

البرمجيات المتاحة لتخطيط وإدارة النقل الحضري الجماعي ومتطلبات تطبيقها

المهندس رامي سمعان
إستشاري في قطاعي النقل واللوجستيات

الدعم الفني لمصلحة النقل البري في وزارة المواصلات الليبية

في مجال استخدام التكنولوجيا الحديثة لتخطيط وإدارة شبكات النقل
الحضري الجماعي في المدن الليبية

ورشة العمل الفنية الثالثة

الخميس 6 حزيران/ يونيو 2024

الإذاعات البرمجية لدعم تخطيط وتشغيل النقل الحضري الجماعي



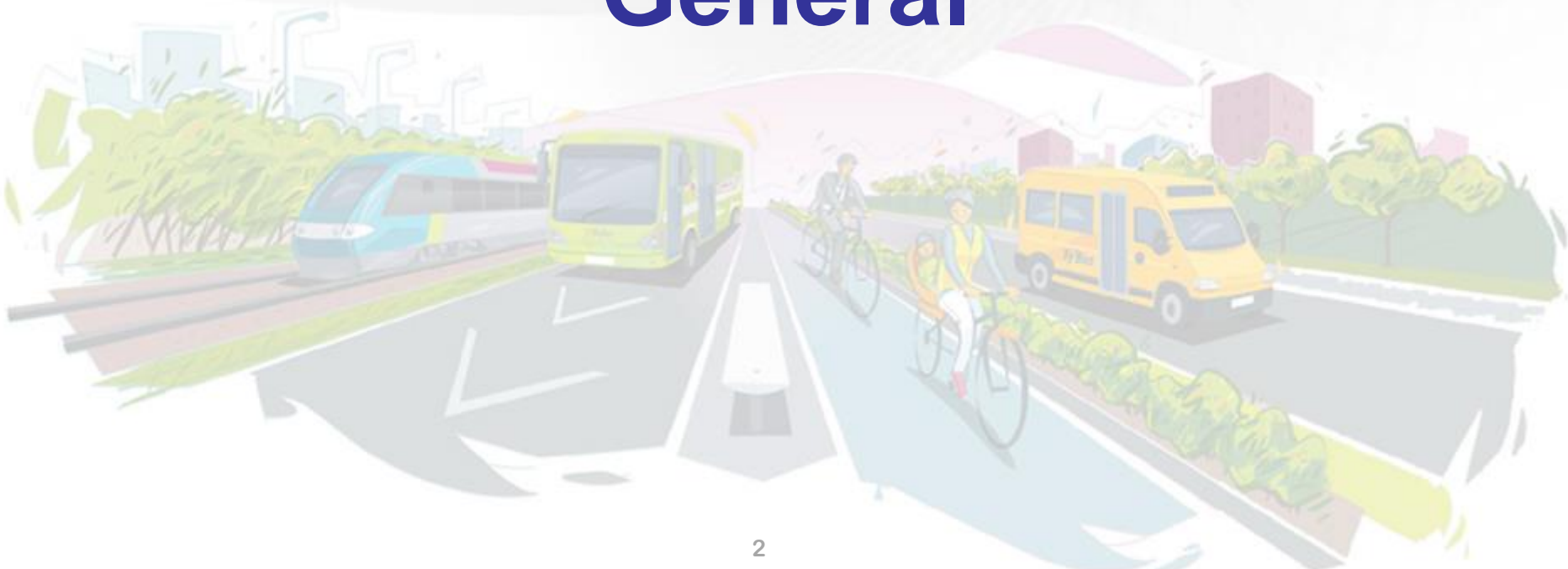
ازدهار البلدان كرامة الإنسان



الأمم المتحدة

الاسهام
ESCWA

General

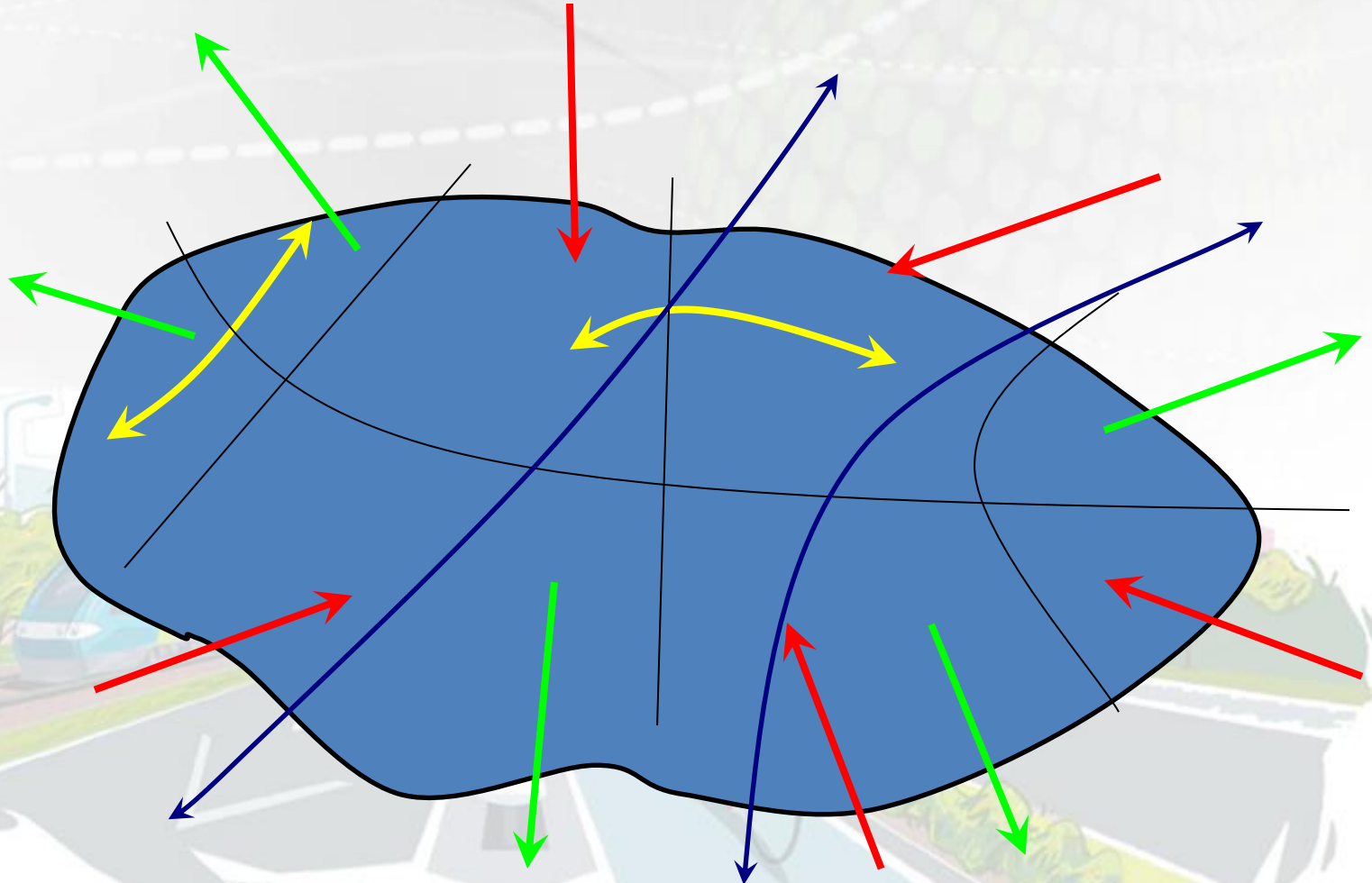


- Rebuild an image of the reality
- A traffic model is a tool allowing to build the mobility system which includes road network, transport modes taken into consideration Demand and Supply configuration and characteristics :

