ADVANCING PUBLIC TRANSPORT

WORLD METRO UPDATE

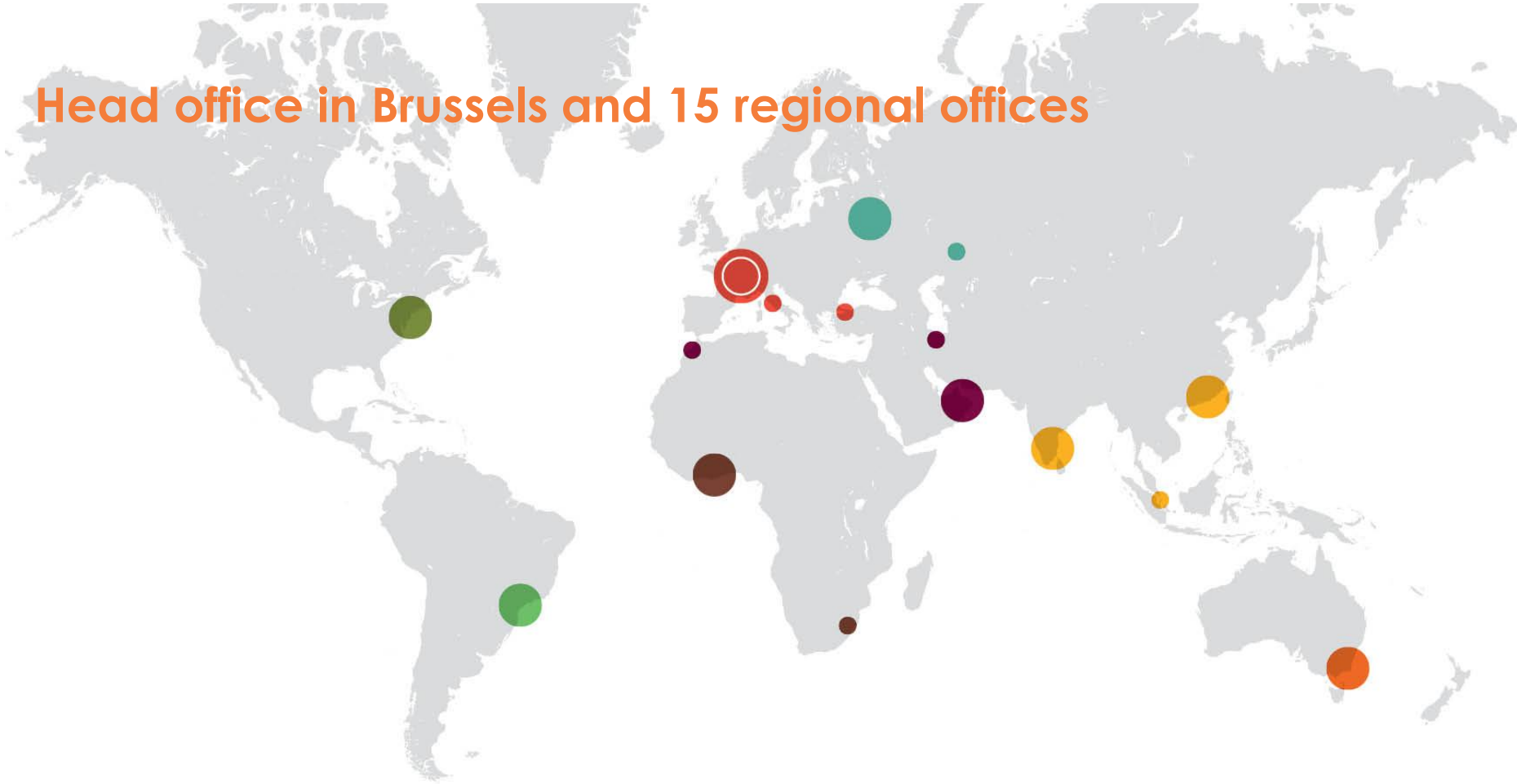
UITP DATA AND STATISTICS

Mircea Steriu
Stockholm, 2 February 2016

CONTENTS

A WORLDWIDE ASSOCIATION

Head office in Brussels and 15 regional offices



EUROPE
- Brussels, Belgium | UITP Main Office, Europe Regional Office, Central & Eastern Europe Liaison Office
- Rome, Italy | Liaison Office
- Istanbul, Turkey | Liaison Office

EURASIA
- Moscow, Russian Federation | Regional Office
- Astana, Kazakhstan | Liaison Office NEW

ASIA-PACIFIC
- Hong Kong, China | Regional Office
- Bangalore, India | Regional Office
- Singapore | Centre for Transport Excellence

AFRICA
- Abidjan, Ivory Coast | Regional Office
- Johannesburg, South Africa | Liaison Office

AUSTRALIA & NEW ZEALAND
- Melbourne, Australia | Regional Office

LATIN AMERICA
- São Paulo, Brazil | Regional Office

NORTH AMERICA
- New York, United States | Regional Office NEW

MIDDLE EAST & NORTH AFRICA
- Dubai, United Arab Emirates | Regional Office & Centre for Transport Excellence
- Casablanca, Morocco | Liaison Office NEW
- Tehran, Iran | Liaison Office

A DIVERSE MEMBERSHIP

1300 member companies

- Operators (all modes)
- Authorities
- Policy decision-makers
- Research institutes
- The sustainable mobility supply and service industry
- Associations

14,000 contacts

92 countries

UITP unites the sustainable mobility community

2 MOBILITY IN CITIES DATABASE 2015

Overview of urban mobility in selected cities

www.uitp.org/MCD2015

URBAN MOBILITY (1)

- Mid-term review of PTx2 Strategy to double public transport market share by 2025

- Data collection for 63 metropolitan areas worldwide for 2012

- Evolution of urban mobility patterns (where possible) in the past 20 years

- Identify the policies underpinning growth in the market share of public transport and sustainable urban travel

URBAN MOBILITY (2)

Topics covered:

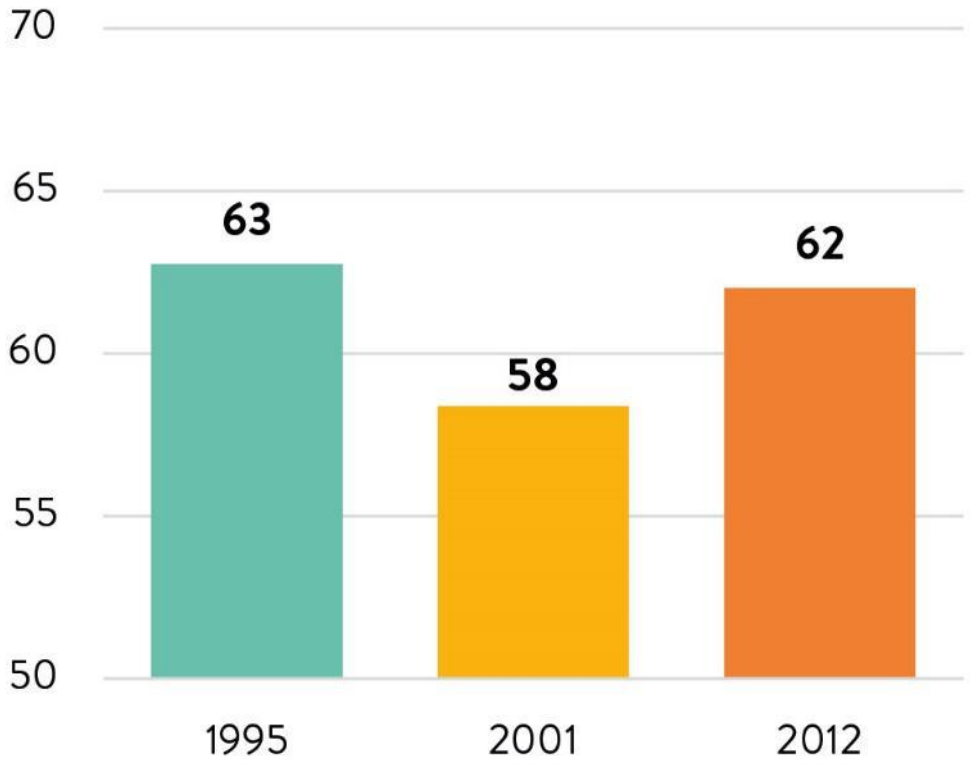
- Demography and economy;
- Urban structure;
- Number and use of private vehicles, including taxis;
- Road network indicators;
- Public transport networks (infrastructure and rolling stock, supply and demand, farebox revenue;
- Mobility patterns.

Where possible: comparisons with previous editions of the MCD

Cities grouped into developed vs. developing economies

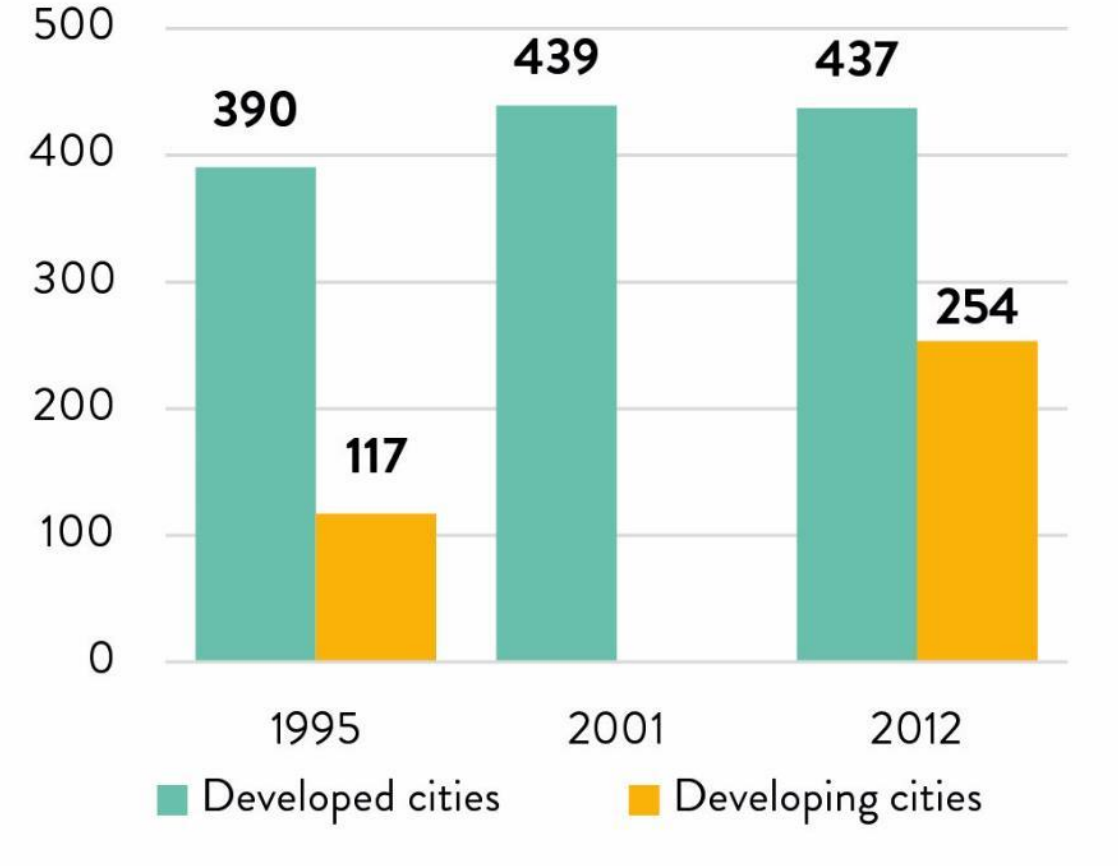
TRENDS AND TRAJECTORIES (1)

