

Road User Charging Global Overview 2010 – 2020

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Objectives

- ✓ Give an overview of the RUC market for years 2010-2020
- ✓ Describe market drivers
- ✓ Identify the global ETC market
- ✓ Identify and describe key market players
- ✓ Describe technology being deployed as of today and trends going forward.

Definitions

- ✓ Road User Charging (RUC) embraces all policies that charge for road space tolling including ETC (Electronic Toll Collection), CC (Congestion Charging), MTC (Manual Toll Collection), and ERI (Electronic Registration Identification)
- ✓ The purpose of RUC is to fund the development, operation and maintenance of new infrastructure, reduce traffic congestion, and improve the environment
- ✓ ERI uniquely identifies road vehicles through the use of tags and roadside communications units. Tags can be programmed to store a variety of information to improve security and enable easy roadside inspection, among other benefits.

Market Drivers

Road toll pricing schemes have been applied in practice worldwide. Road pricing main drivers are:

- ✓ Generate revenues for funding transport investment, operations and maintenance costs
- ✓ Manage travel demand, congestion and other externalities, and
- ✓ Promote a greener and safer environment

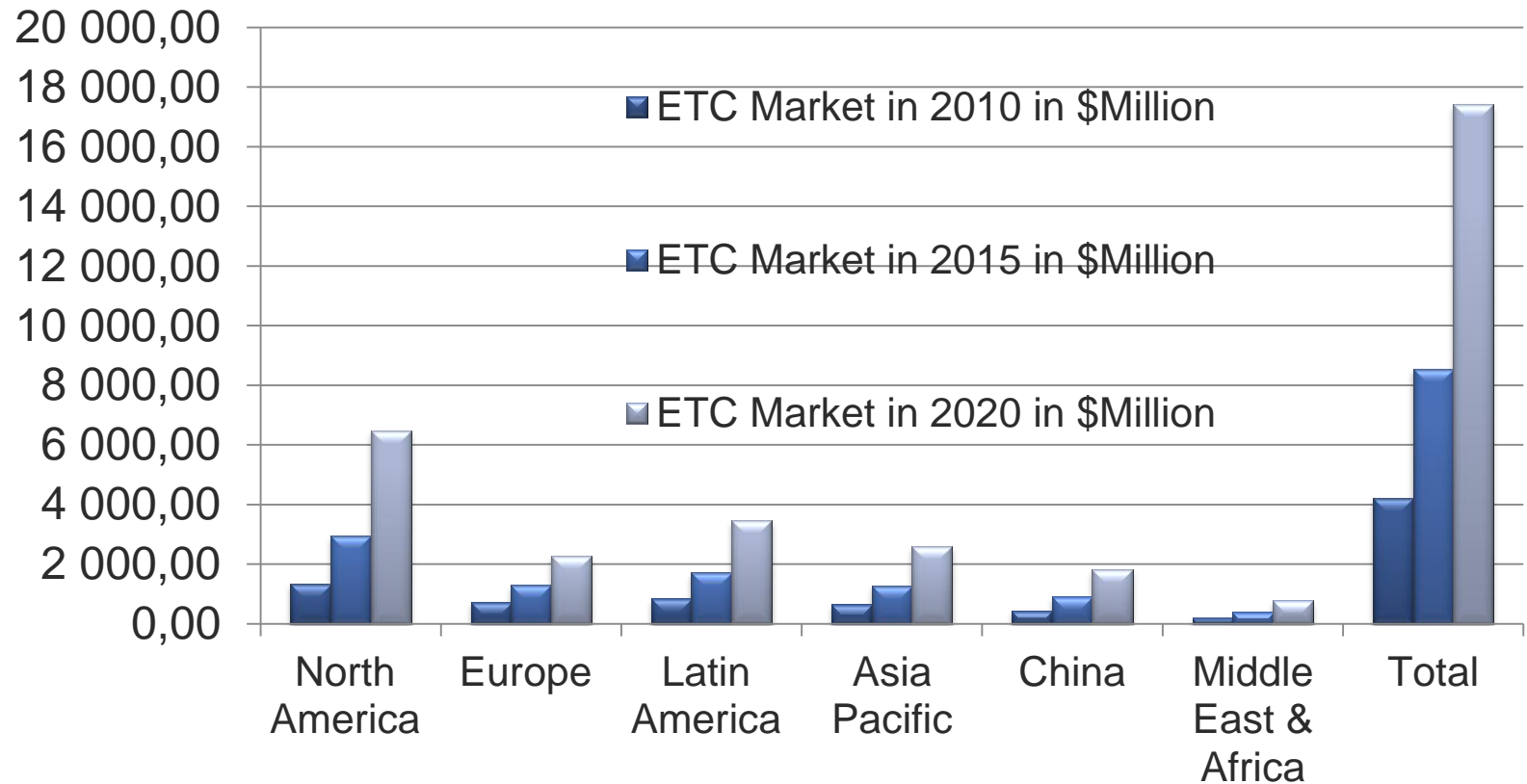
Global RUC Industry

- ✓ The market for Electronic Toll Collection systems is very attractive—global market is large (approximately \$126B in 2010) and growing (expected growth of 5-20%)
- ✓ The global ETC industry is moving ahead at a significant growth rate
- ✓ Europe, North America, Latin America and Asia Pacific are the major markets for ETC technologies
- ✓ Toll operators across these markets continue to convert existing tolling roads to ETC systems
- ✓ Various governments are focusing on employing ETC as an effective means to reduce traffic congestion and vehicular emissions and financing of infrastructure.

Global RUC Industry in 2010 by Market Segment

	Transponders, Readers, Hardware Systems	System Integration	Maintenance	<u>Total</u>