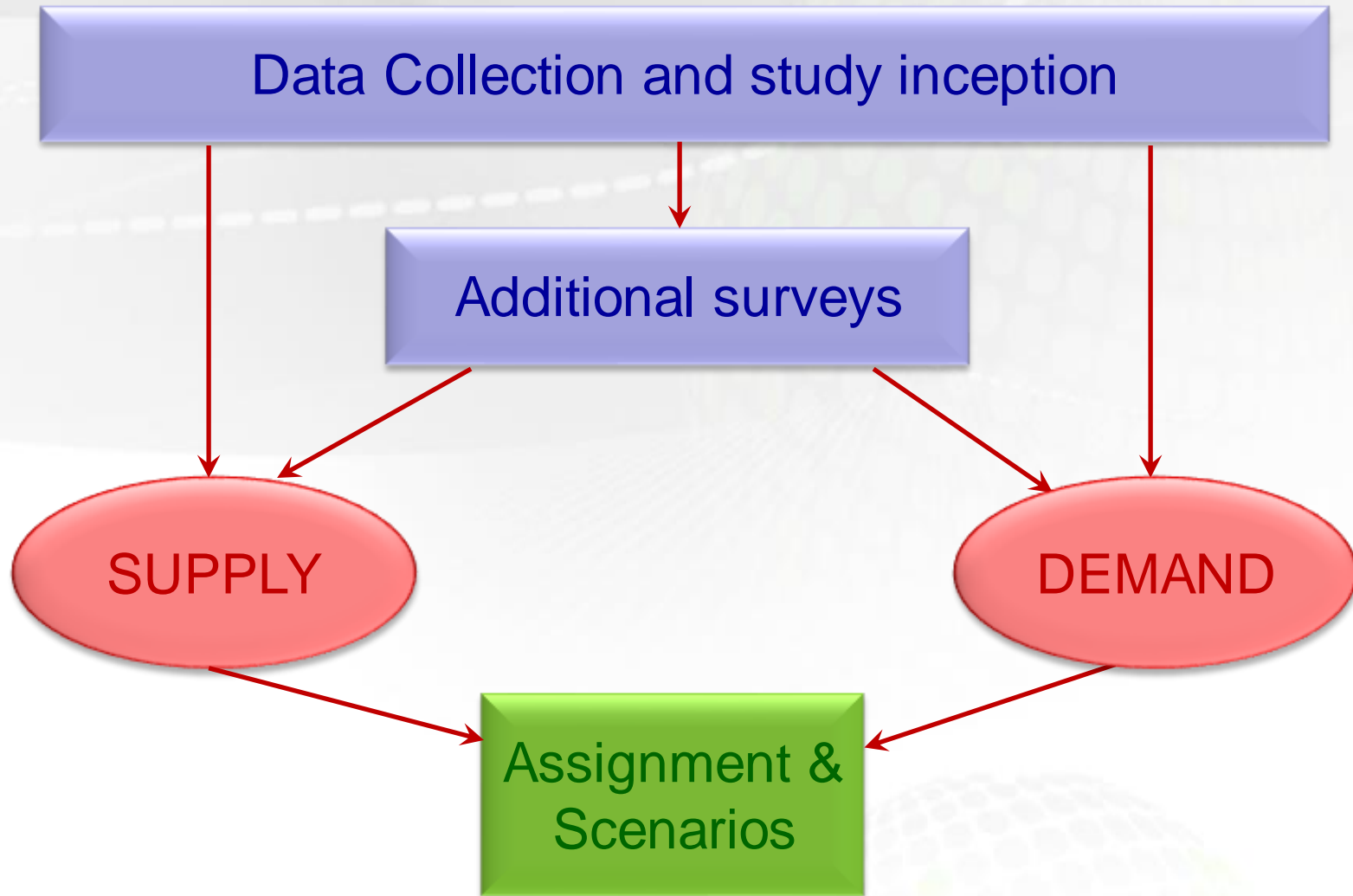


Demand Modeling

Zonning System
Consistency

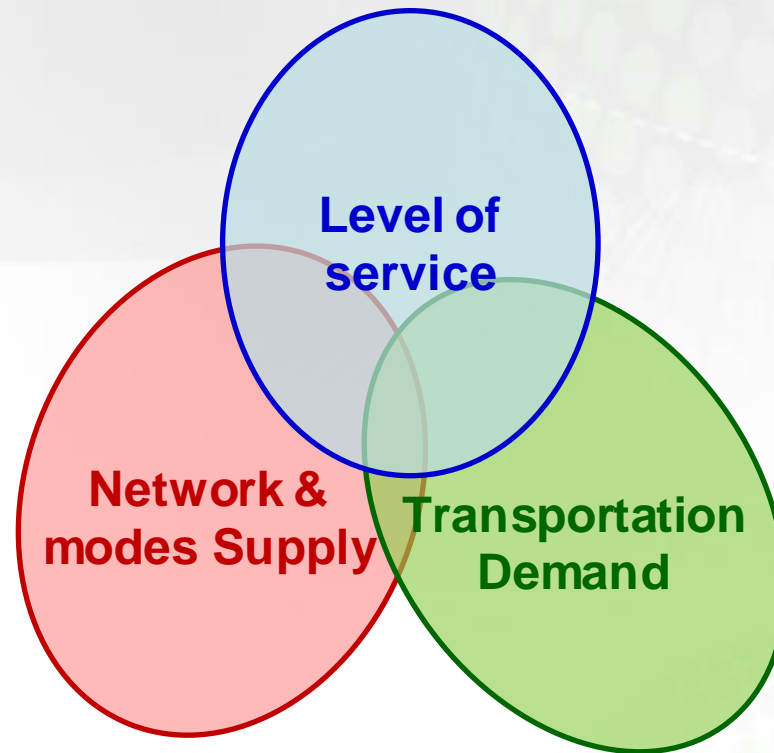


General Framework



General Scope

- The main objective of a traffic model is to determine the relation between :



Demand Side

- Need for data Collection : socio-economy, mobility, counts, seasonality, types of vehicles, trip purposes, OD patterns
- Zoning System:
 - ✓ Administrative limits:
 - ⇒ To allow comparative analysis
 - ⇒ Coherence with various sources
 - ⇒ Monitoring & follow-up

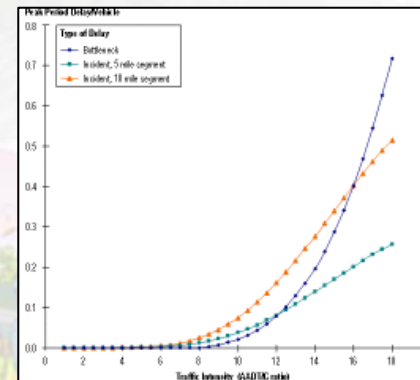
Supply Side

- Travel Time Survey of the Network
- Capacities & type of network components



Travel Time Survey

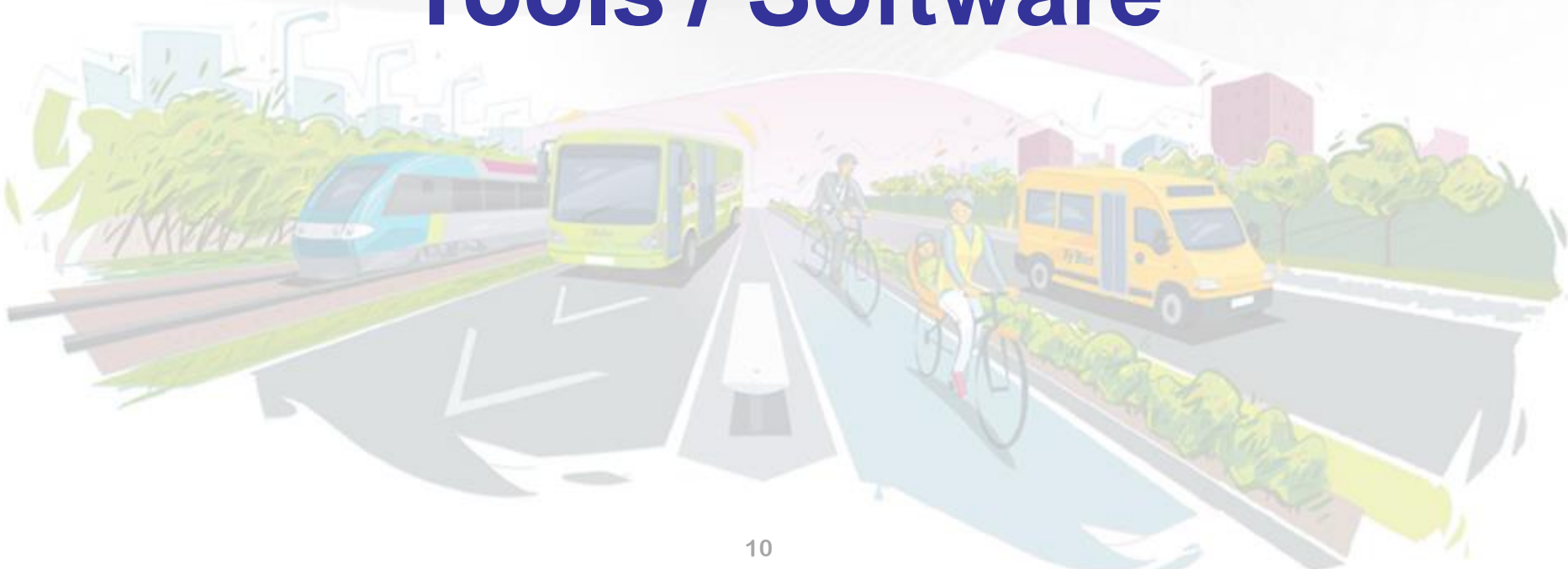
Volume Delay Charts



$$T = T_0 \times \left(1 + a \times \left(\frac{\text{Traffic}}{\text{Capacity}} \right)^b \right)$$

