

# The Benefits of Full Metro Automation

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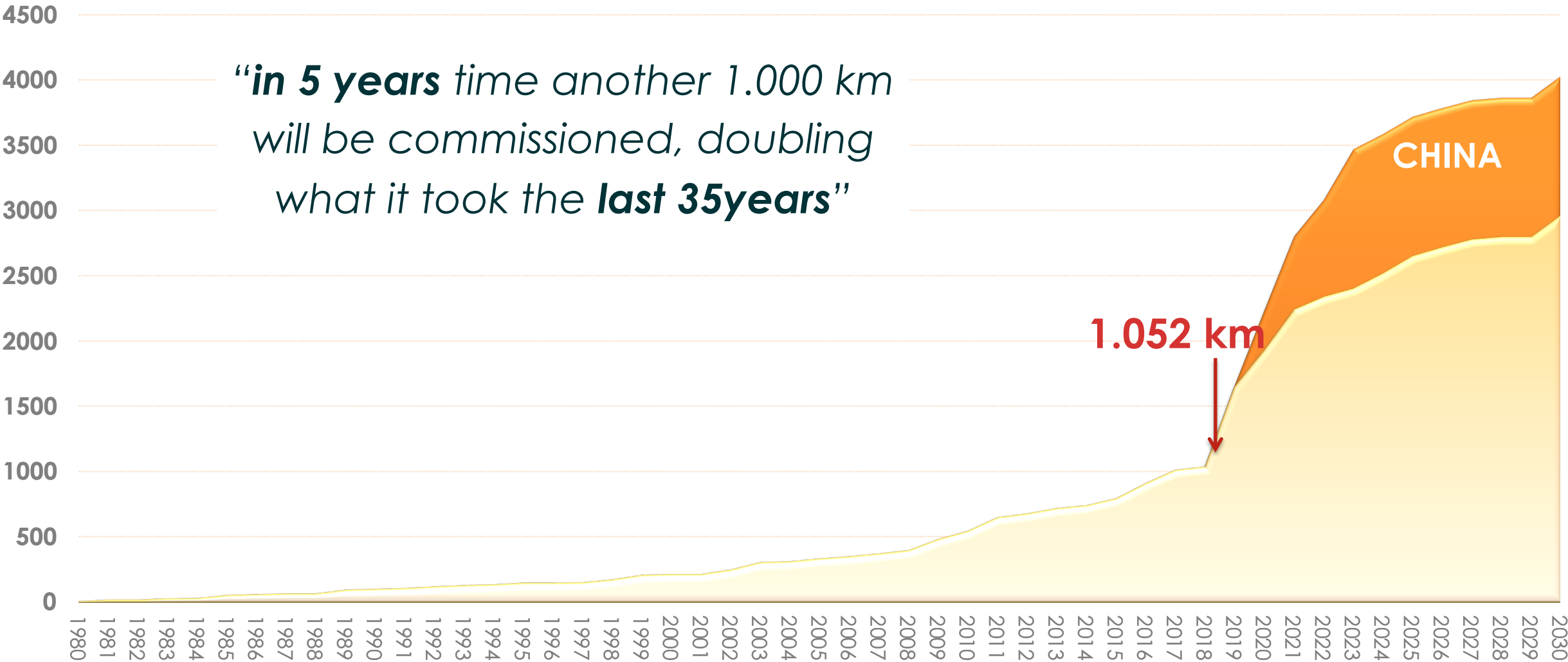