North America	\$408M	\$825M	\$115M	\$1,348M 5-17% CAGR
Europe	\$276M	\$391M	\$69M	\$736M 8-12% CAGR
Latin America	\$280M	\$485M	\$90M	\$855M 10-15% CAGR
Asia Pacific	\$210M	\$362.5M	\$67M	\$639.5M 10-15% CAGR
China	\$147M	\$253.75M	\$46.9M	\$447.65M 10-15% CAGR
Middle East & Africa	\$65M	\$108.75M	\$20.1M	\$193.85M 10-15% CAGR
<u>Total</u>	\$1,386M 5-10% CAGR	\$2,426M 10-15% CAGR	\$408M 4-8% CAGR	\$4,220M 7-13% CAGR

Global ETC Industry in 2010-2020 by Region



Observations

- ✓ System integrations will continue to be one of the fastest growing segments driven by upgrades and Greenfield facilities
- ✓ Most new Greenfield facilities are expected to be ETC
- ✓ Back-office segment represents 40% of the annual spend but is lower growth than system integration
- ✓ ETC annual market size internationally is \$4,220M in 2010 and is driven by upgrades of large installed base of non-ETC lanes and a greater acceptance of tolling projects

North America Market 2010 – 2020

- ✓ Currently there are over 88% of proprietary transponder technology. However, the market is opening up to services including back office, video tolling, etc.
- ✓ In the next 2-3 years there are over 15 American Agencies changing their transponder technology
- ✓ The deployment of electronic toll collection systems by toll agencies is over 98% in North America (see next chart)

Key Market Suppliers and System Integrators

Company	Supplier	System Integrator	Region	Application		
				MLFF	TT	CC
ACS		✓	US	✓		
Continental	✓	✓	Europe		✓	
CS Group		✓	Europe			
Efkon A.G.	✓	✓	Europe, Asia	✓	✓	
Federal Signal	✓		US			
IBM		✓	Europe			✓
Kapsch TraffiCom	✓	✓	All regions	✓	✓	
Mitsubishi	✓	✓	Asia	✓		
Q-Free ASA	✓	✓	All regions	✓	✓	✓
Siemens	✓	✓	Europe		✓	
Tecsidel		✓	Europe, Latin America	✓		
Thales		✓	Europe	✓		
Transcore	✓	✓	US, Latin America, Asia	✓		

Key Market Operators and Concessionaires

Company	Operator	Concessionaires
Abertis	✓	
Atlantia/ Autostrade per L'Italia	✓	
Ascendi	✓	
ASFINAG	✓	✓
Brisa	✓	
Cintra	✓	
Eiffarie/ APRR	✓	✓
Kapsch TraffiCom A.G.	✓	
Transcore Holdings	✓	