Volume Delay Functions

Tools / Software



Macro Modelling

Open sources with GIS interface and option for multimodality – based on equilibrium process

- CUBE

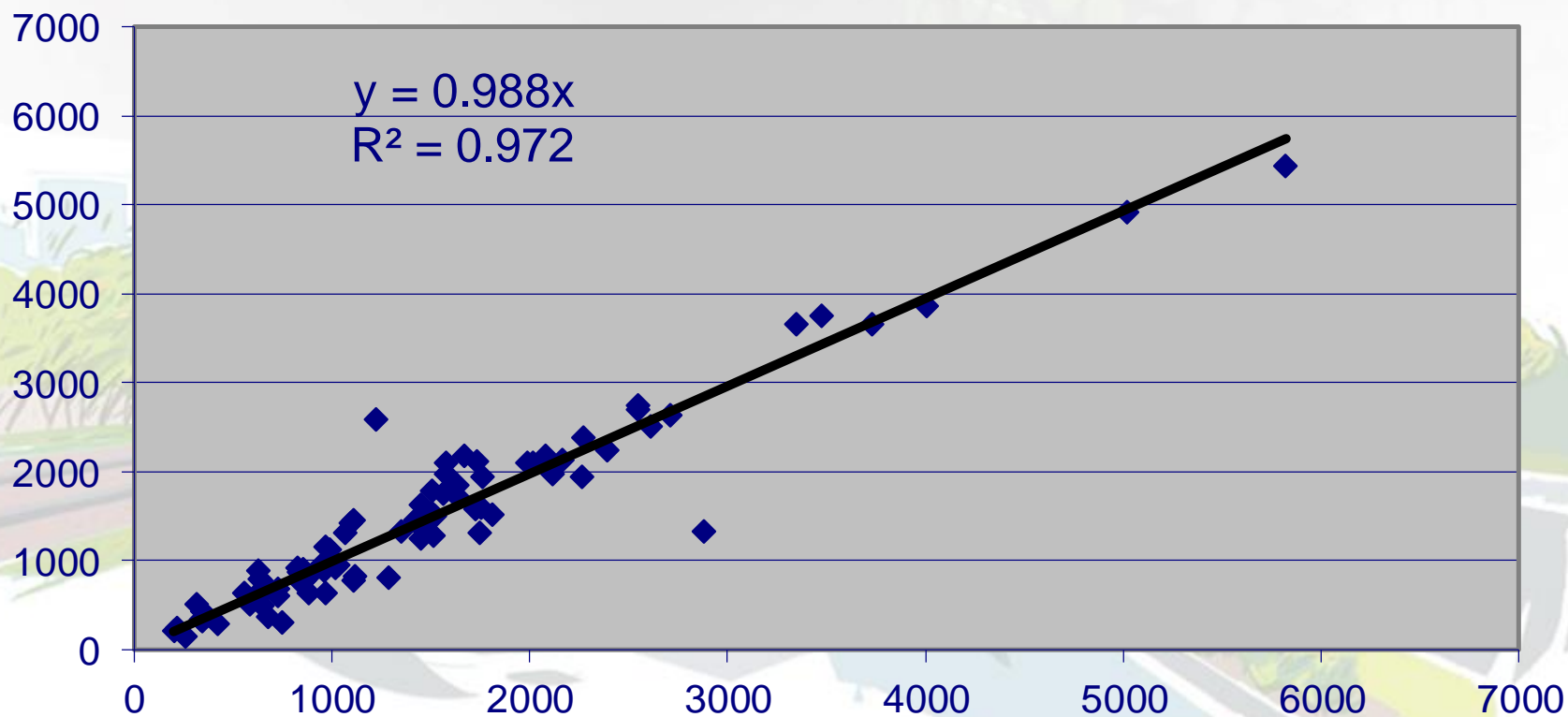
- EMME

- VISUM



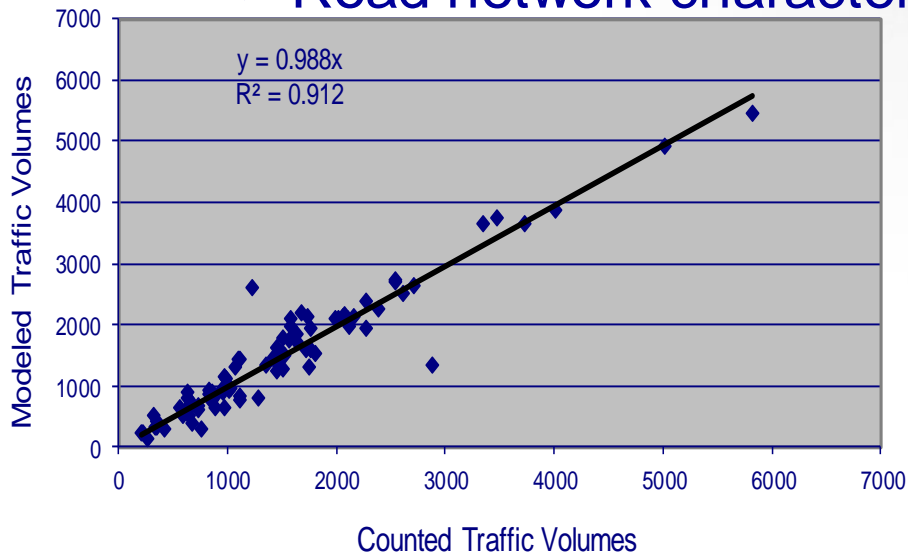
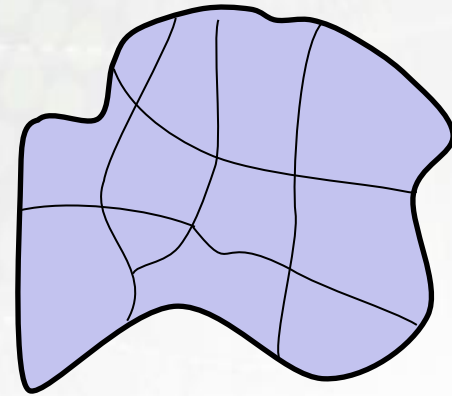
Calibration Process

