meet and exceed citizen expectations, leaders must innovate across three key service areas

Government and Agency

City Planning and Operations

Planning and management

- **INSIGHT**
 - Real time awareness and sharing of analysis

Delivery of **insight** (planning and operational), **efficiency** of operation, and **collaboration** across the ecosystem through **URBAN DATA** (from **sensors, surveillance cameras, mobile phones, smart phone applications, social media, city agencies, weather systems, databases, etc**) enabled by confluence of technologies: Cloud, Analytics, Mobile, Social – all with Security – will enable the smart cities of the 21st century.

Social for Care

Health

Water

Education

Communication

Transportation

People

Enable individuals' health and productivity to deliver better outcomes and reduced costs in social programs, health and education

- **COLLABORATION**
 - Agencies
 - Departments
 - Citizens
 - Businesses

どうもありがとうございます

Thank You!



Dr. Timothy J. Dalton | Tim_Dalton@US.IBM.COM | +1 (914) 945 2480
IBM T.J. Watson Research Center



<https://www.linkedin.com/in/tjdalton> | <https://twitter.com/TJDaltonIBM>





Sustainable Urban Transport

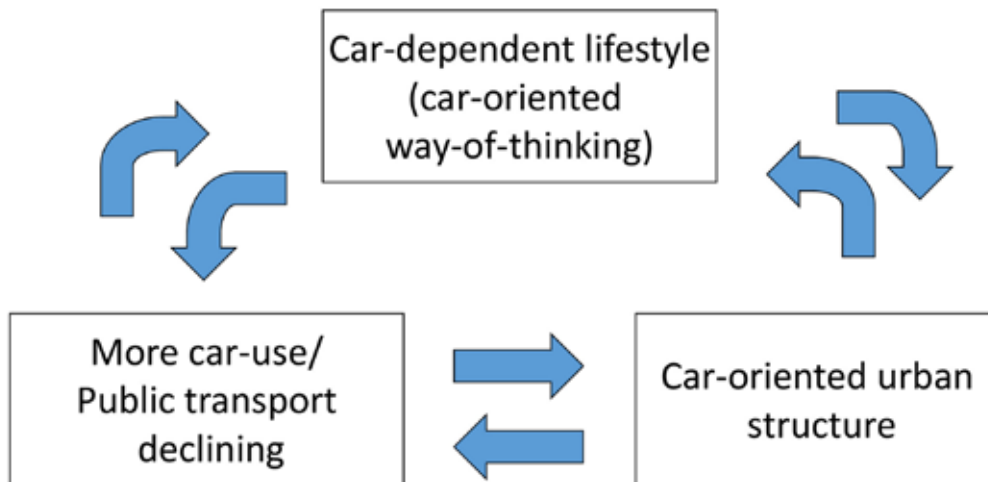
Hironori Kato
Department of Civil Engineering
The University of Tokyo

Introduction

- Efficient urban transportation could be one of the most important factors for sustainable urban development.
- However, many developing cities suffer from the motorization spiral.

Typical Urban Transportation Problem

"Motorization Spiral"



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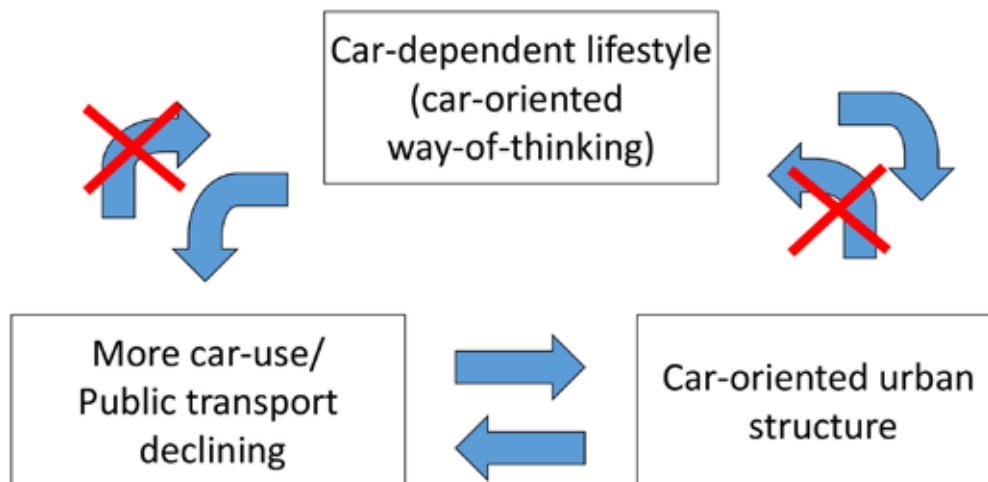
Three Approaches to Stopping the Motorization Spiral