Future Applications

Electronic Law Enforcement

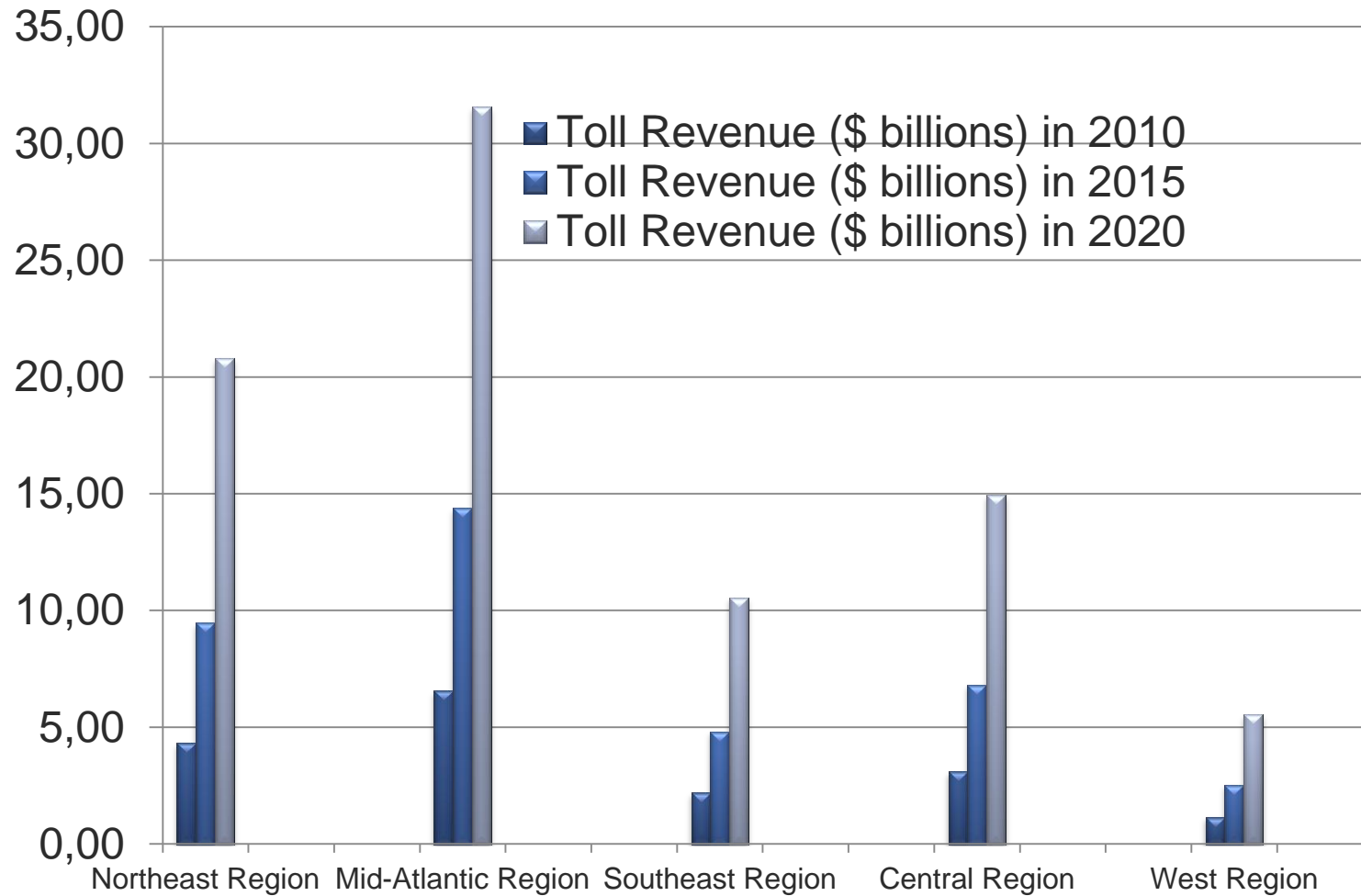
- ✓ ELE enables easy deployment of Electronic Law and enforcement systems
- ✓ ERI helps authorities to control parameters such as:
 - ✓ vehicle tax payment
 - ✓ insurance payment
 - ✓ ownership of the vehicle and
 - ✓ Other parameters to regulate traffic
- ✓ ELE, if implemented on a national scale, can help to mitigate substantial problems with tax evasion and uninsured cars
- ✓ ELE solutions will gain popularity and contribute significantly to the markets' general growth in the years to come.