- Comparison between counted volumes / passengers and assignement results

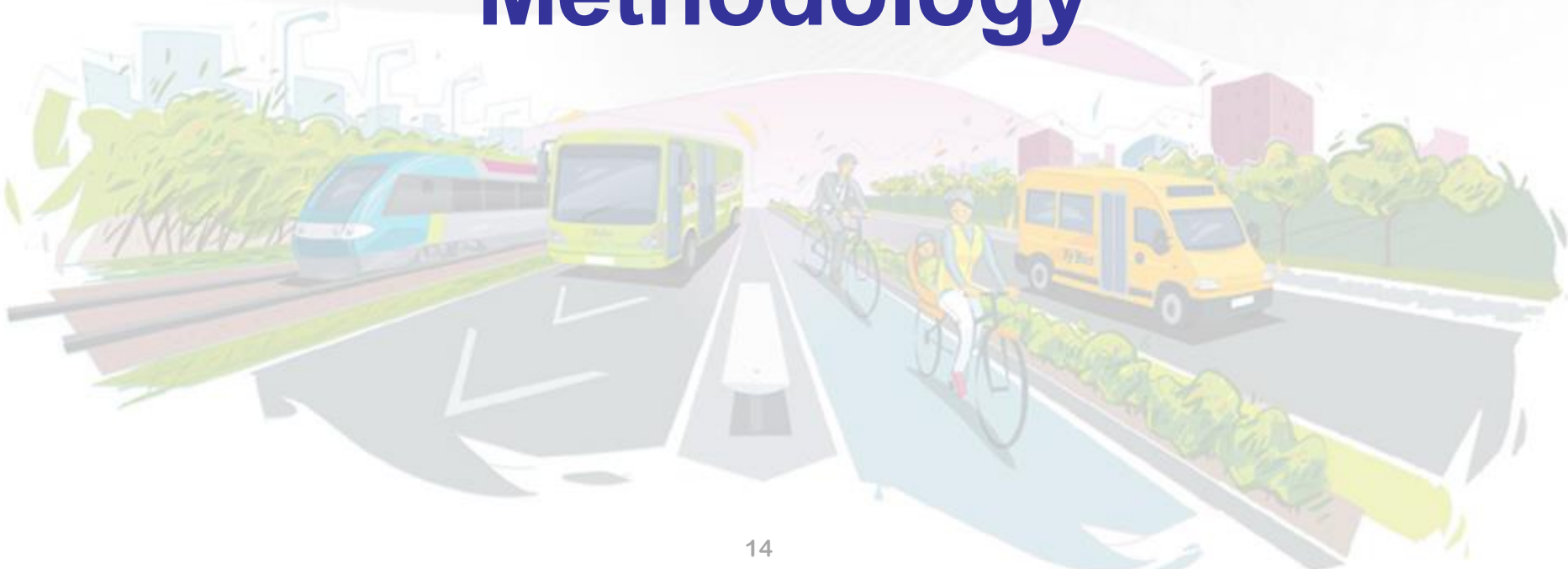


Model limits

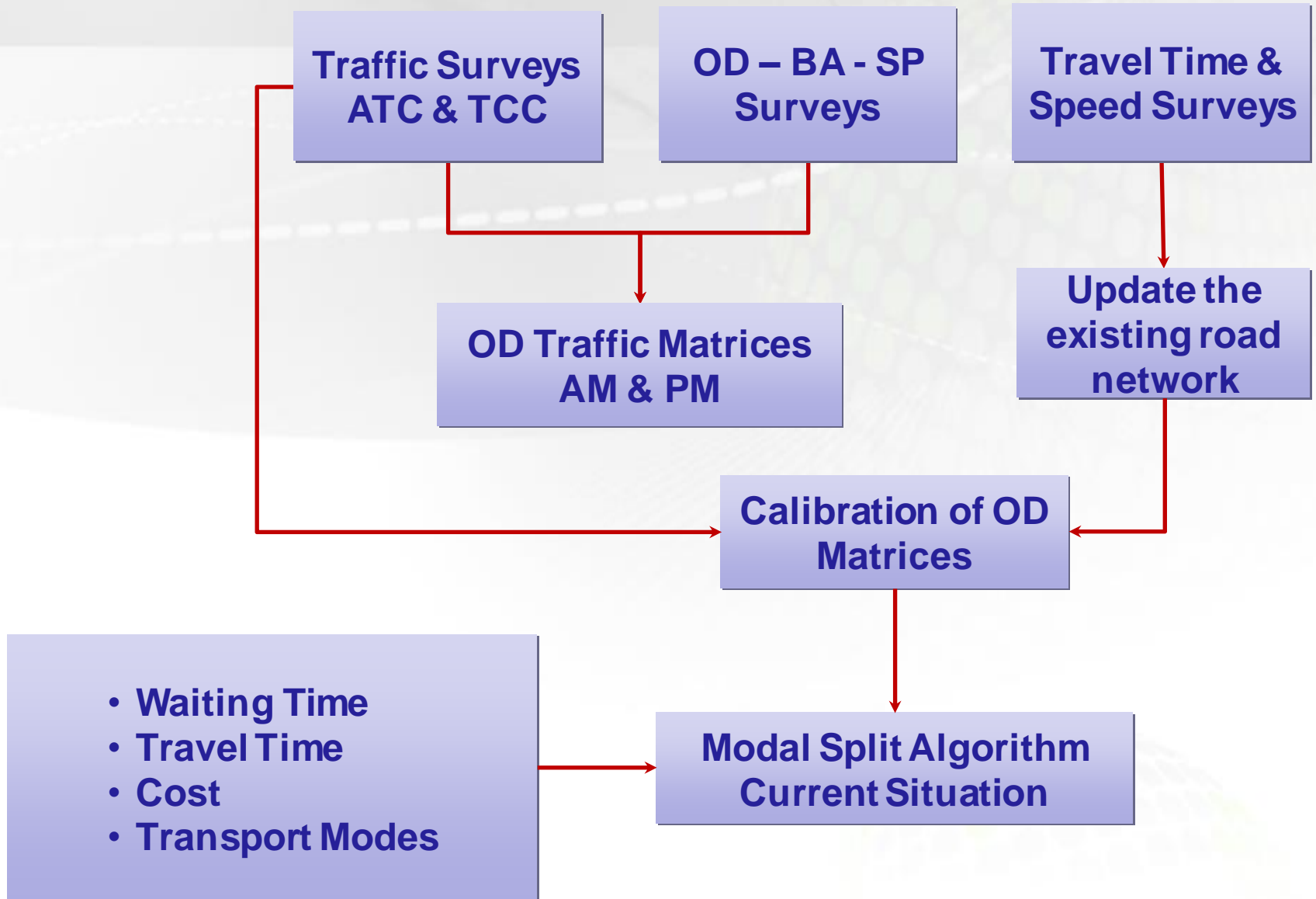
- Results relevancy is related to several factors, mainly:
 - ✓ Calibration quality
 - ✓ Possible impact of local traffic ⇨ is not taken into consideration in the demand matrix
 - ✓ Adequacy between supply and demand
 - ✓ Road network characteristics