- Approach 1
Psychological/educational approach
- Approach 2
Joint planning of land-use and transportation
- Approach 3
Traffic demand management/Modal shift

4

Approach 1

Psychological/educational approach



5

Mobility Management

- Mobility management gives the opportunities to schools/firms/society to learn about and engage in healthier and more sustainable travel options through innovative programs and curriculum.



Source: TravelSmart Australia

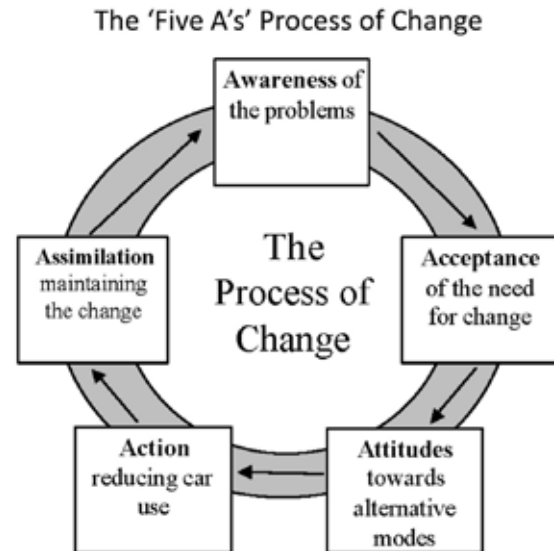


モビリティ・マネジメント

Source: Japan Society of Civil Engineering

Model of Mobility Management

- Marketing and management initiatives influence travel attitudes and behavior.
- Recently, 'soft' policy measures have begun to be implemented and monitored on a growing scale, both in one-off, local initiatives and as part of national and trans-European trials.
(Jones and Sloman, 2003)

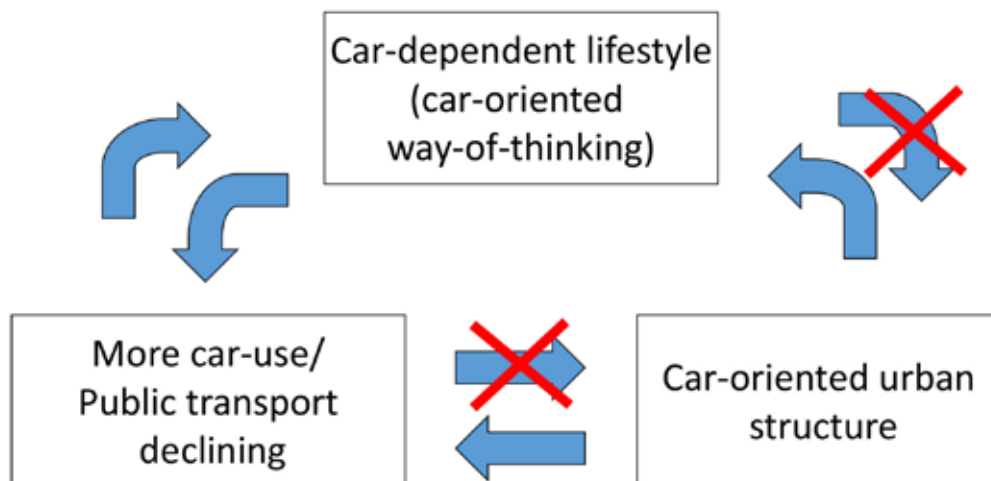


Source: Jones and Sloman (2003)