Summary

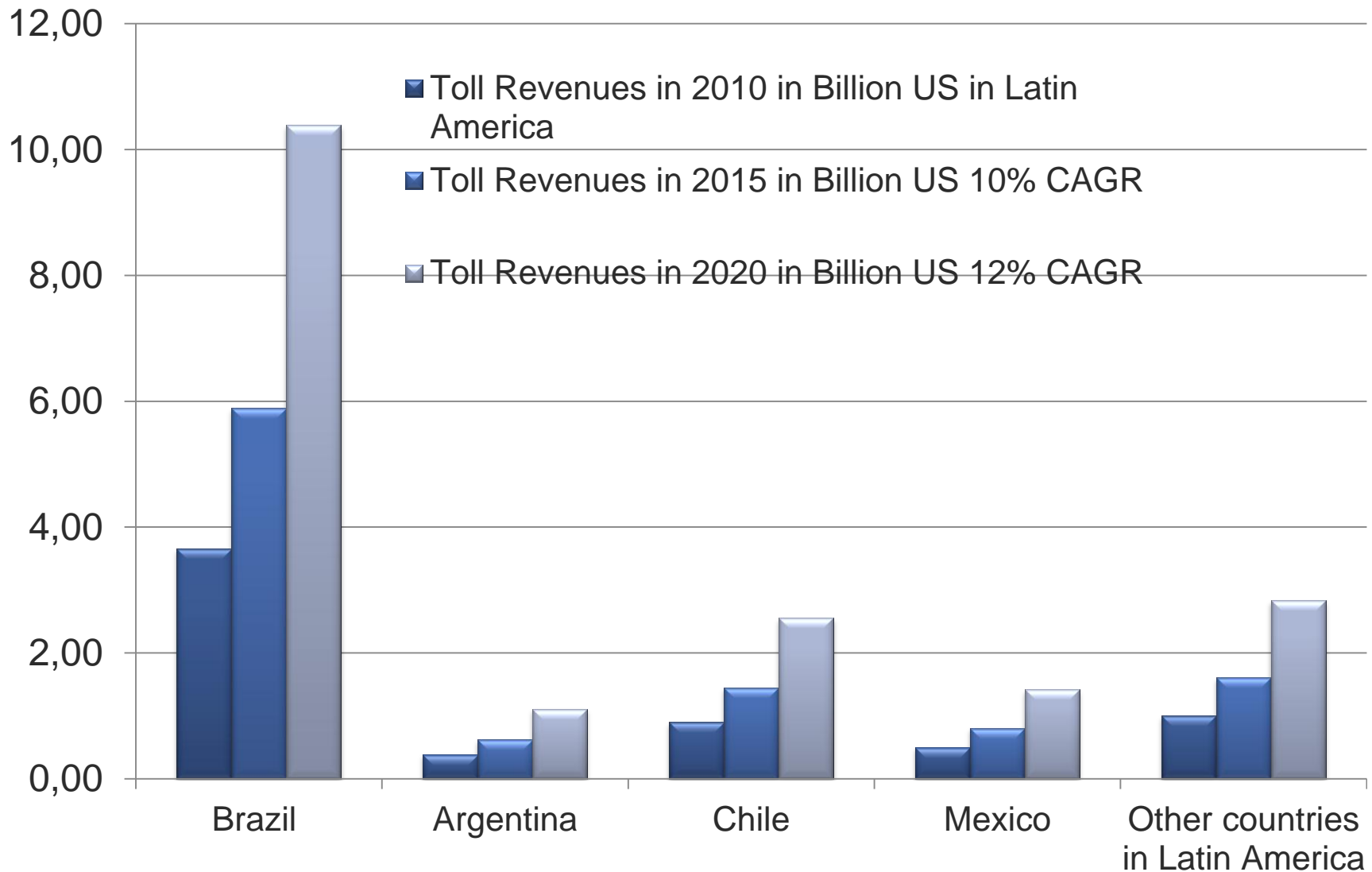
- ✓ Road Pricing heading towards Electronic Toll Collection
- ✓ ETC market is very interesting in the next 5-10 years
- ✓ Over \$125b in toll revenues have been raised in 2010 and the CAGR is expected to be 10% in 2020.
- ✓ The ETC Global industry exceeded \$4.2b in 2010 and is expected to exceed \$17b in 2020
- ✓ The next years will observe more ETC systems around the world.