Cities in developed countries are getting denser



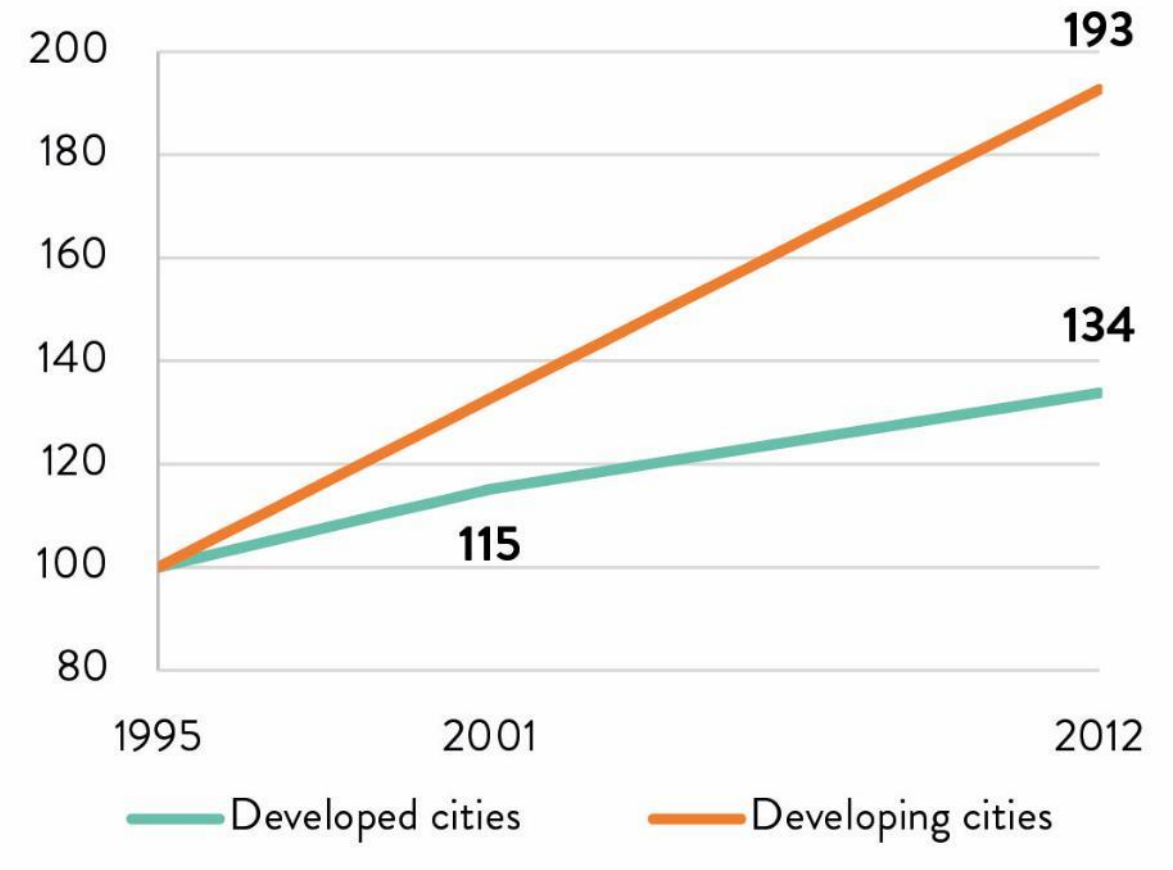
TRENDS AND TRAJECTORIES (2)

Motorisation is peaking in developed cities, but growing fast in developing cities

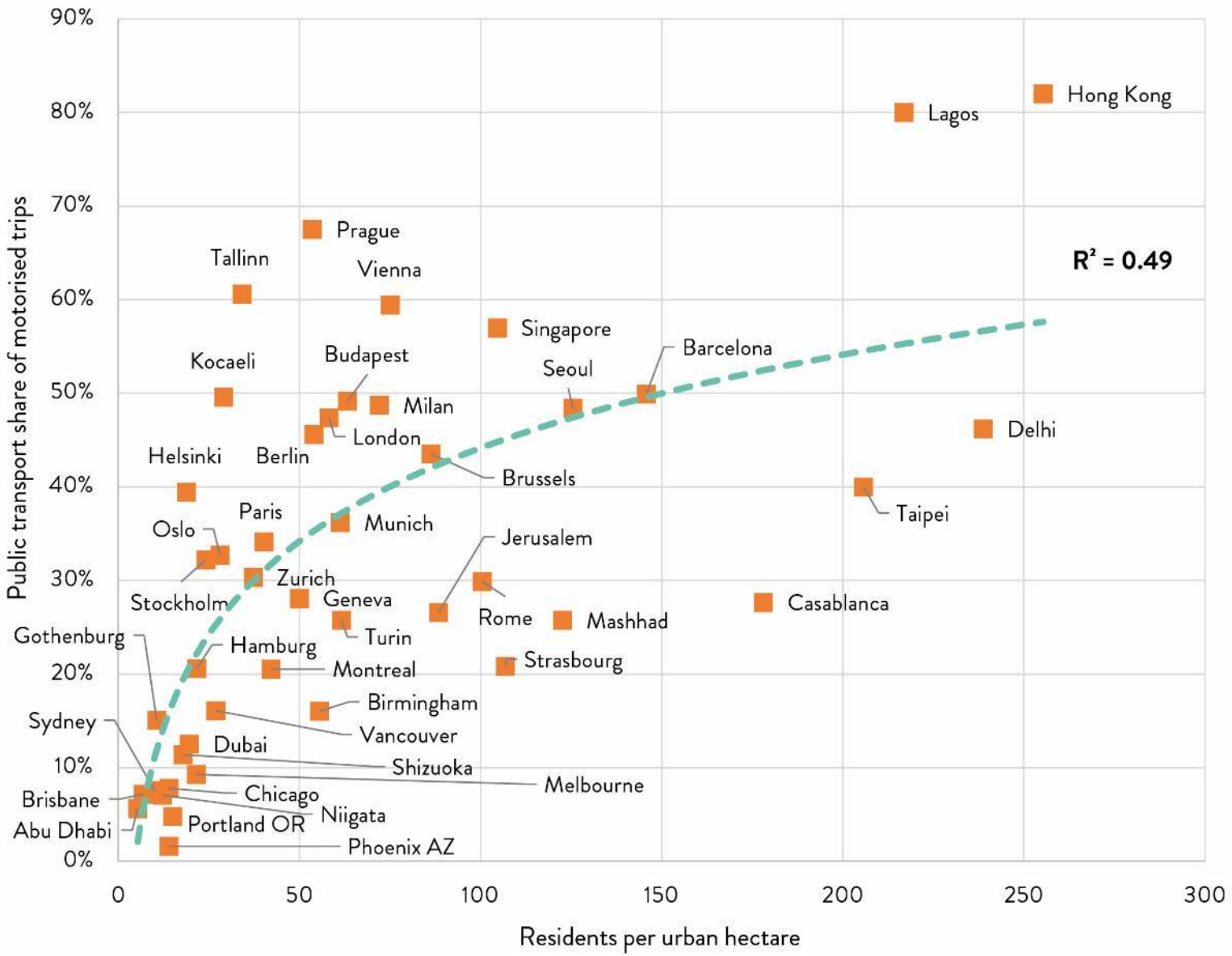


TRENDS AND TRAJECTORIES (3)

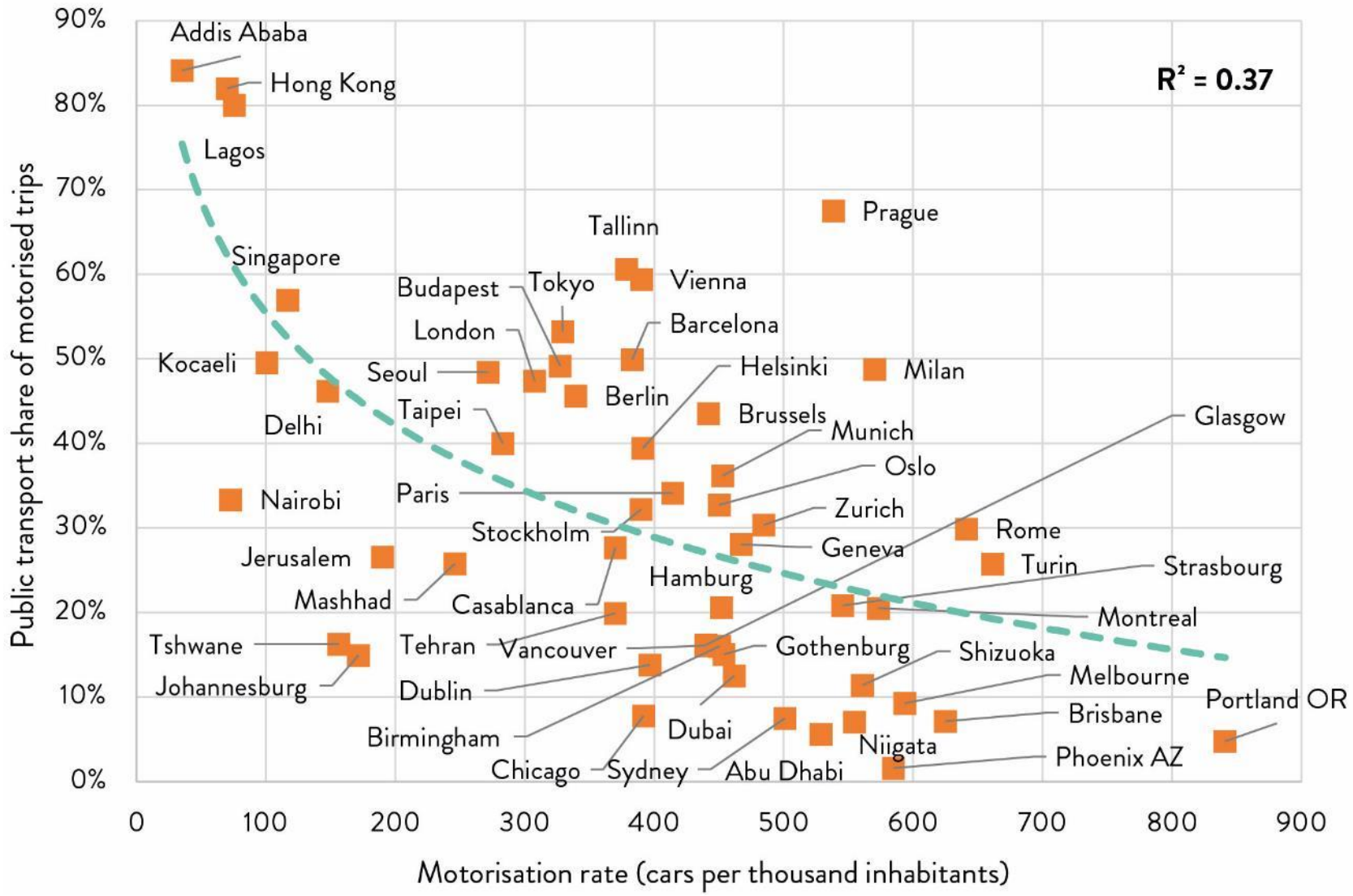
Supply of public transport services is growing