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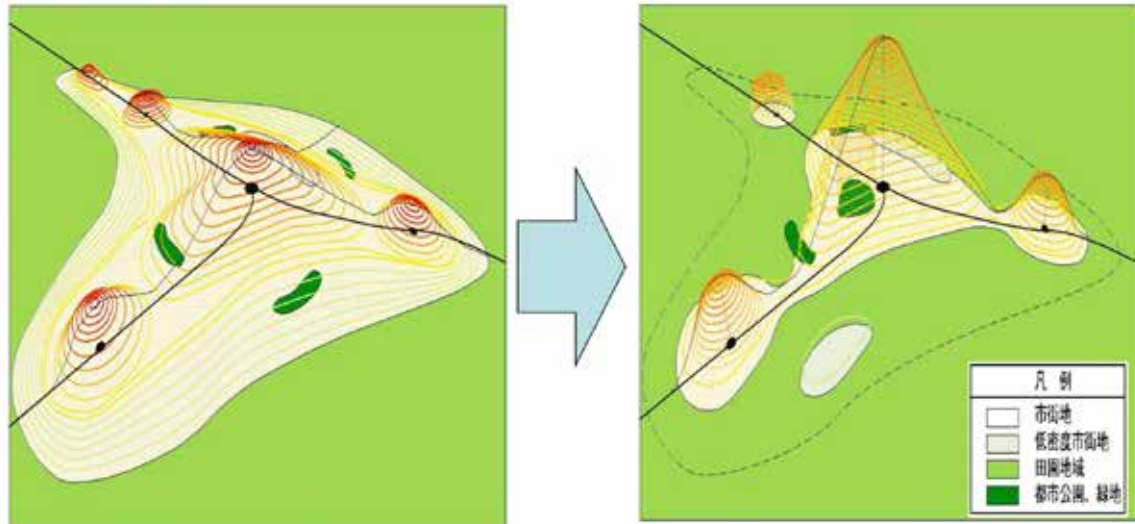
Approach 2