Appendix

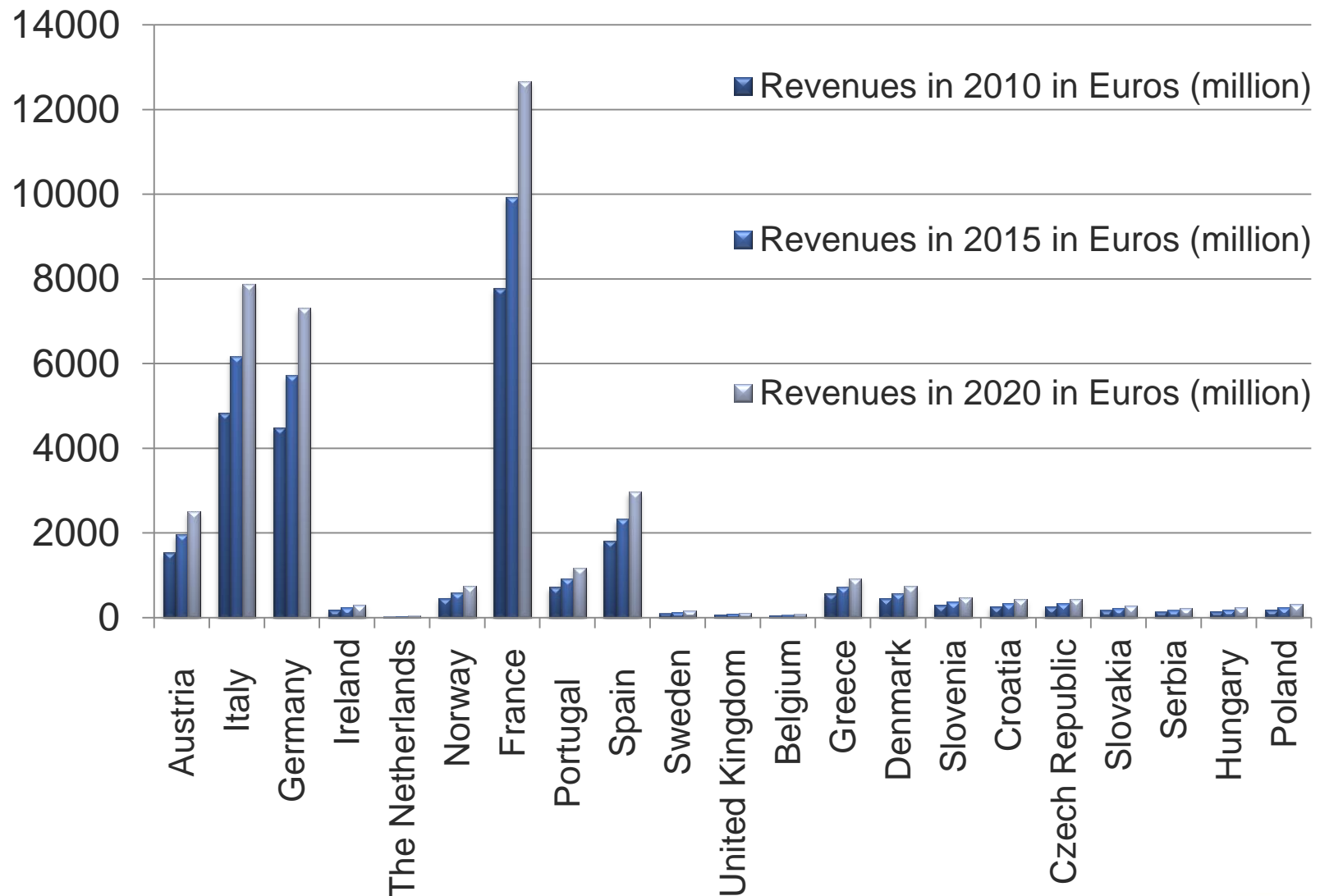
North America Toll Revenues by Region 2010 – 2020 at 17% CAGR