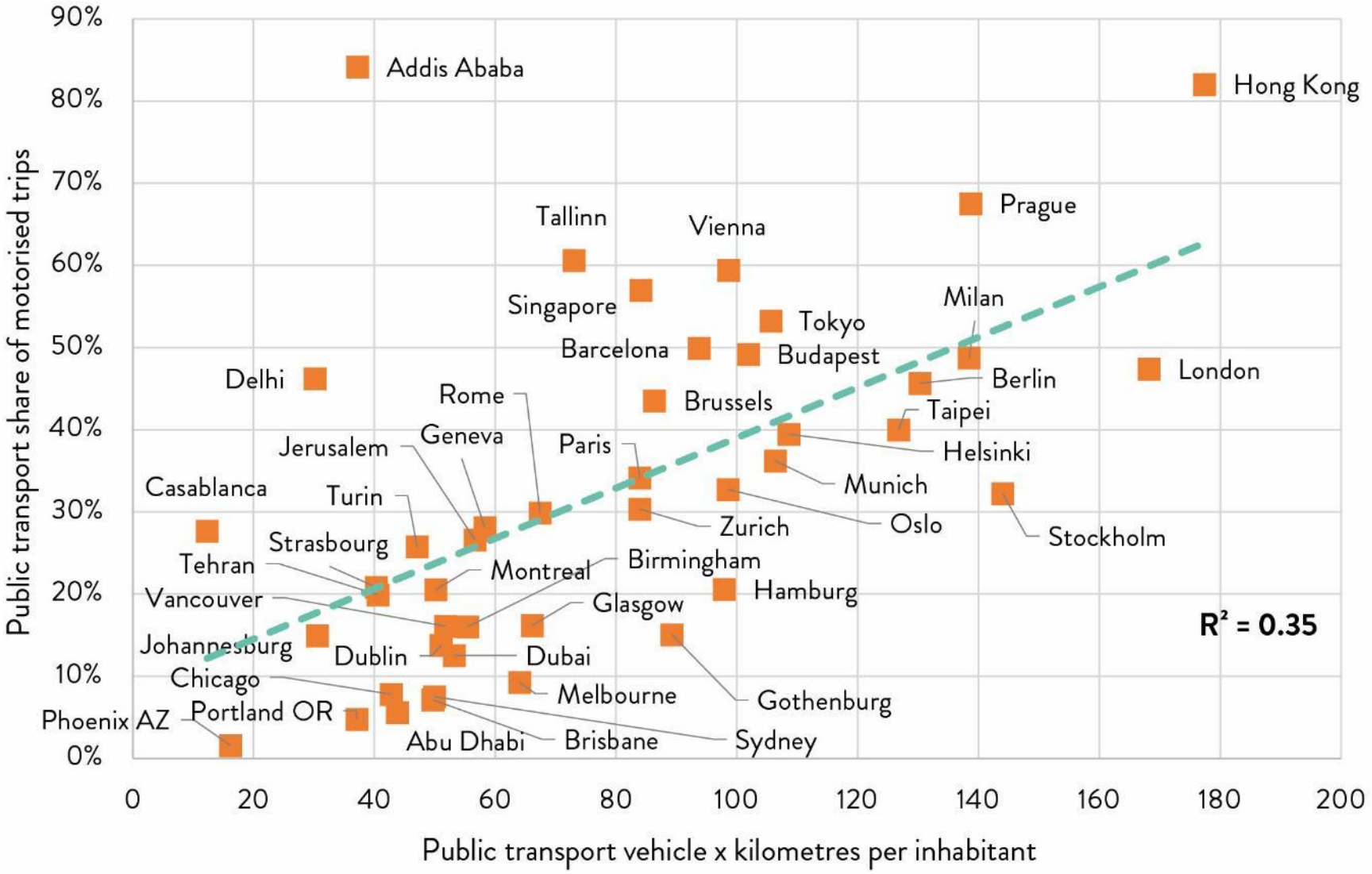
MOBILITY BEHAVIOUR (1)



MOBILITY BEHAVIOUR (2)

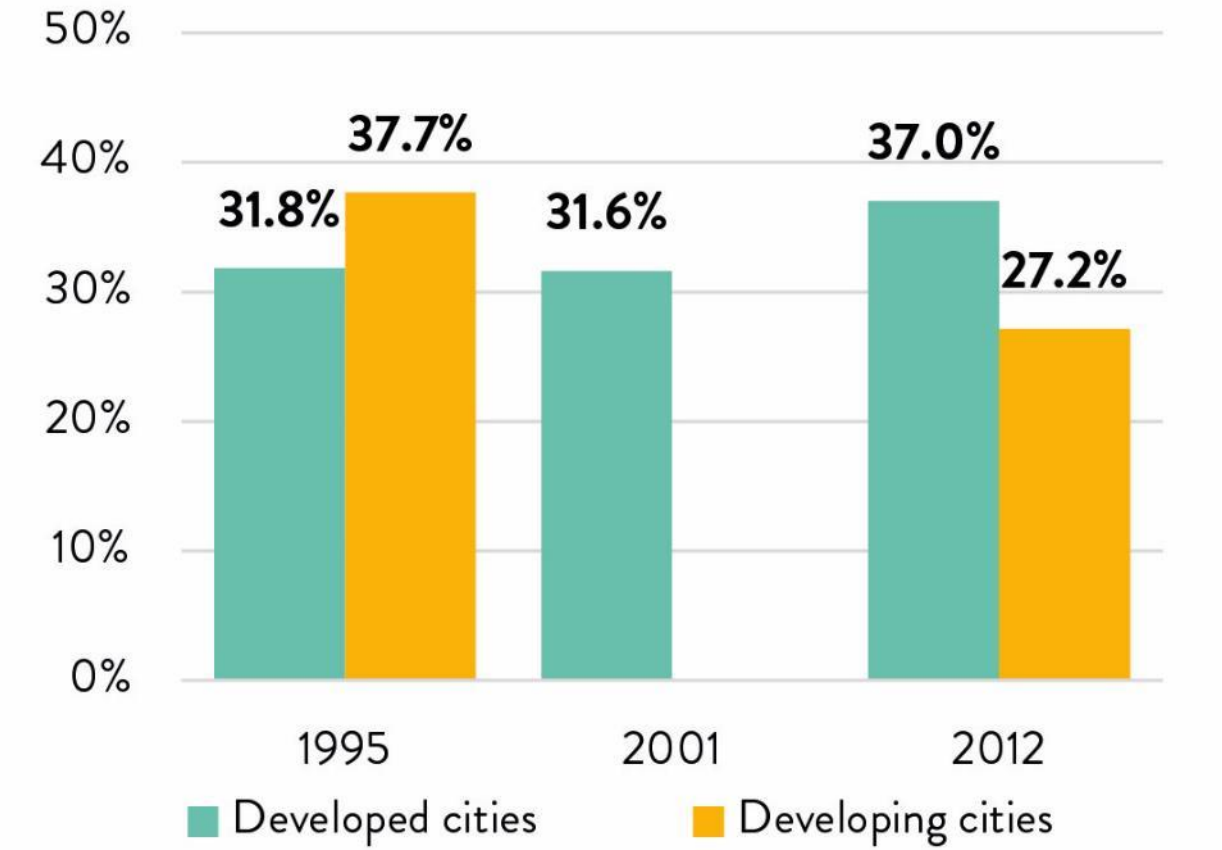


MOBILITY BEHAVIOUR (3)



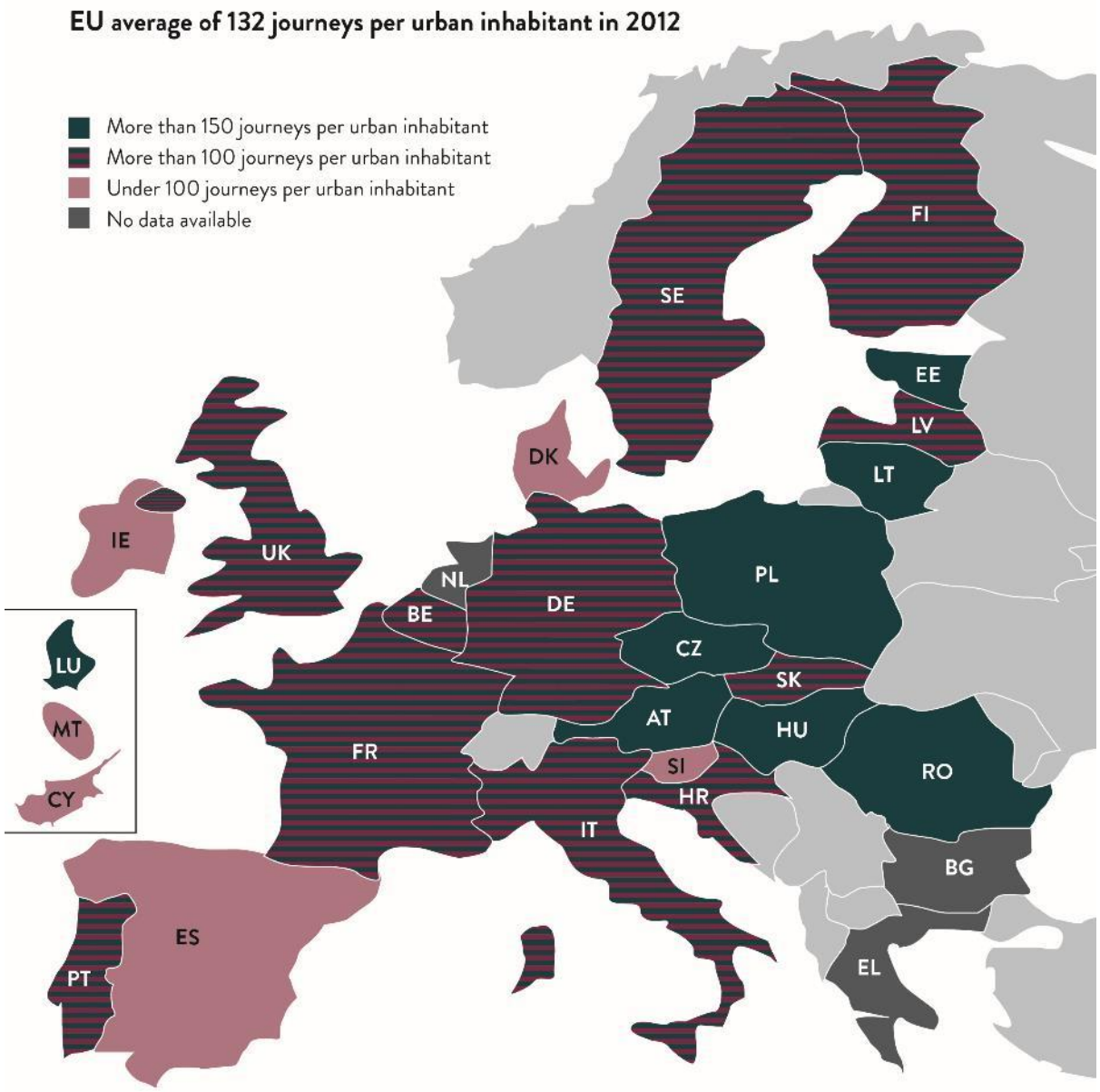
TRENDS AND TRAJECTORIES (4)

Modal share of public transport is growing in developed cities, but falling in developing cities