Joint planning of land-use and transportation



8

Concept of Compact City

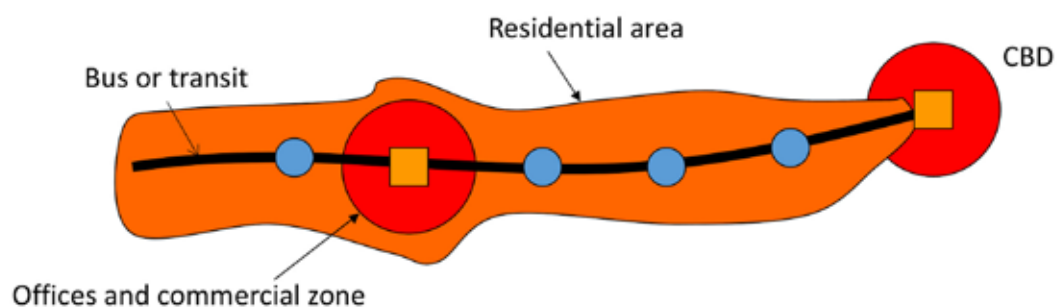


Source: MLIT, Japan

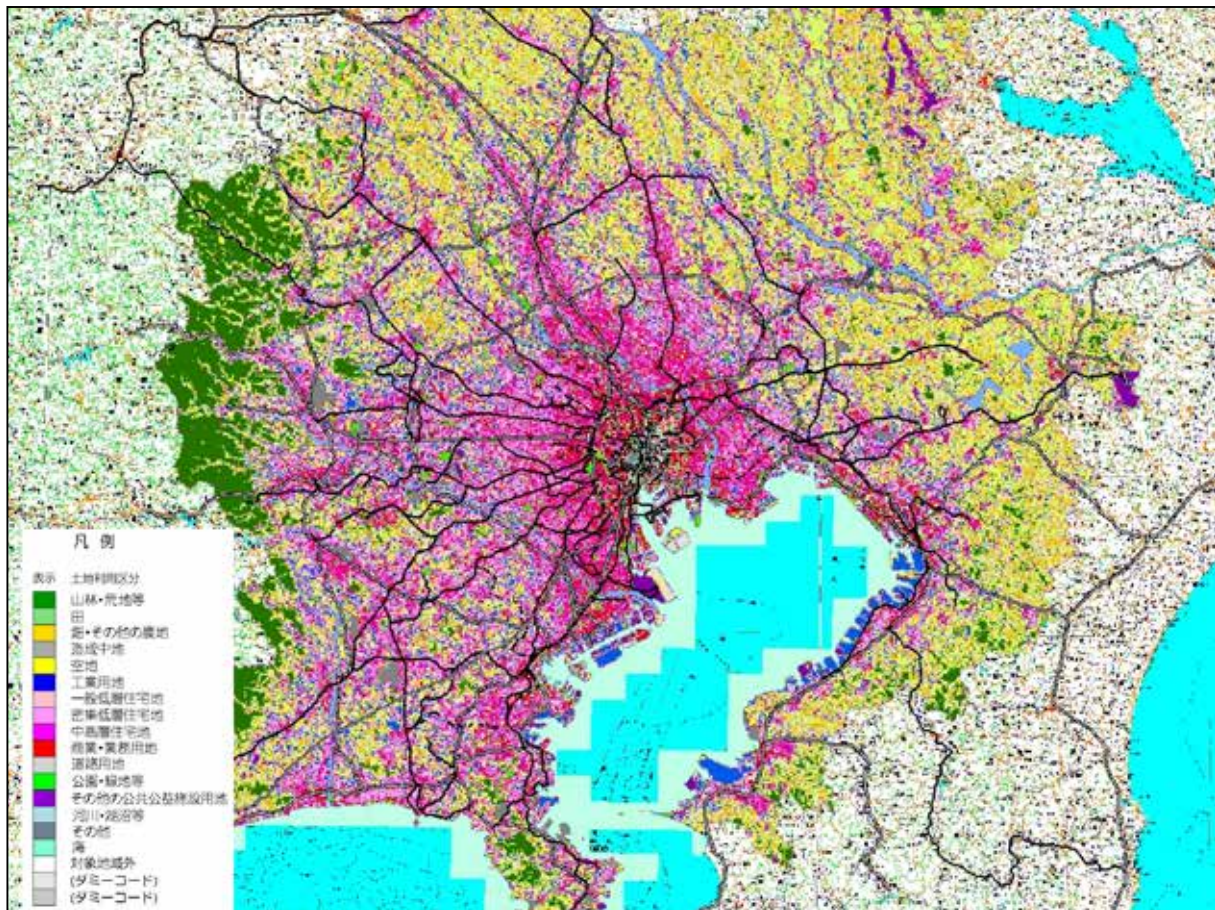
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Transit-oriented Development (TOD)

TOD is a mixed-use residential and commercial area designed to maximize access to public transport.