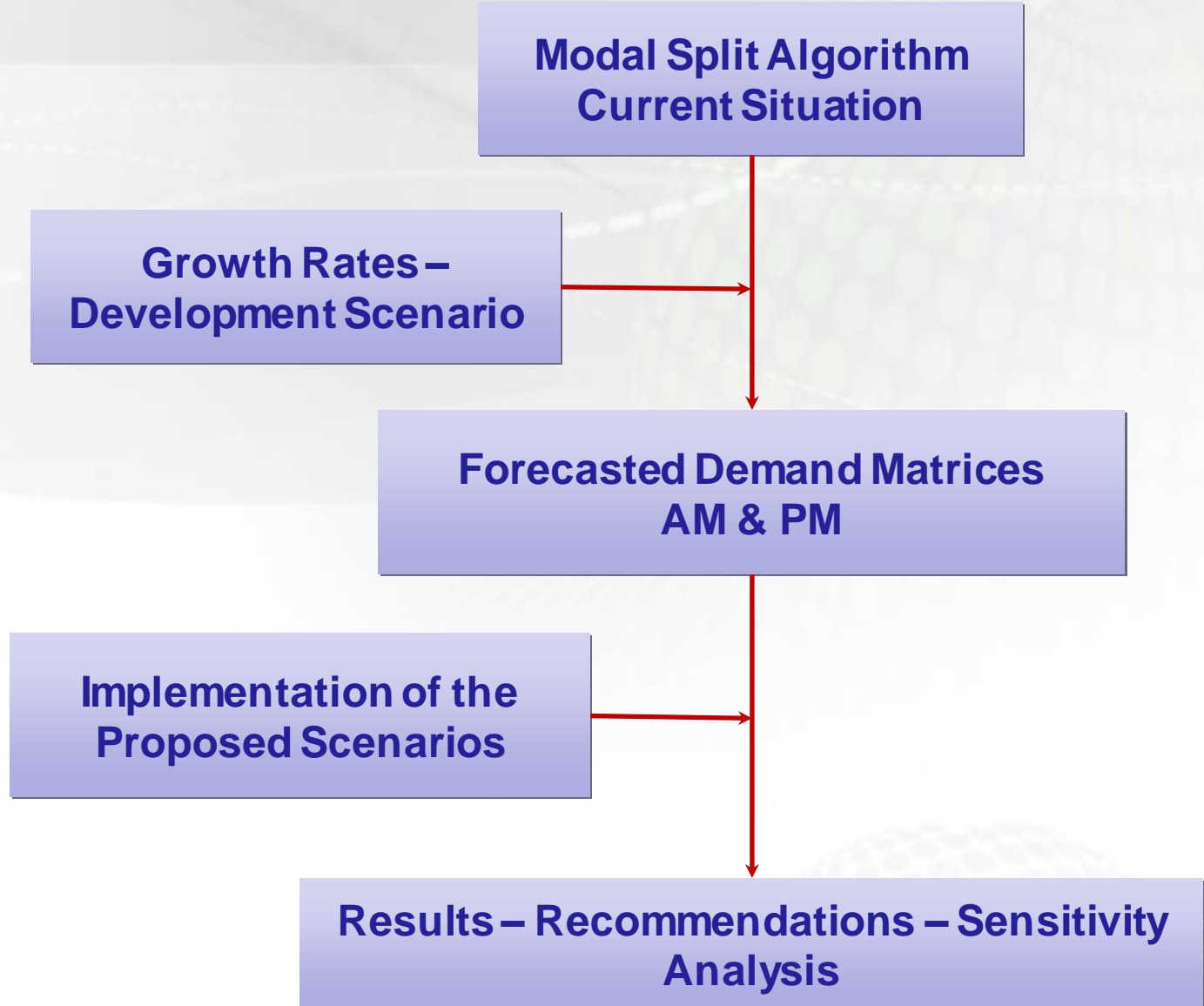
Methodology



Work Plan Outline



Work Plan Outline



**Modal Split Algorithm
Current Situation**

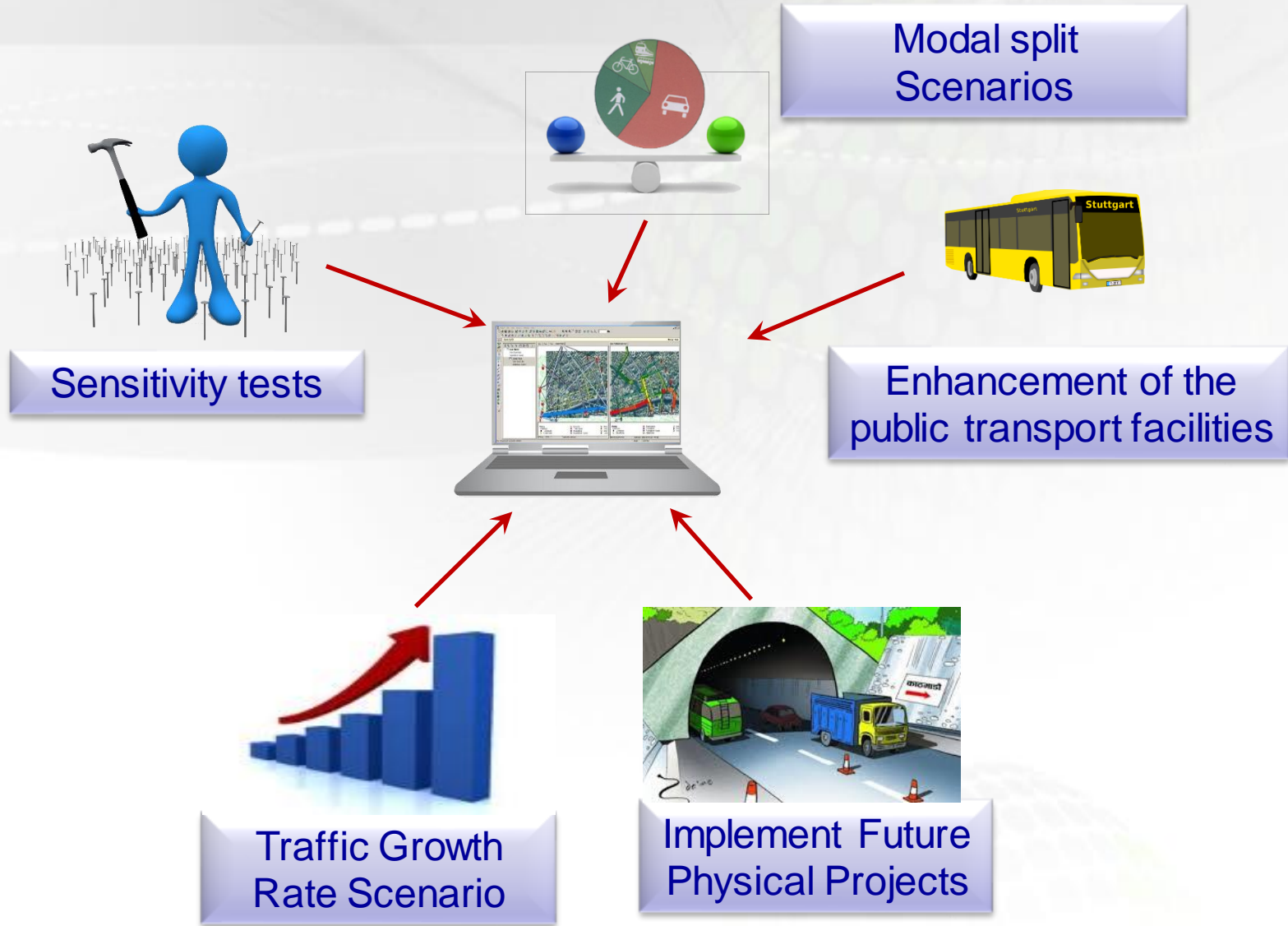
**Growth Rates –
Development Scenario**

**Forecasted Demand Matrices
AM & PM**

**Implementation of the
Proposed Scenarios**