# CONTENT

- Exponential Growth of Automation
- Benefits of Metro Automation
- Conclusions

# Exponential Growth of Metro Automation

# METRO AUTOMATION TOMORROW: EXPONENTIAL GROWTH



# CONVERSIONS SPREADING

Nürnberg



**U2**

U2: 13,5 km

Paris



L1: 16,4 km  
L4: 12,1 km

Wien



U2: 9 km

Lyon



LB: 13,5 km

Glasgow



S: 10,5 km

Marseille



M1: 10,5 km  
M2: 9,2 km

London



DLR: 38 km

Brussels



L1: 12,7 km  
L5: 17,6 km



# GETTING THE MOST FROM AUTOMATION

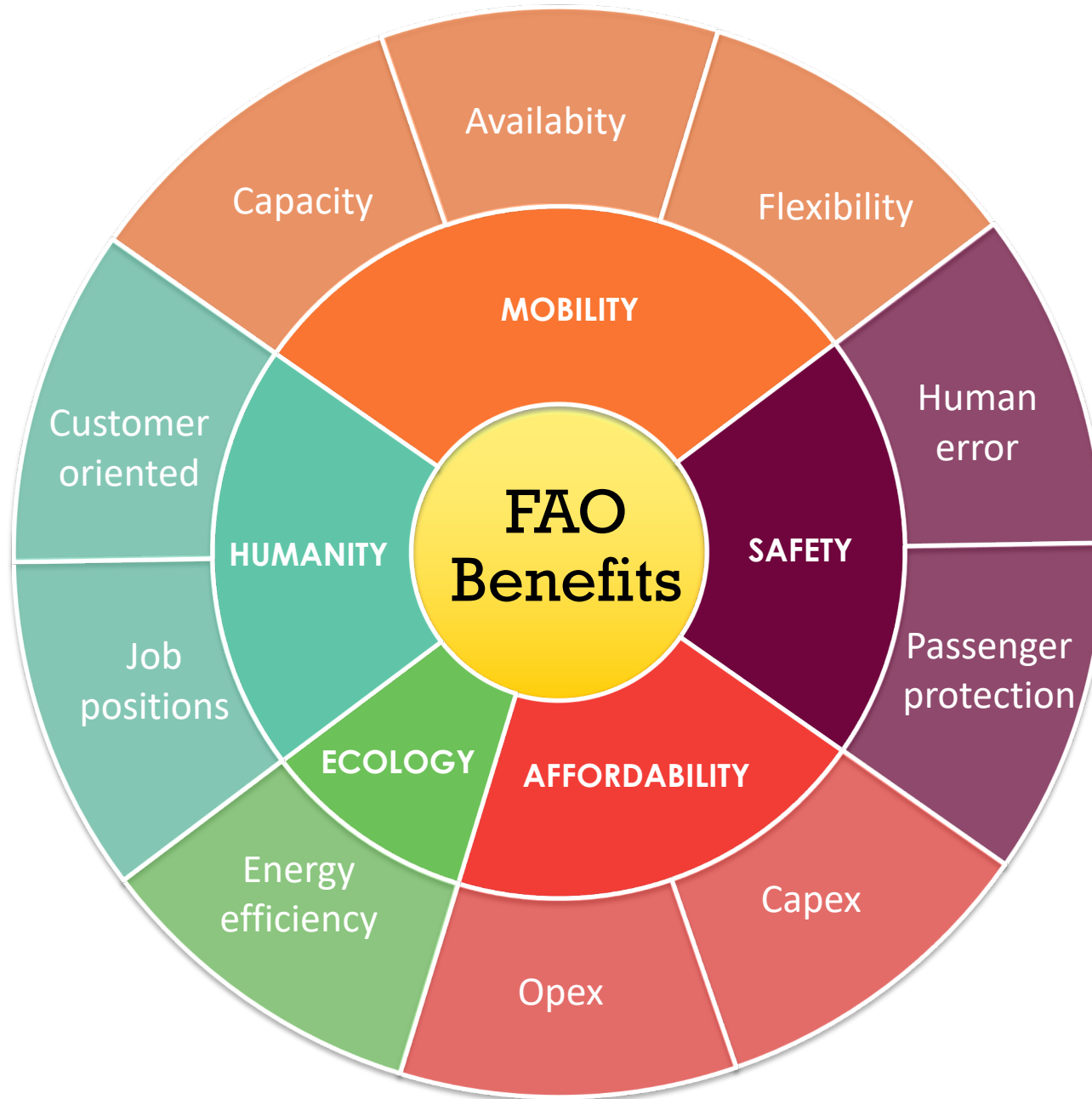
Being automation a clear trend in metro,