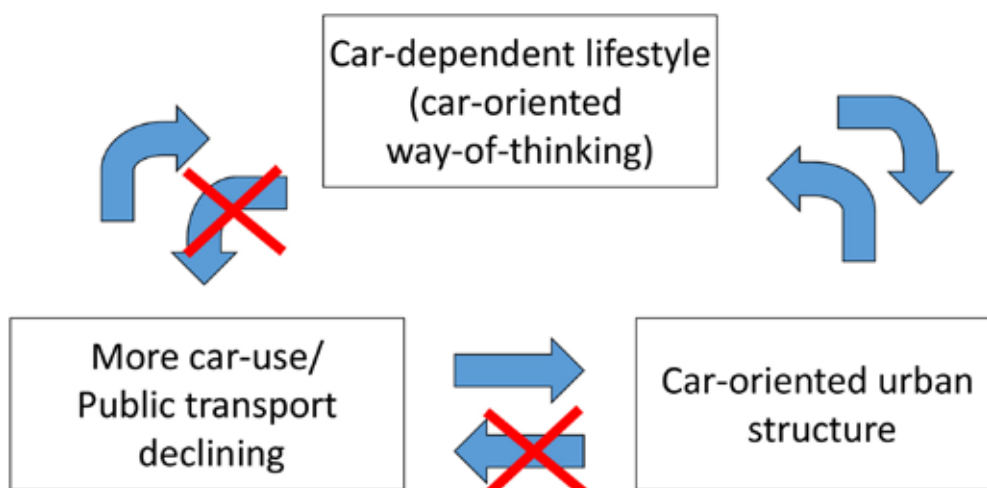


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Approach 3

Traffic demand management/Modal shift



12

Traffic demand management (TDM)

- Strategies and policies to reduce travel demand or to redistribute this demand in space or in time.



Singapore

Photo by Hironori Kato

13

Options of TDM

Category	Type of TDM
Reduction of car-use trip generation	Road pricing, Number-plate regulation High-occupancy-lane (HOV) regulation Truck ban, workplace parking levy
Improvement of traffic efficiency	Car pooling, Cooperative Truck Distribution system
Modal shift	Park and ride, bus-exclusive lane, Public-transport-priority traffic signal system, Discount for public transport
Redistribution among time/space	Off-peak commuting, flexible work time system, Dynamic traffic information

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Concluding remarks

- Integrated policy including multiple approaches is important for successful urban transportation.
- Various stakeholders with different framings should be involved in the integrated policy due to its complicated structure.
- Thus, consensus-building is always a key issue.





Discussant notes for Session 3, 11 March 2015

Dr. Yee-Kuang HENG, PhD

Associate Professor

Lee Kuan Yew School of Public Policy,
National University of Singapore

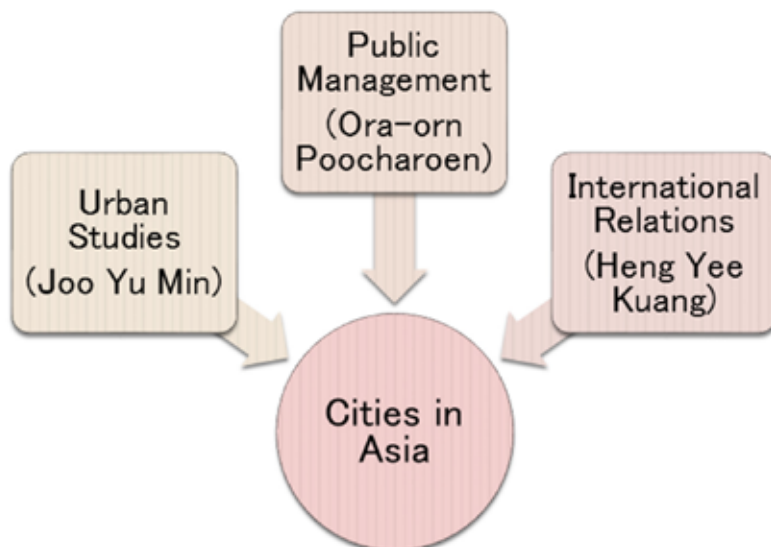
& Visiting Project Associate Professor

Graduate School of Public Policy,

The University of Tokyo



Interdisciplinary lens to look at city behavior



Funded by the Thematic Research Collaboration (TRC) Grant 2014,
LKY School, NUS

Research Questions

- How are cities re-branding themselves as urban solution providers?
- How can networks be used to explain the transfer of urban solutions internationally to other cities?
- How is this re-branding strategy related to the city's international power ?