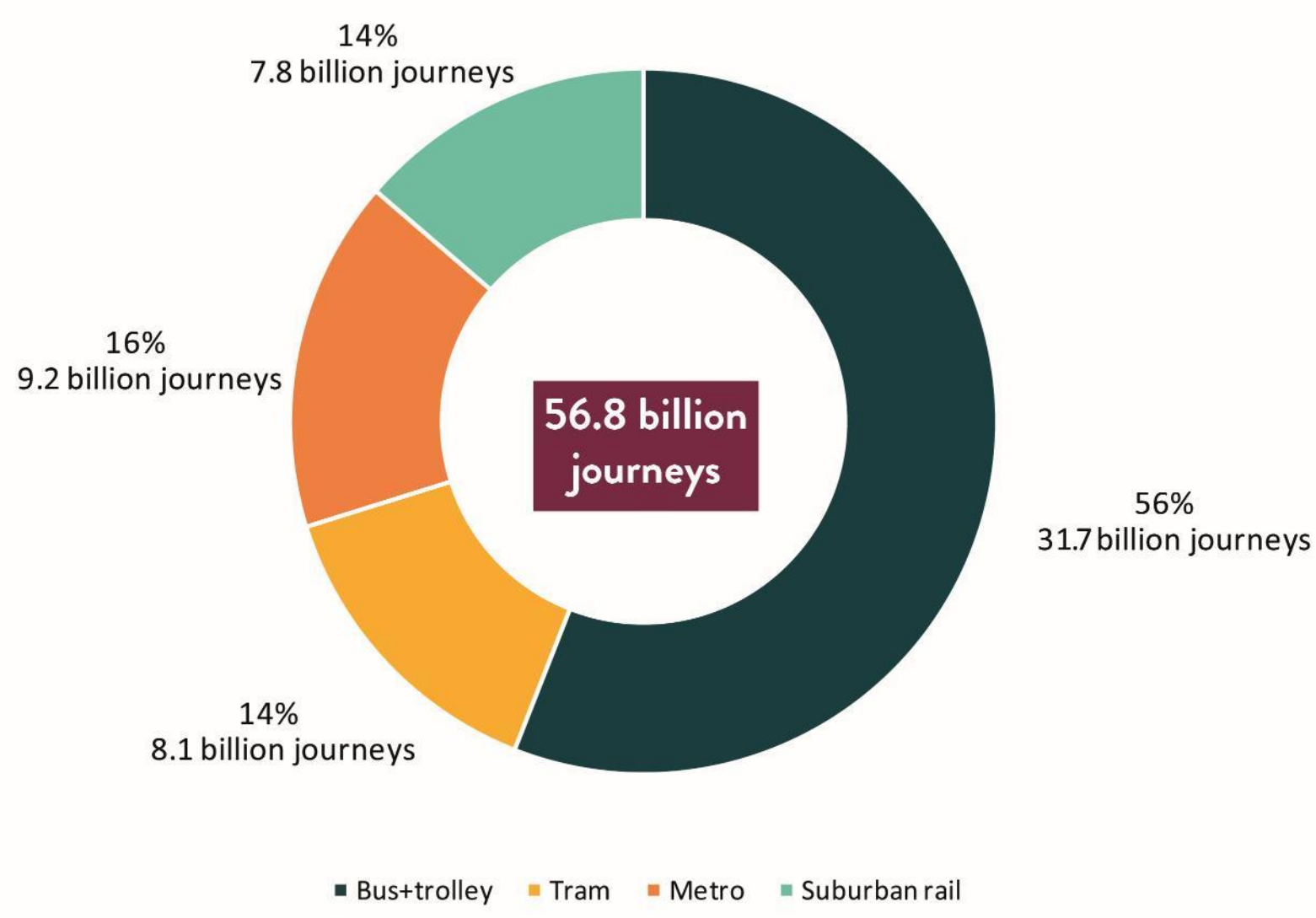


3 DEMAND FOR URBAN PUBLIC TRANSPORT IN THE EUROPEAN UNION

PUBLIC TRANSPORT IN THE EU



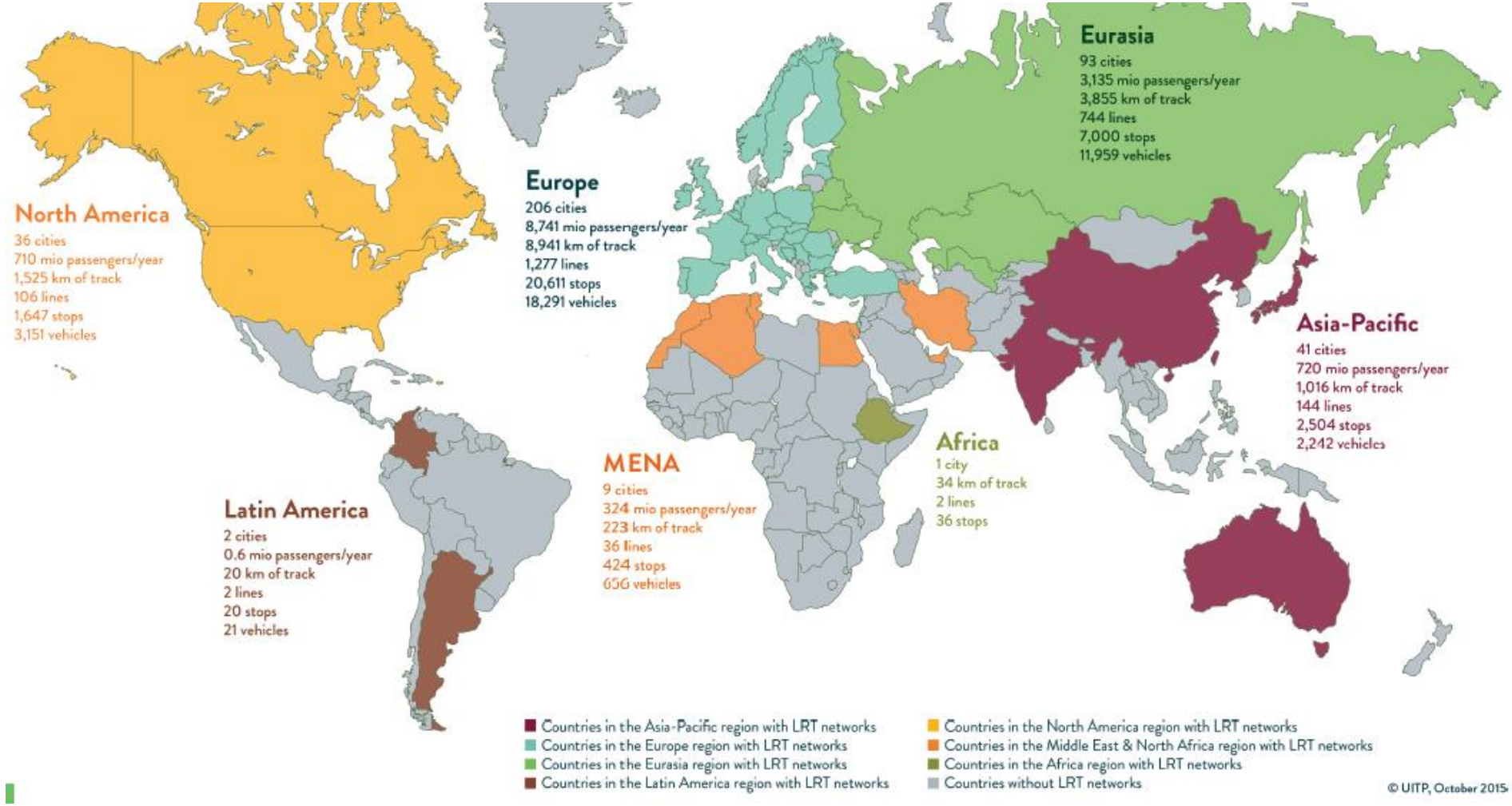
PUBLIC TRANSPORT IN THE EU



4 OVERVIEW OF PUBLIC TRANSPORT DATA PER MODE

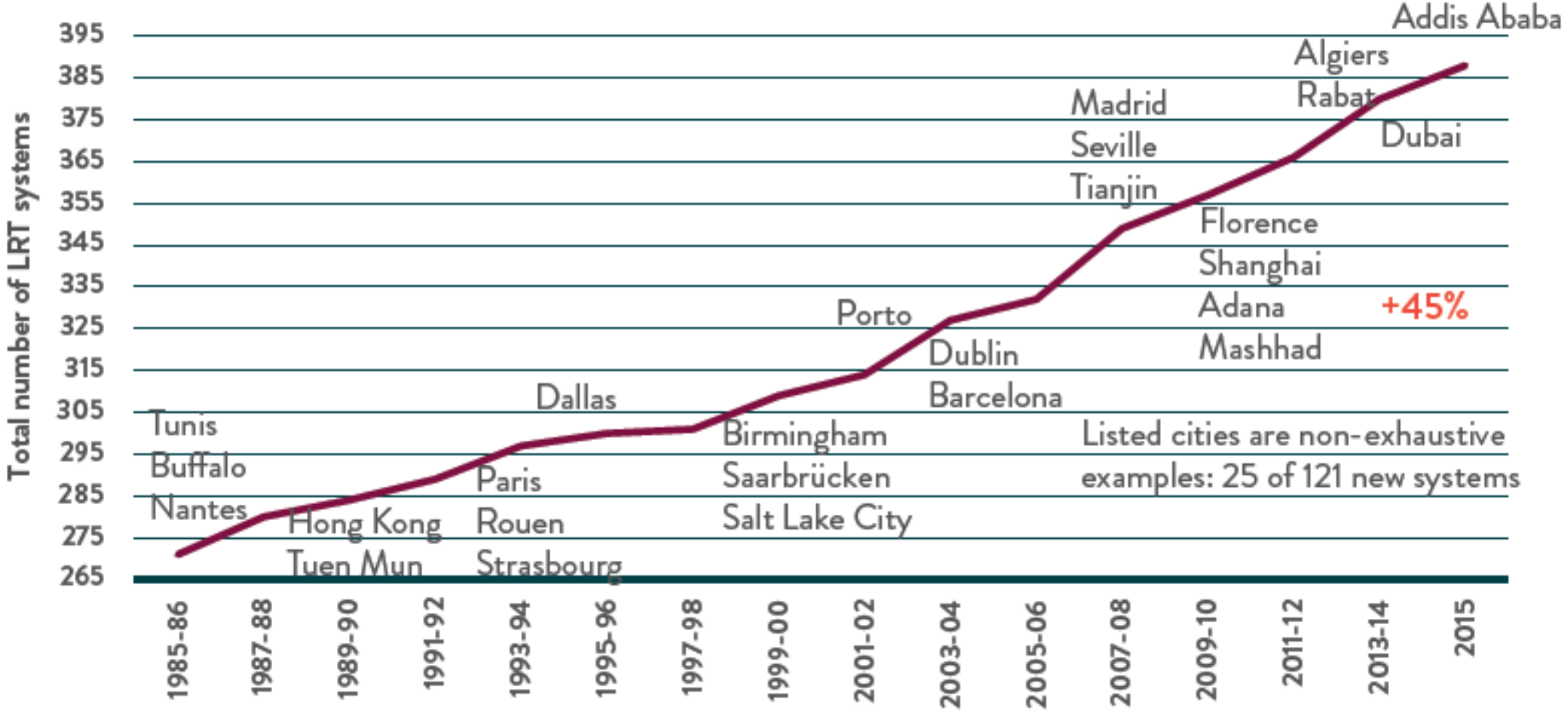
TRAMS AND LIGHT RAIL

388 systems in operation worldwide (2015)
2350 more km in planning and 850 km under construction (2015)



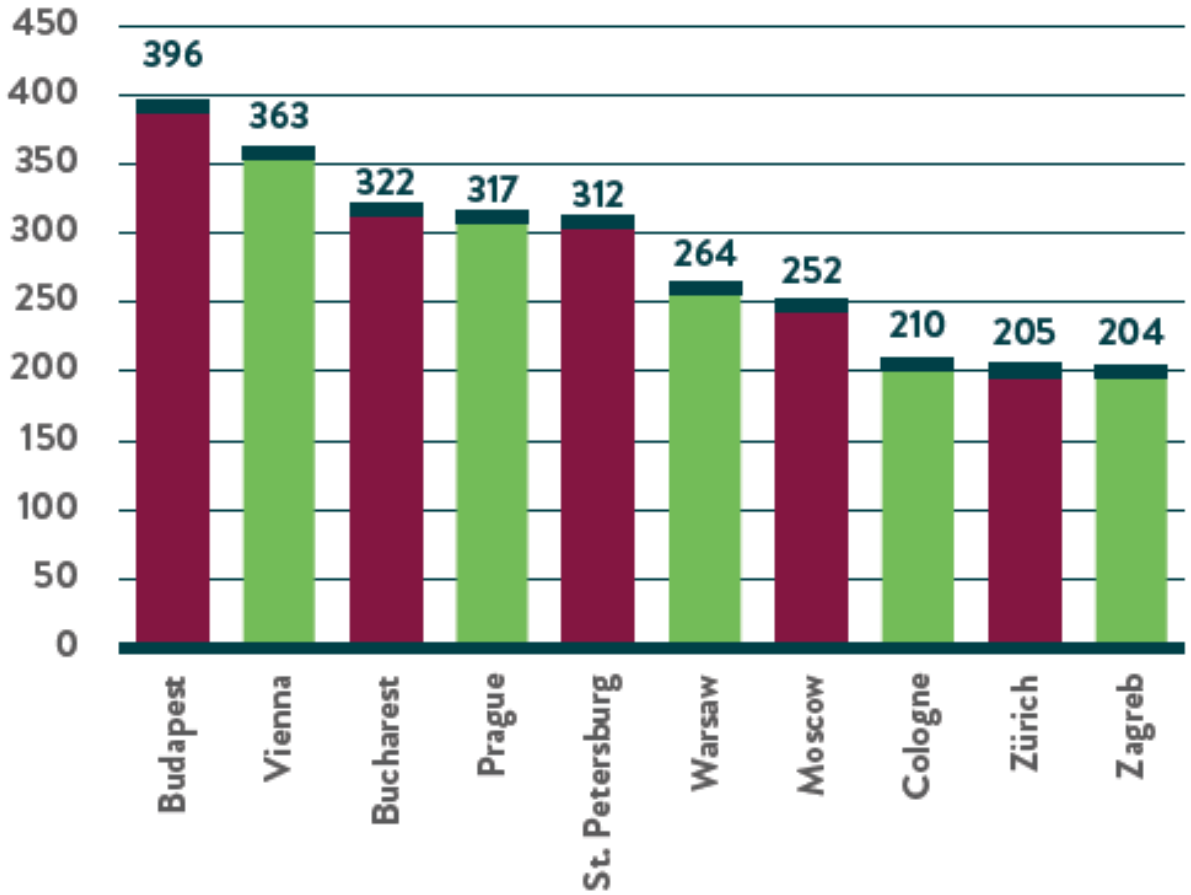
TRAMS AND LIGHT RAIL

42 new LRT systems opened between 1985 and 2000
78 new LRT systems opened between 2000 and 2015