**Results – Recommendations – Sensitivity
Analysis**

Scenarios



Sensitivity Tests



Sensitivity Tests

Parking Fee



Growth Rate



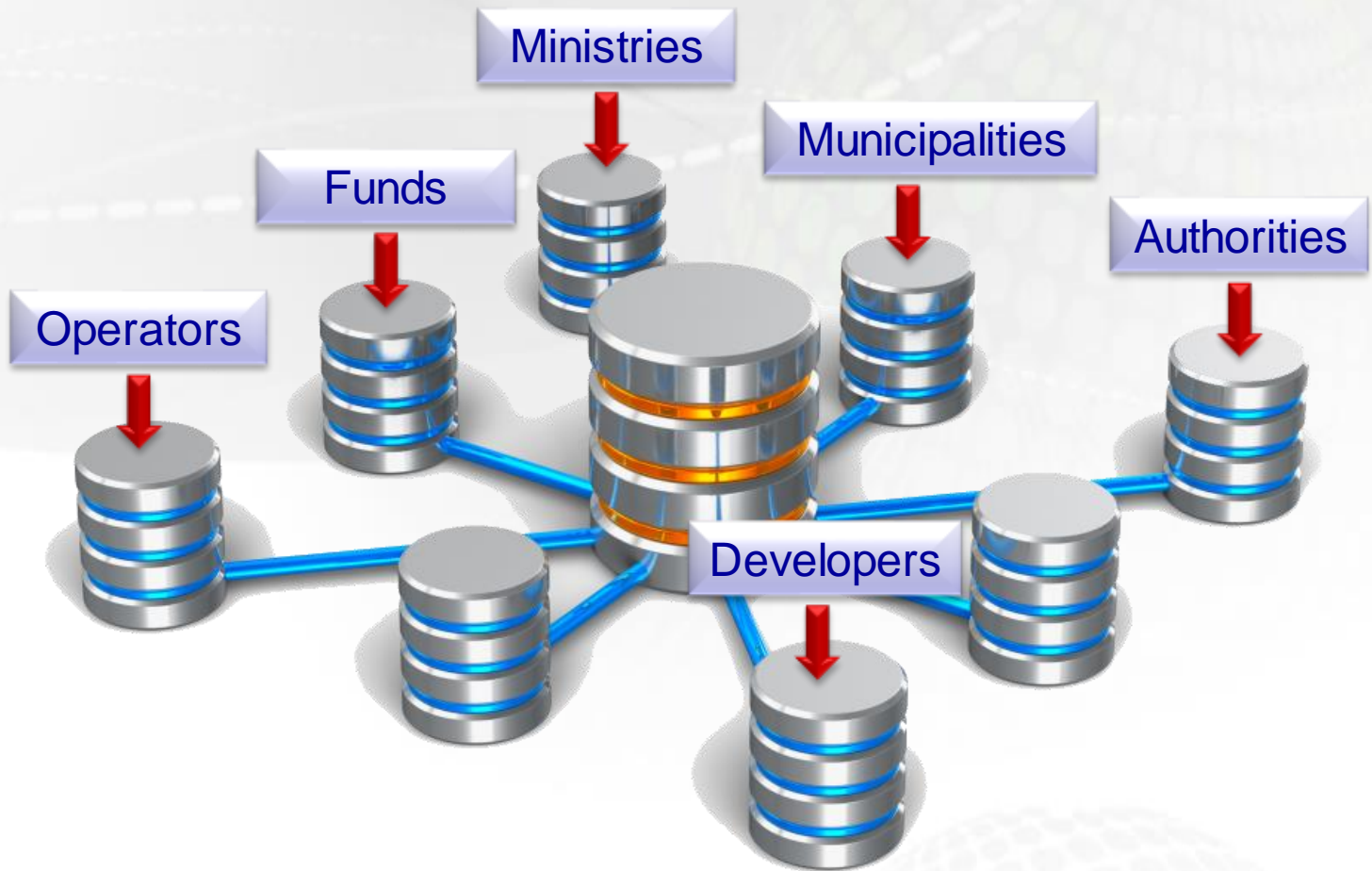
New Tariff



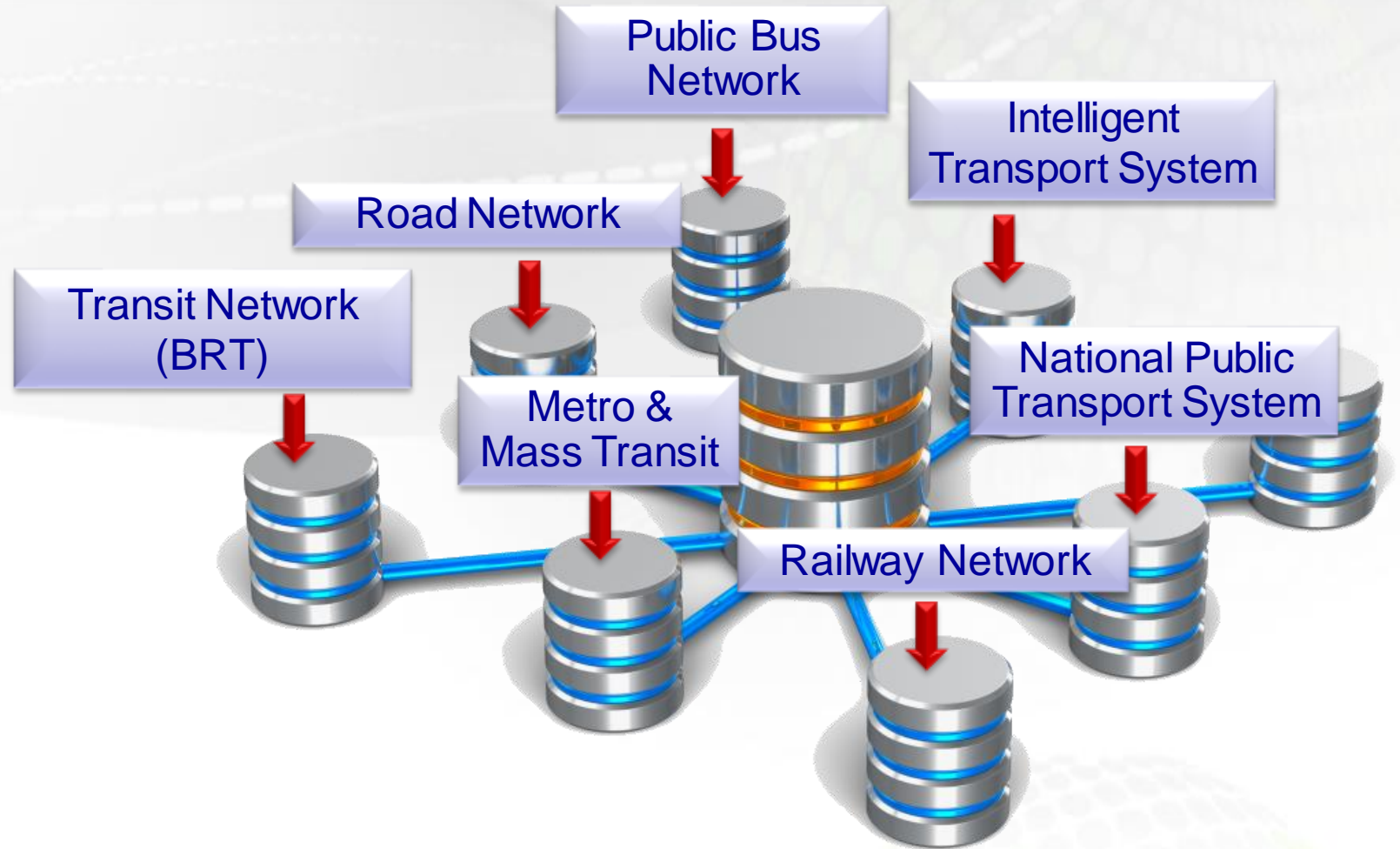
Main Contribution

- Restructuring of the public transport means
- Identification of public transport appropriate coverage area
- Analysis of tariffs policy
- Multimodality approach
- Dedicated corridors and sections (or BRT) to be implemented in order to support the system sustainability.

Perspectives



Projects using the traffic model



شكراً

For more info:
rsemaan@tmsconsult.com



الأمم المتحدة

الاستقما

ESCWA