***how we can unleash its full  
potential?***

# Benefits of Full Metro Automation

*“Drivers” of Automation*

## BENEFITS OF FULL METRO AUTOMATION



# Ecology

Disruptive services: to match supply to demand

Full Automation

greatest benefit to the

fulfillment of

flexibility

core

service

system performance

happier customers

and labor

expectations of future labor market

improving their travel experience

time

optimal

safety

ways

it

the

improving

and

real-time

to

peak

lowering

enables

that

the

labor



# CONCLUSIONS

# CONCLUSIONS

## In a nutshell...

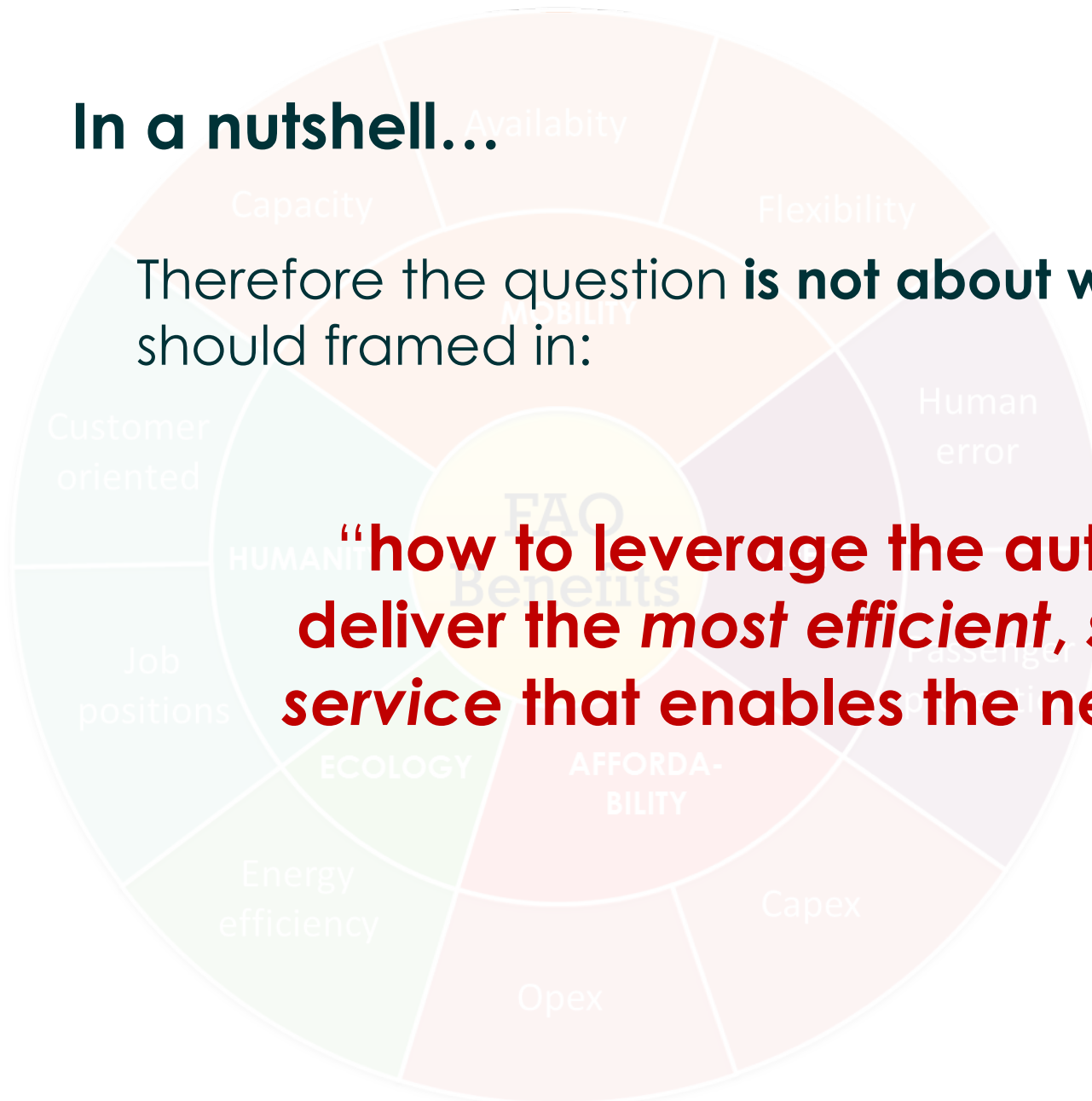
- ✓ This crosswise approach defines a general framework for any mass public transportation system, although **fully automated metro maximizes its outcomes**
- ✓ Metro is being challenged by a **disrupted and fast changing mobility landscape**. Only by a compelling design in the five dimensions would allow metro to become **the backbone of the future mobility ecosystem**

# CONCLUSIONS

## In a nutshell...

Therefore the question **is not about whether “to automate or not”**, it should be framed in:

**“how to leverage the automation benefits to deliver the *most efficient, safe and rapid metro service* that enables the new mobility context?”**



# CONCLUSIONS



KNOWLEDGE BRIEF

## THE BENEFITS OF FULL METRO AUTOMATION

SEPTEMBER | 2019

### INTRODUCTION

Full metro automation has been a reality for over 35 years; every day, over 1000 km of metro are operated automatically around the world, carrying millions of passengers safely and reliably to their destination.

A quarter of the world's metros already have at least one fully automated line, representing 7% of the metro infrastructure in operation today. In the coming 5 years, full automation is expected to become the mainstream design for new metro lines. Yet authorities, decision-makers and operators still face many questions on the advantages of automation over conventional operation. This Knowledge Brief presents the analysis of the experienced networks of the UITP Observatory of Automated Metros on the benefits that full automated operation (FAO) can bring to a metro network.

### THE FIVE KEY DIMENSIONS IN PUBLIC TRANSPORT SYSTEM DESIGN

When implementing a public transport system, there are five key dimensions that any authority must consider in its design:

**MOBILITY:** the transport system must efficiently address current and future mobility needs

**SAFETY:** ensuring that mobility is safe for customers and staff

**AFFORDABILITY:** ensuring the most efficient total cost of ownership for the transport system

**ECOLOGY:** minimising the ecological imprint of the mobility solution

**HUMANITY:** ensuring that the transport system is designed to human scale i.e. placing the customer at the centre and providing a motivating work environment

According to the professional views of the members of the UITP Observatory of Automated Metros, FAO supports metro companies in achieving these goals:

- Improving the mobility offer
- Enhancing safety
- Contributing to the economic balance of the system
- Reducing its ecological imprint
- Providing customers with an improved travel experience while enhancing staff satisfaction

Benefits of these five strategic dimensions are delivered in 10 key areas, which are relevant to any metro network.

A new Knowledge Brief has been issued by UITP to help **unleashing the full potential of metro automation** far beyond the technological approach

ATM



**THANK YOU!**