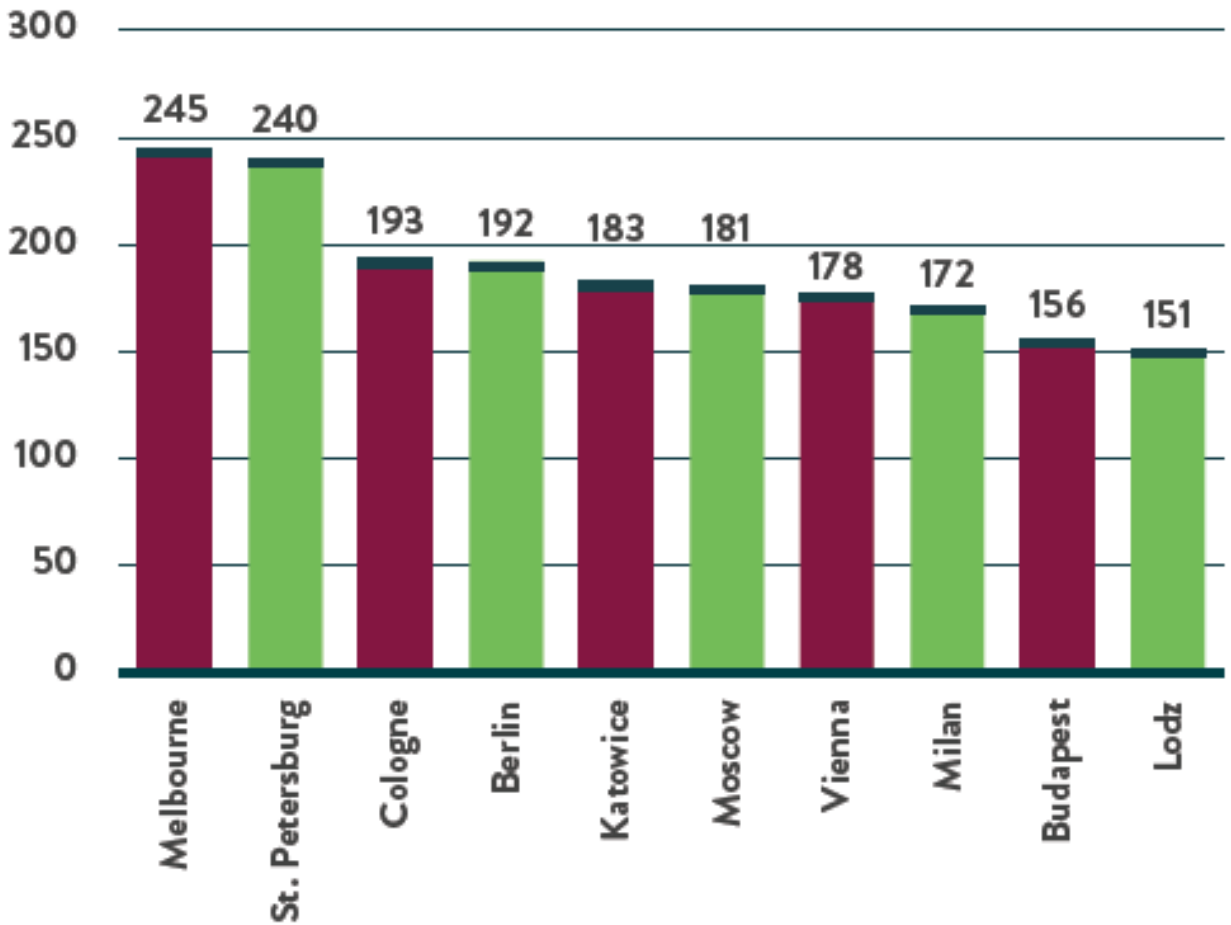
TRAMS AND LIGHT RAIL

LRT SYSTEMS WITH THE HIGHEST NUMBER OF ANNUAL PASSENGERS (MILLIONS)



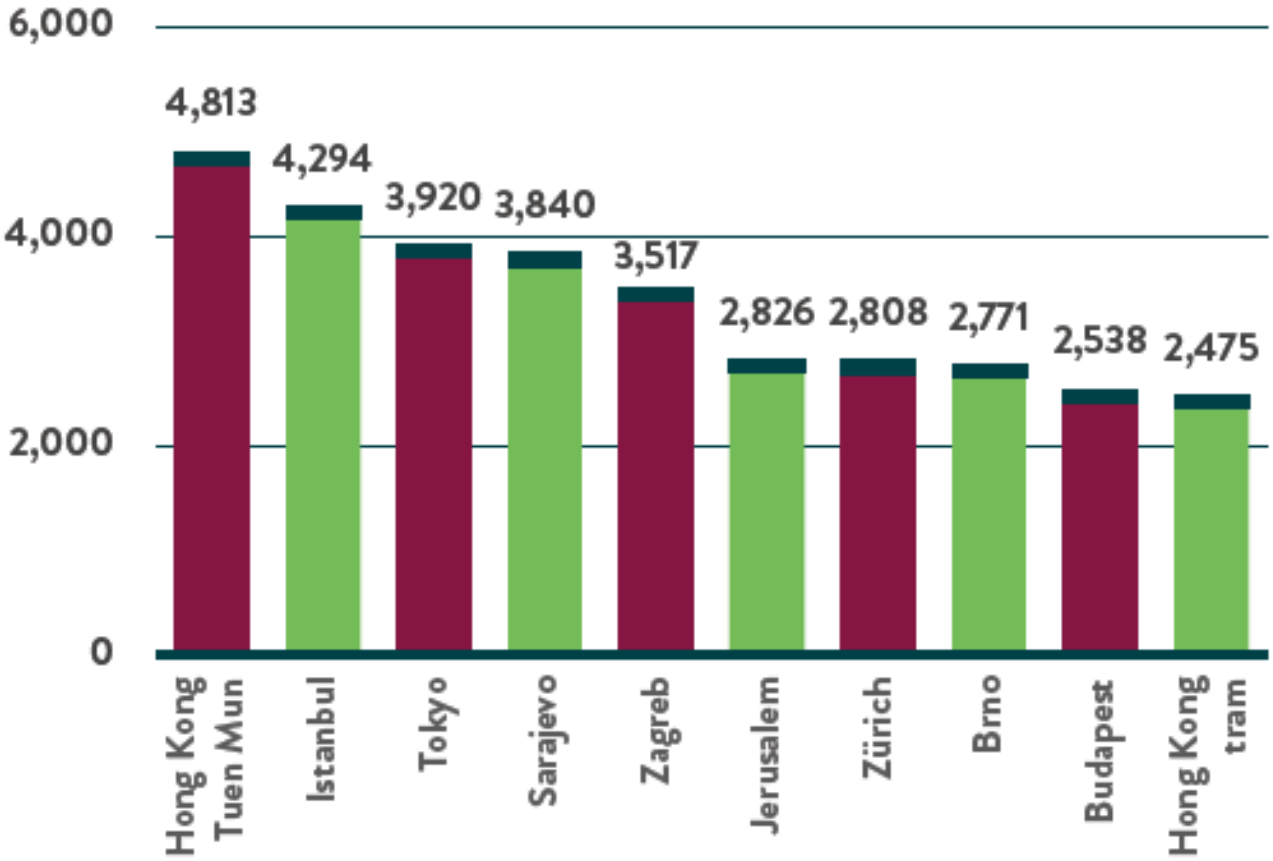
TRAMS AND LIGHT RAIL

LONGEST LRT NETWORKS (KM OF TRACK)



TRAMS AND LIGHT RAIL

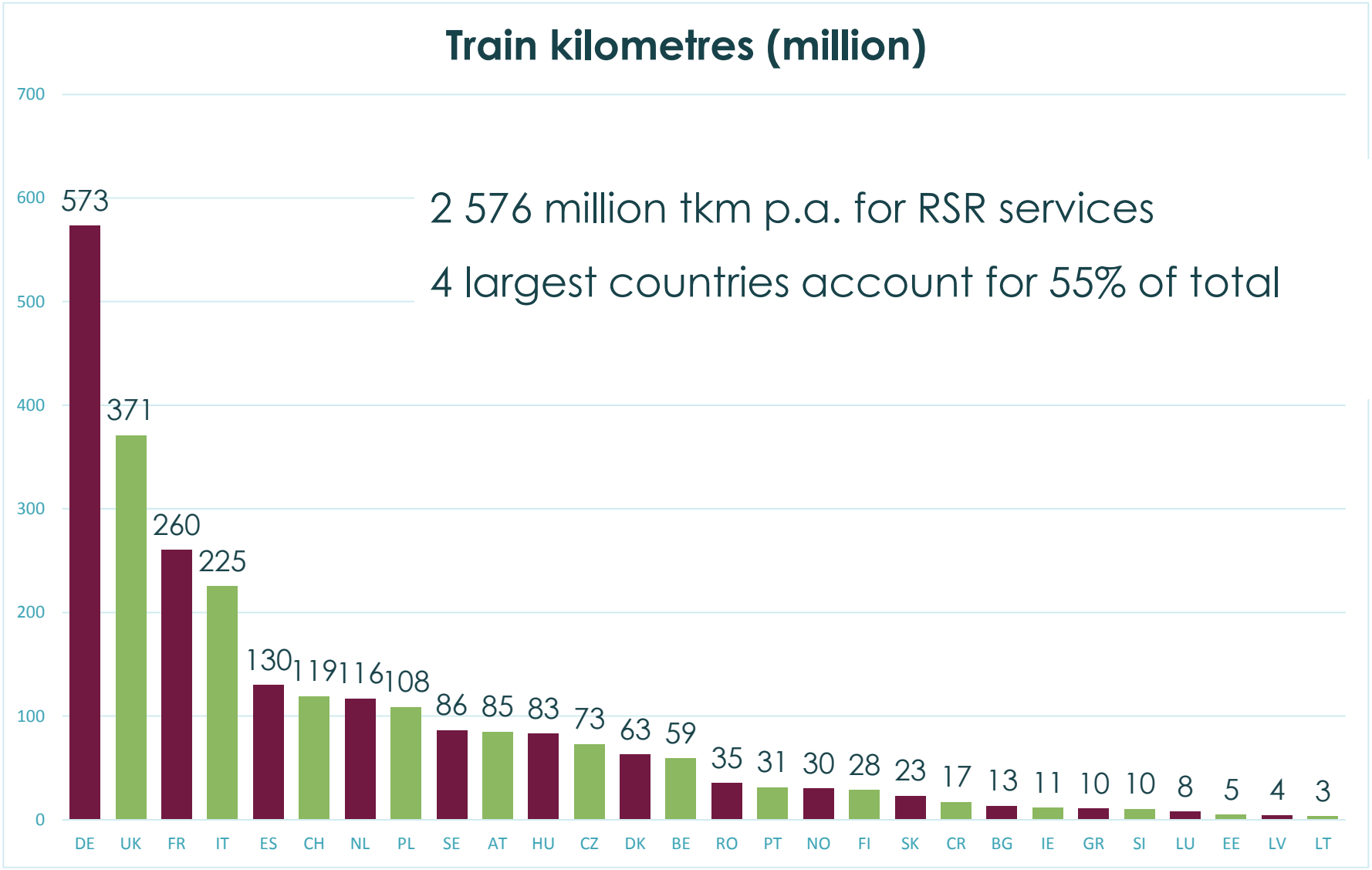
BUSIEST LRT NETWORKS (THOUSANDS OF ANNUAL PASSENGERS PER KM OF TRACK)