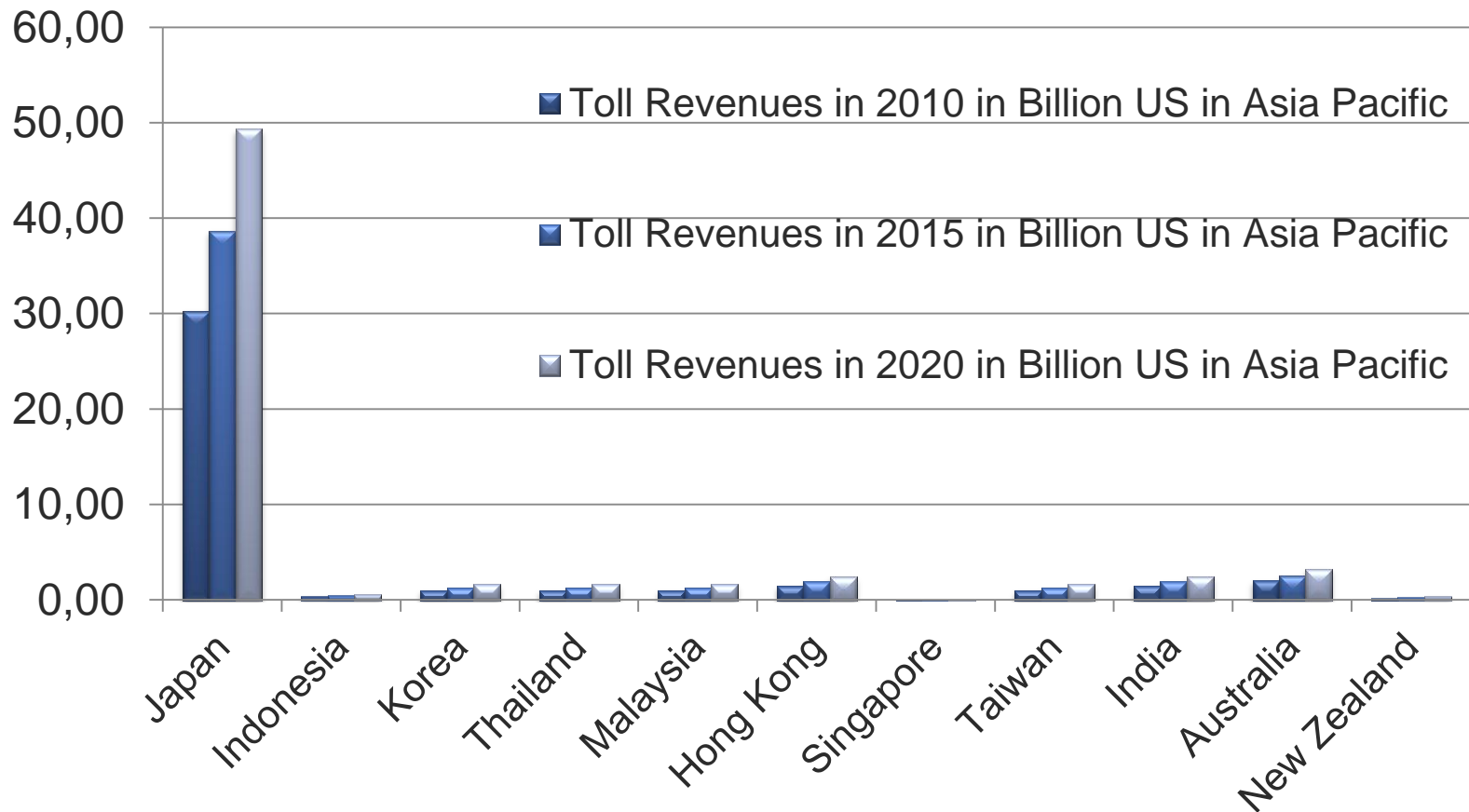
Latin America Toll Revenues by Country 2010 – 2020 at 10% CAGR between 2010-2015 and 12% CAGR between 2015- 2020