3

LKY School Seminar

15/5/2015

Three Cities

- Data collected in 2014
- Interviews (through professional translators) with city bureaus related to water, waste, sewage, environment, transportation, tourism, urban planning, and disaster management.
- Documents, brochures
- Site visits



4

LKY School Seminar

15/5/2015

Case study: Tokyo's export of water solutions to Bangkok

Cities as urban solutions providers and the internationalisation of policy transfers

5

Quotes from Tokyo Metropolitan Government (TMG)

"Tokyo Vision 2020: showing our best to the world" (TMG, 2011)

"Tokyo should present the world with a vision of how cities should be, which could lead to solving common problems shared by humanity" (Governor Ishihara, 2011)

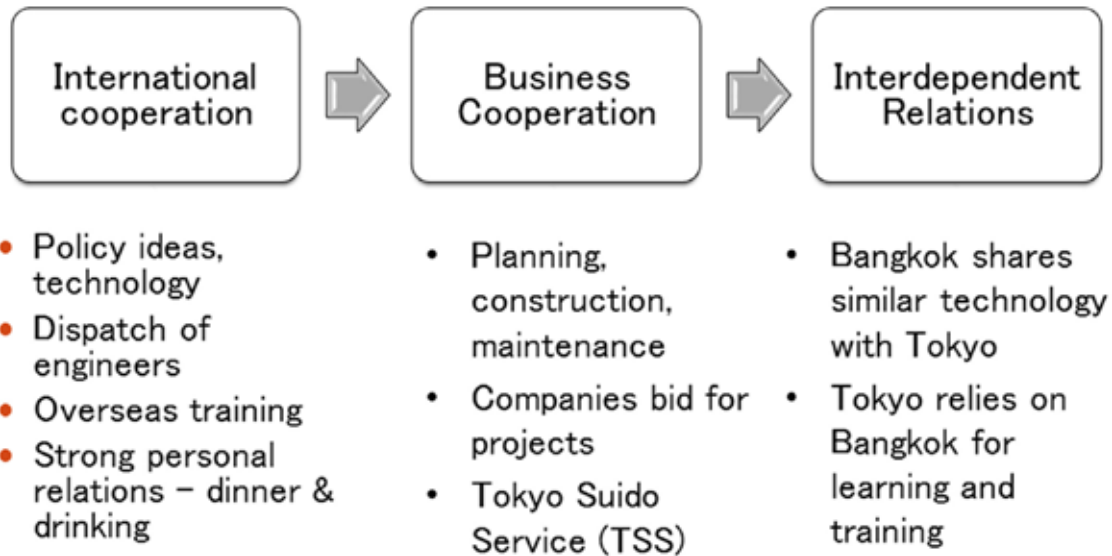
"Bureau of Waterworks is a world-class water supplier seeking to provide our advanced technologies and know-how to the water works corporations in Asia and around the world" (Interview at TMG, April 2014)

"Water Supply in Tokyo: Provision of Excellent Water and High-Quality Service Business Outline 2014" (Bureau of Waterworks, 2014)

"Solutions to the World's Water Issues" (Bureau of Waterworks, 2012)

6

Relations with Bangkok Metropolitan Authority



7

Motives for the Urban Solution Provider Strategy



8

Controversies

- Why should a city use its budget to build someone else's infrastructure?
- Cities are not setup to make profit. Should they be?
- Grey area: a retired public engineer sets up a company to provide water-related consultancy and then works closely with the city to sell the companies' know-how overseas.

9

So what?

- New City Branding Strategy → Urban Solution Provider
- Intermestic Networks → as framework to explain the transfer of urban solutions between cities around the world

10

The 2nd GSDM International Symposium:
Four Years after the Great East Japan Earthquake:
Recent Trends in Innovation, Resilience, and Security and their Implications for the Future



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Hosted by: Global Leader Program for Social Design and Management (GSDM), the University of Tokyo
Graduate School of Public Policy (GraSPP), the University of Tokyo

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〒113-0033 東京都文京区本郷7-3-1 工学部8号館606号室 TEL: 03-5841-0846 (受付時間: 平日10:00~17:00)