REGIONAL & SUBURBAN RAIL

- **Regional and Suburban Railways are passenger services in and around conurbations and regions.**
- **Such services are mostly organised along Public Service Obligation (PSO) arrangements, generally contracted by an infra-national government level (Region, Land, Province, Canton, Voivodeship…)**
- **The services typically feature the following characteristics:**
  - Average distance between stations : 1-25 km
  - Commercial speed : 40-60 km/h
  - Typical one-way passenger trip time : <1 hour
  - A high proportion of staffless stations : >50%
  - Regional railways can run (partially) on single track

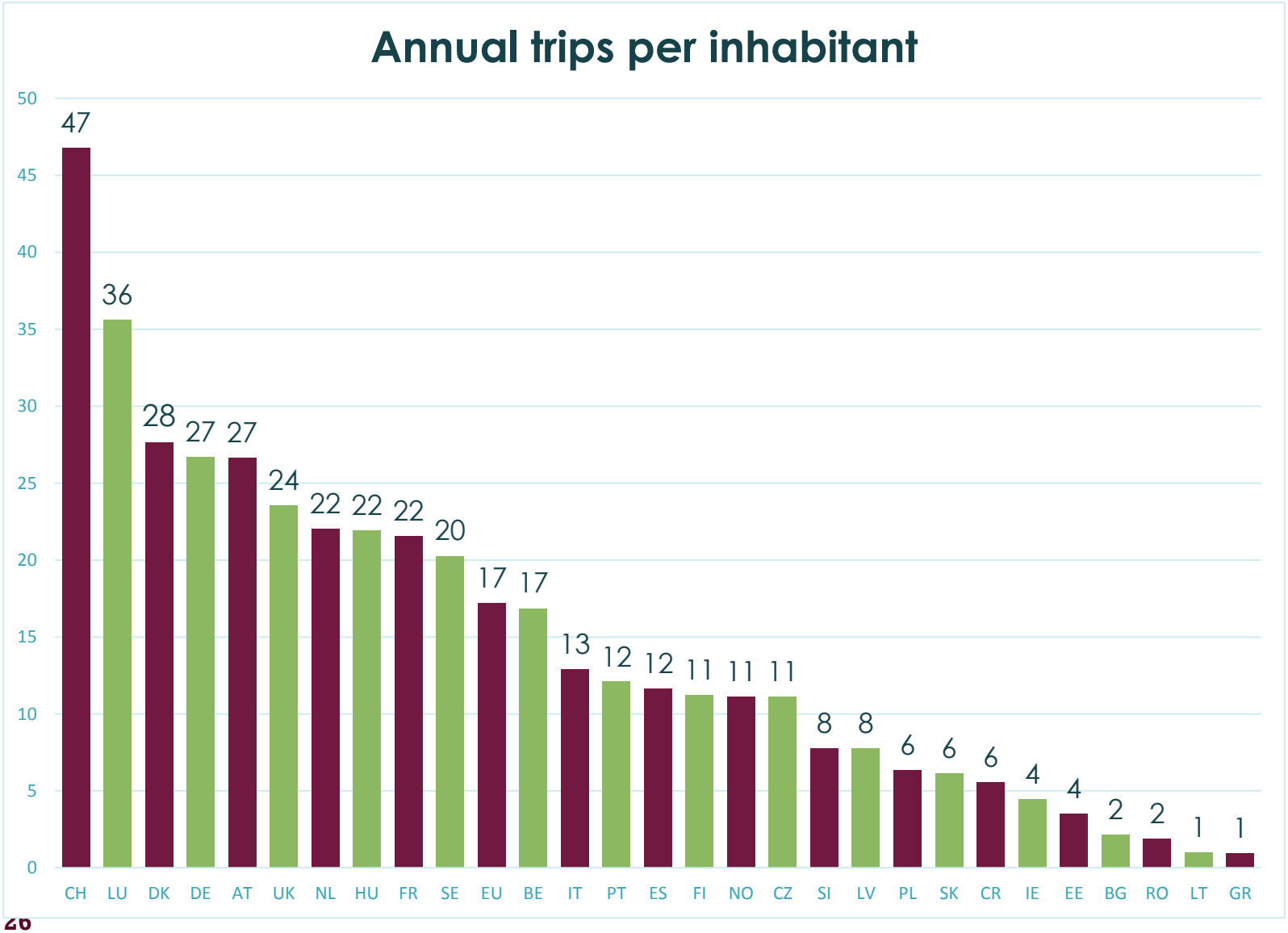
REGIONAL & SUBURBAN RAIL



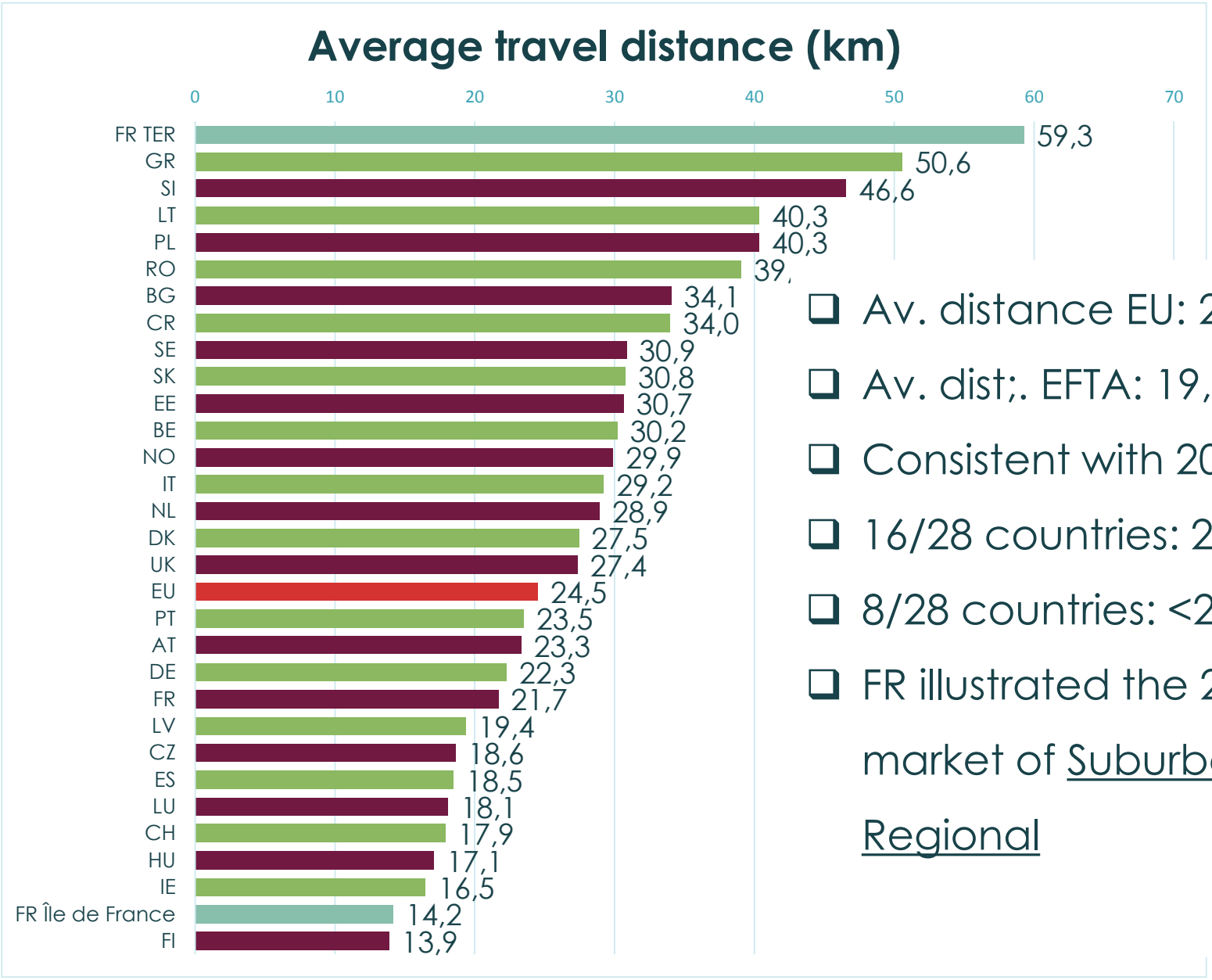
2 576 million tkm p.a. for RSR services

4 largest countries account for 55% of total

REGIONAL & SUBURBAN RAIL



REGIONAL & SUBURBAN RAIL



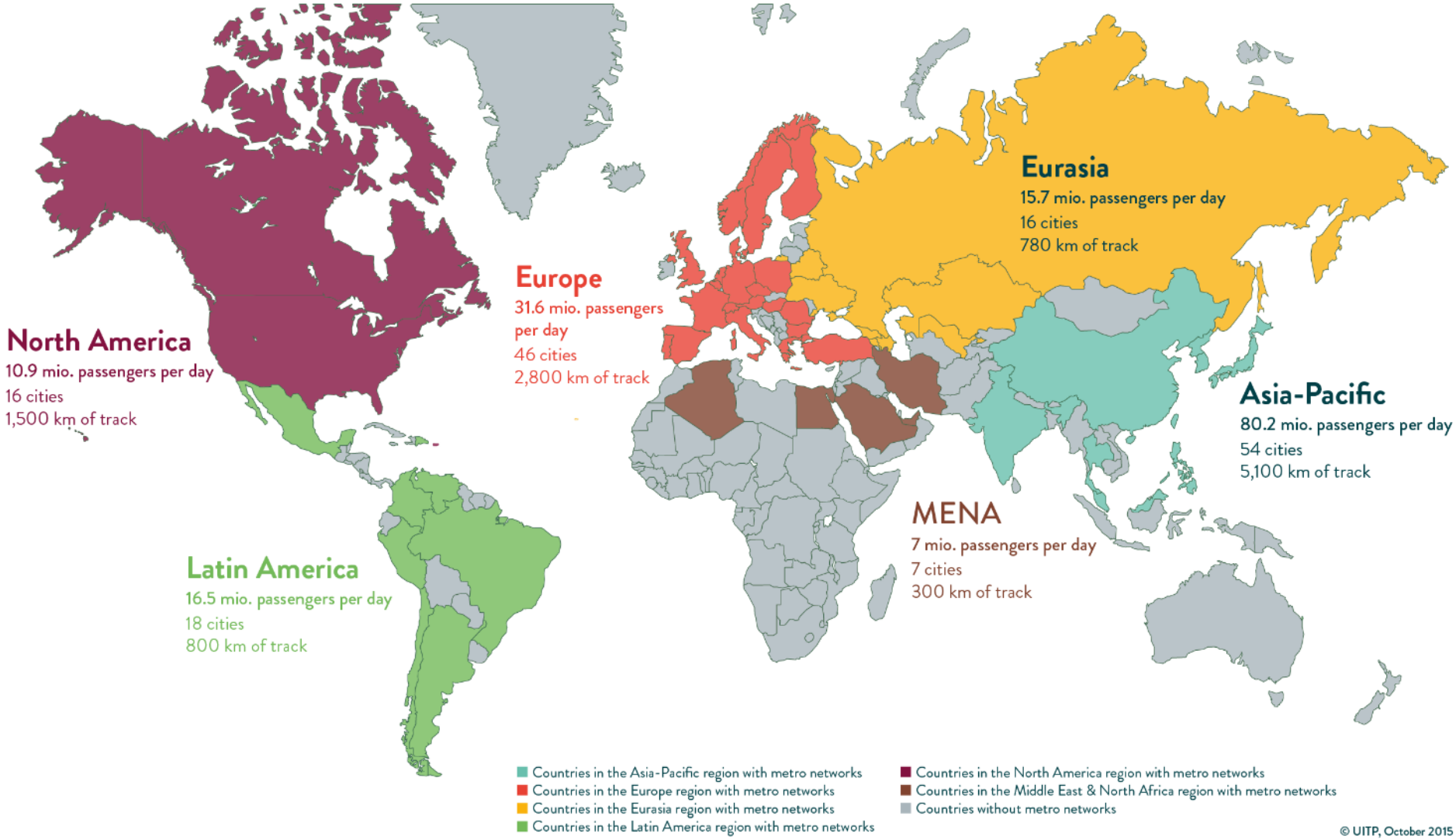
- Av. distance EU: 24.5 km
- Av. dist;. EFTA: 19,5 km
- Consistent with 2005
- 16/28 countries: 20-40 km
- 8/28 countries: <20 km
- FR illustrated the 2 segment market of Suburban / Regional