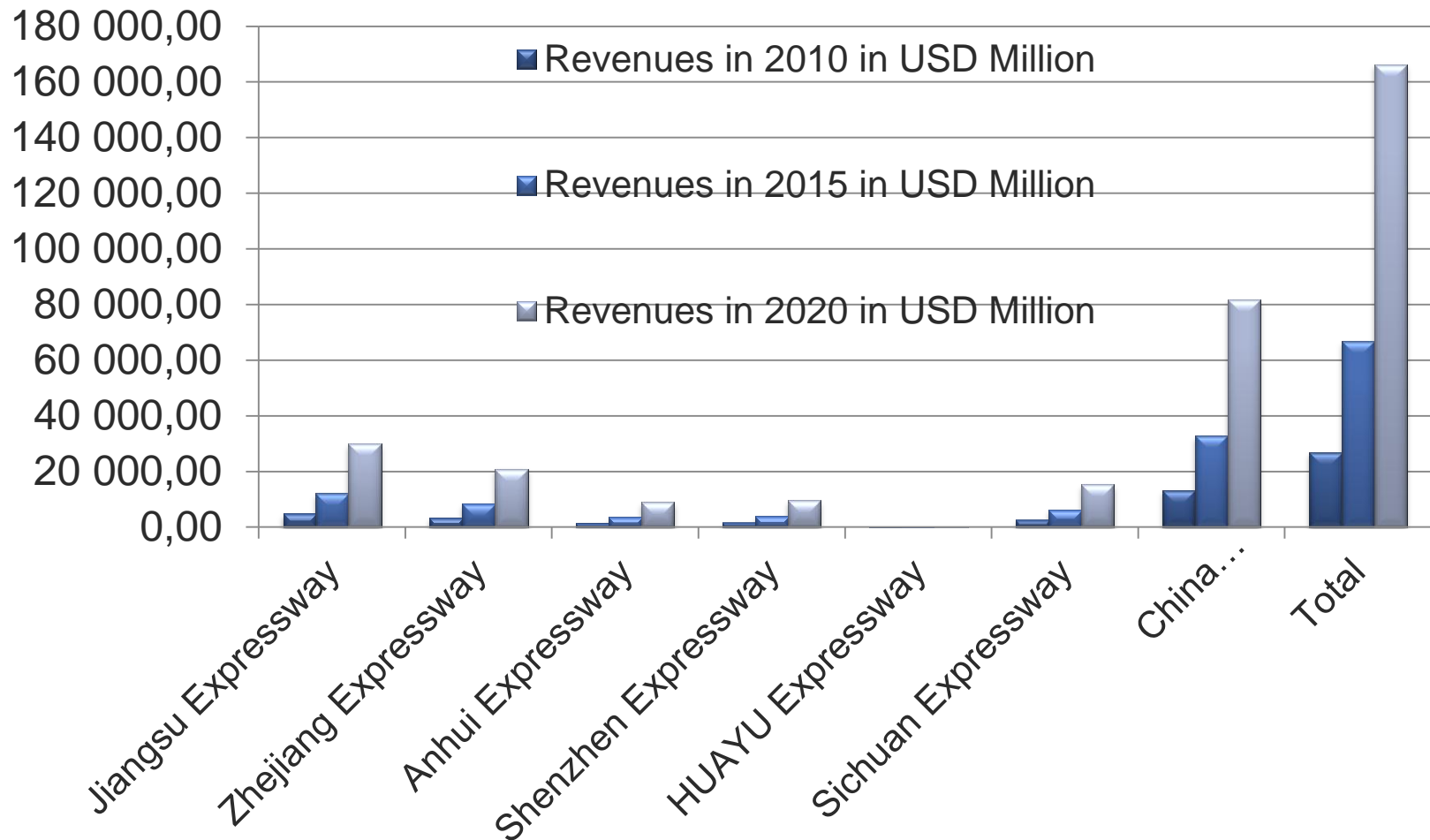
Europe Market Toll Revenues by Country 2010- 2020 in € at 5% CAGR