REGIONAL & SUBURBAN RAIL

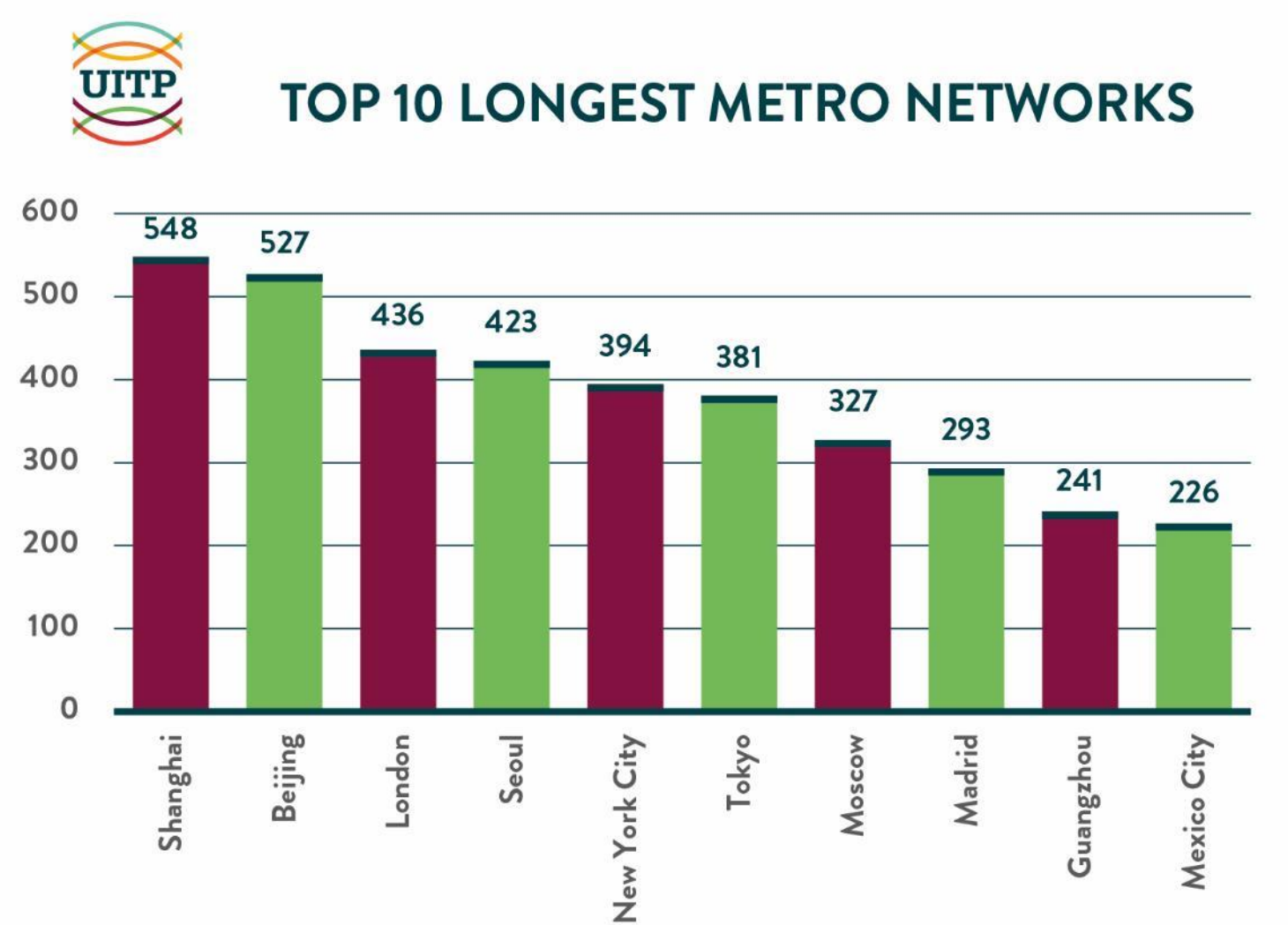
- 10 times more passengers than airlines in Europe
- Greater Paris = 83% of France total patronage
- Greater London : 70% of total UK patronage
- Growth countries: FR +15%, DE +23%, BE +44% and UK +98%
- Decrease: ES -15%, P -12%
- Confirms primary function of RSR: commuting

METROS

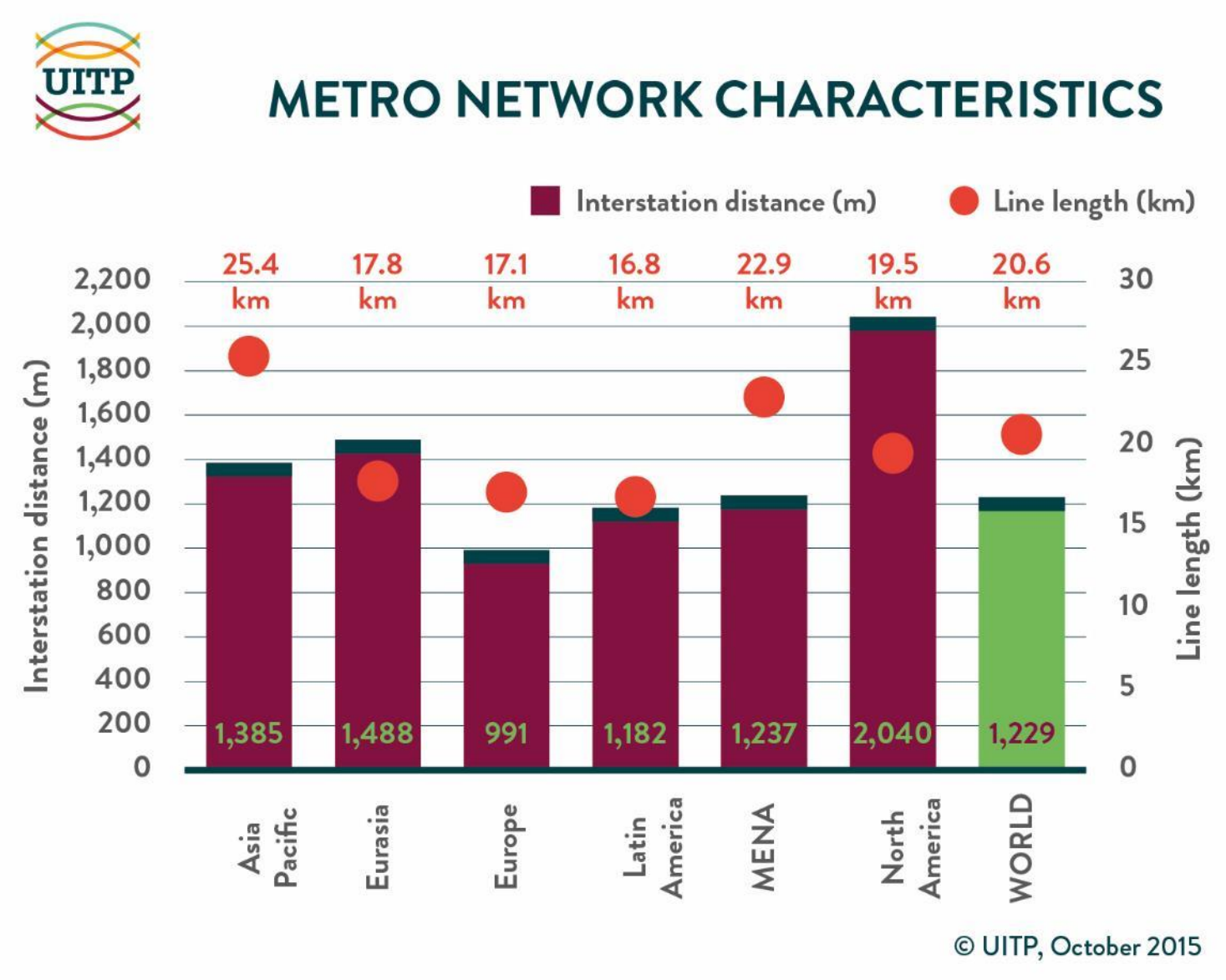
156 systems in operation worldwide (2014)
4 systems inaugurated in 2015 and 2,700 km under construction



METROS



METROS


METRO NETWORK CHARACTERISTICS
Interstation distance (m)
Line length (km)
25.4 km
17.8 km
17.1 km
16.8 km
22.9 km
19.5 km
20.6 km
2,200
2,000
1,800
1,600
1,400
1,200
1,000
800
600
400
200
0
30
25
20
15
10
5
0
1,385
1,488
991
1,182
1,237
2,040
1,229
Asia Pacific
Eurasia
Europe
Latin America
MENA
North America
WORLD
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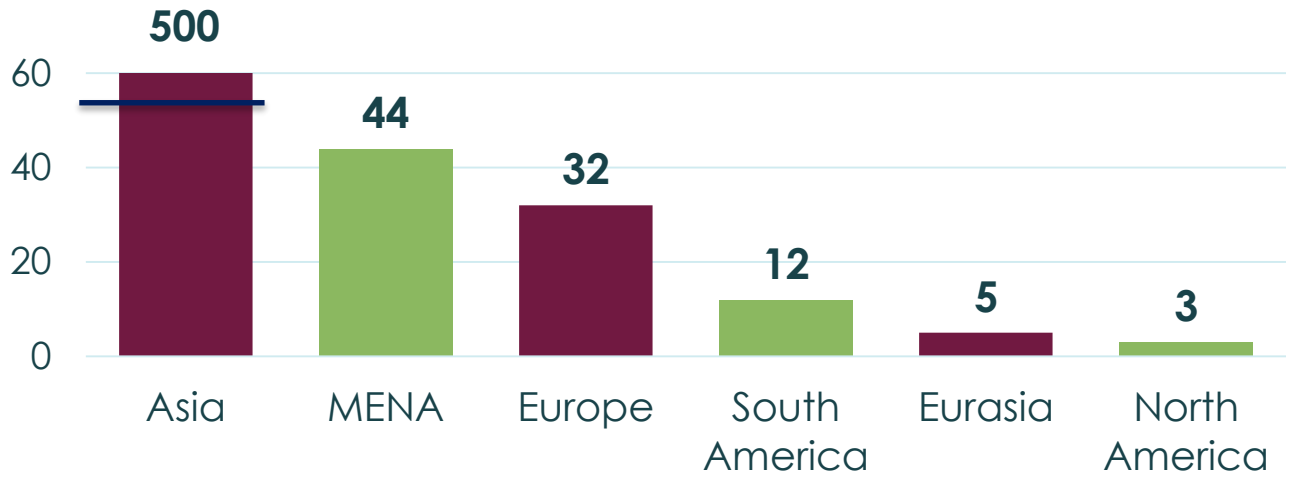
METROS – EVOLUTION

- 596 km of new metro infrastructure opened in 2015
- 34% extensions of existing lines
- 66% new lines
- 23 countries



- 236 km opened in 2014

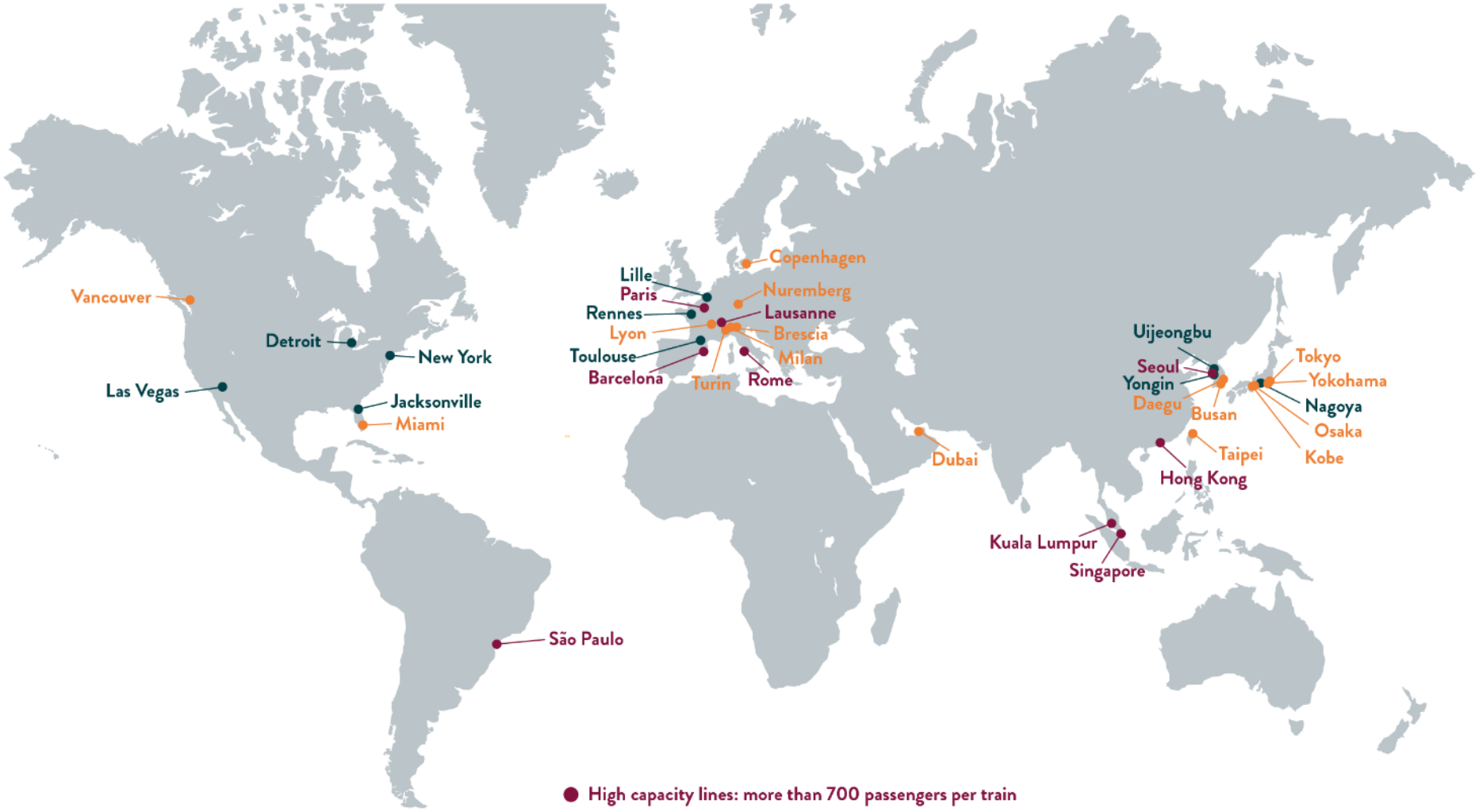
METROS
INNOVATION – AUTOMATION

Grade of Automation	Type of train operation	Setting train in motion	Stopping train	Door closure	Operation in event of disruption
GoA1 	ATP* with driver	Driver	Driver	Driver	Driver
GoA2 	ATP and ATO* with driver	Automatic	Automatic	Driver	Driver
GoA3 	Driverless	Automatic	Automatic	Train attendant	Train attendant
GoA4 	UTO	Automatic	Automatic	Automatic	Automatic

ATP – Automatic Train Protection

ATO – Automatic Train Operation

METRO AUTOMATION



METRO AUTOMATION TRENDS

Systems opened since 2006:

Track protection

- 85% Platform Screen Doors
- 15% other intrusion detection system

Train capacity

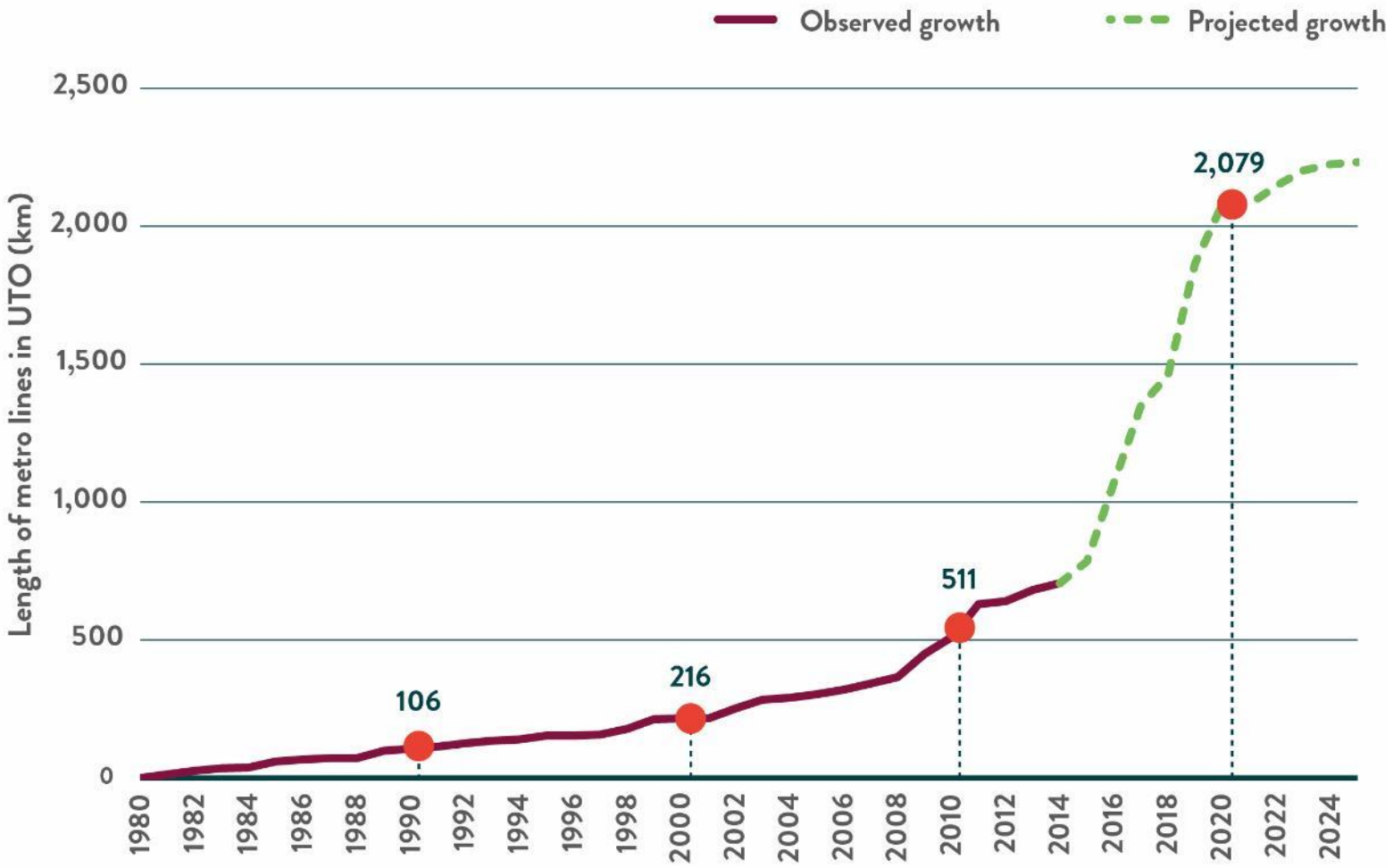
- 29% high – more than 700 passengers per train
- 61% medium – 300-700 passengers per train
- 10% low – under 300 passengers per train

Signalling

- 72% of new systems use one form of CBTC

METRO AUTOMATION TRENDS

Over 2200 km of automated metro by 2025

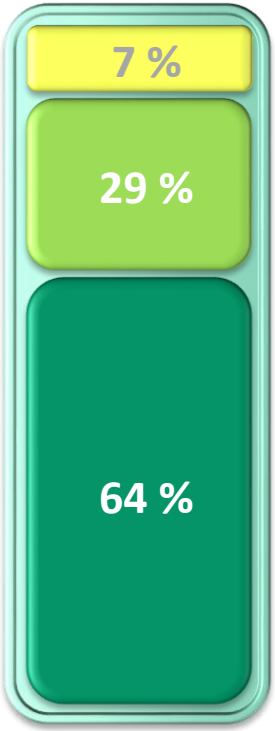


UITP

METRO AUTOMATION TRENDS

MENA and Asia Pacific regions will lead this growth

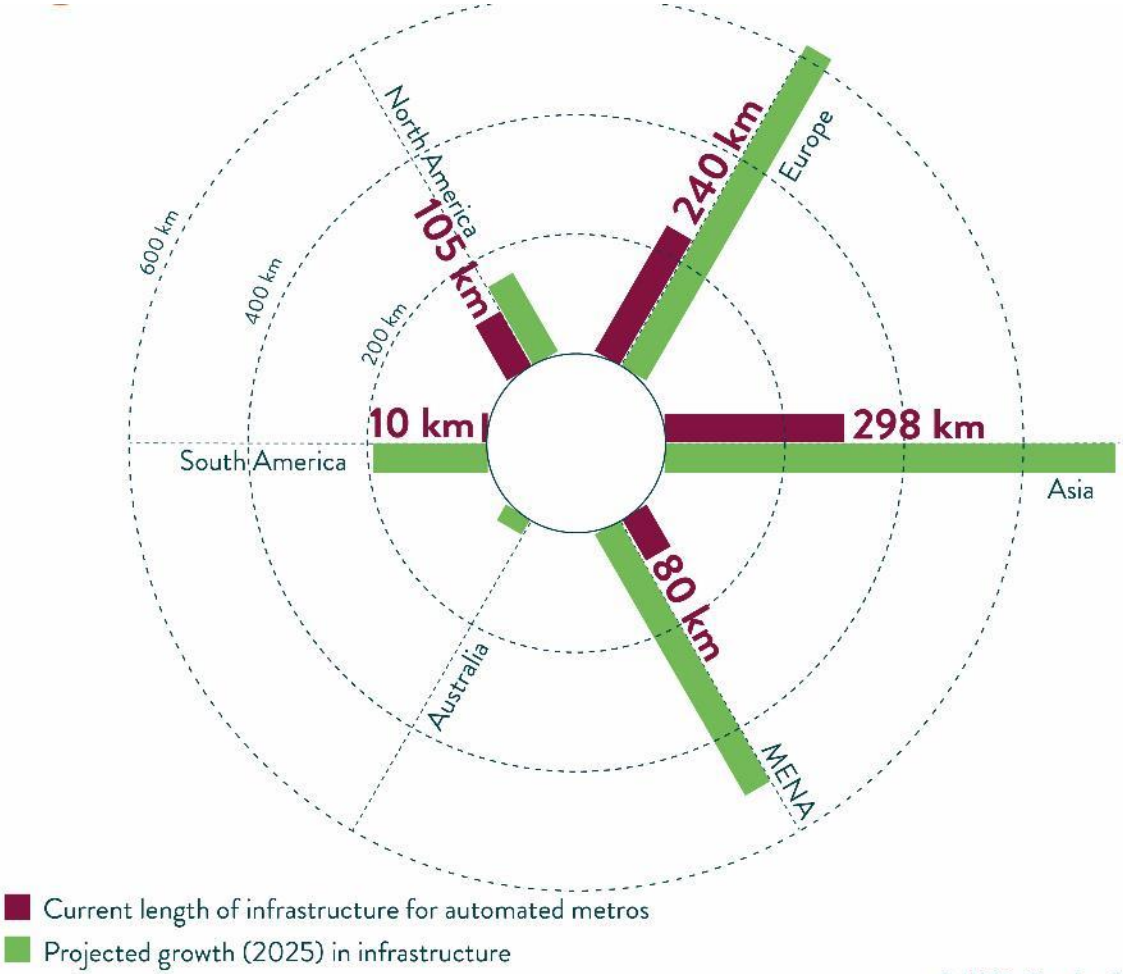
- 90% of the growth expected in new lines and extensions



Conversions

Extensions

New Lines



THANK YOU FOR YOUR ATTENTION

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