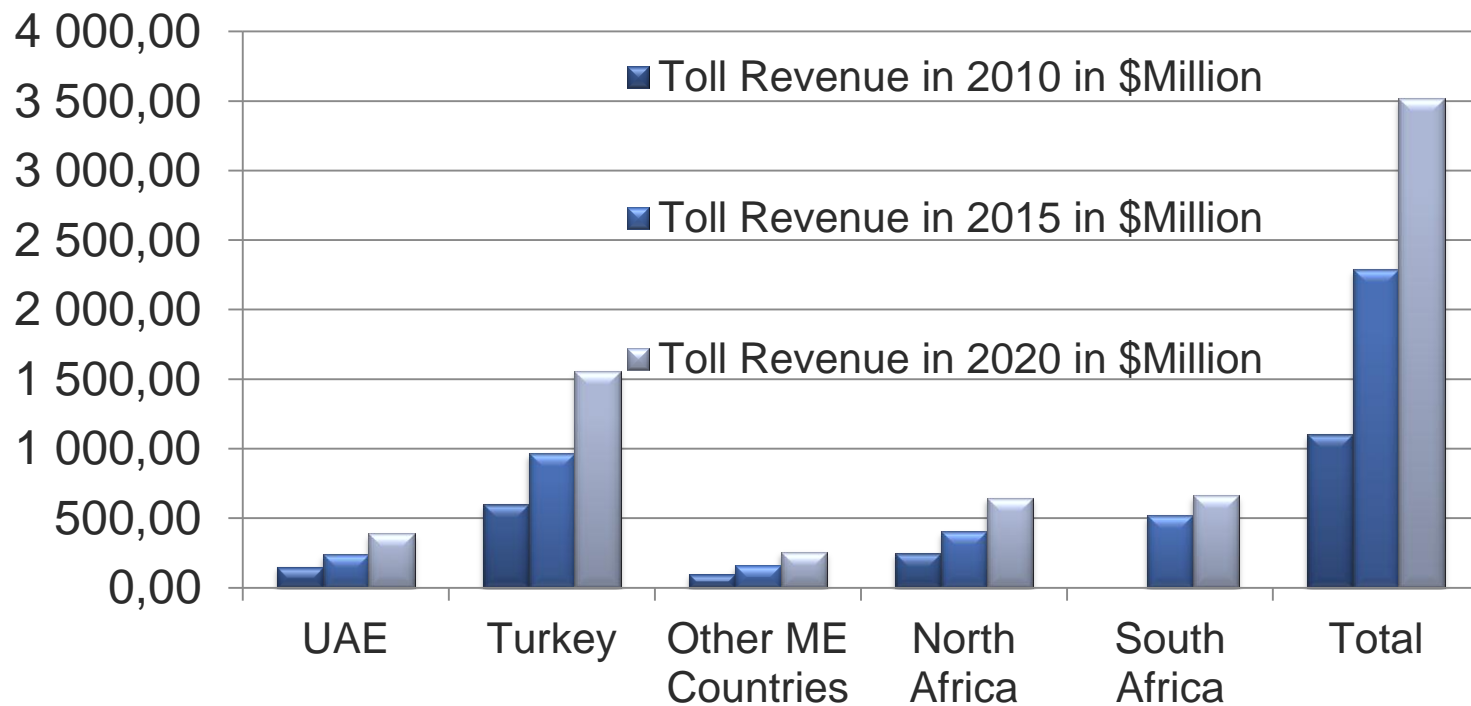
Asia Pacific Toll Revenues by Country 2010 – 2020 at 5% CAGR



China Toll Revenues by Operator 2010 – 2020 at 20% CAGR



Middle East & Africa Toll Revenues by Country 2010 – 2020 at 10% CAGR in ME & NA and 5% CAGR in SA



Thank you

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