

Global trends in metro station organisation and management

ETC, Frankfurt, September 2015

Richard Parasram, Judith Cohen, Alexander Barron, Richard Anderson
Railway & Transport Strategy Centre (RTSC), Centre for Transport Studies
at Imperial College London



Community of Metros
CoMET

Imperial College
London

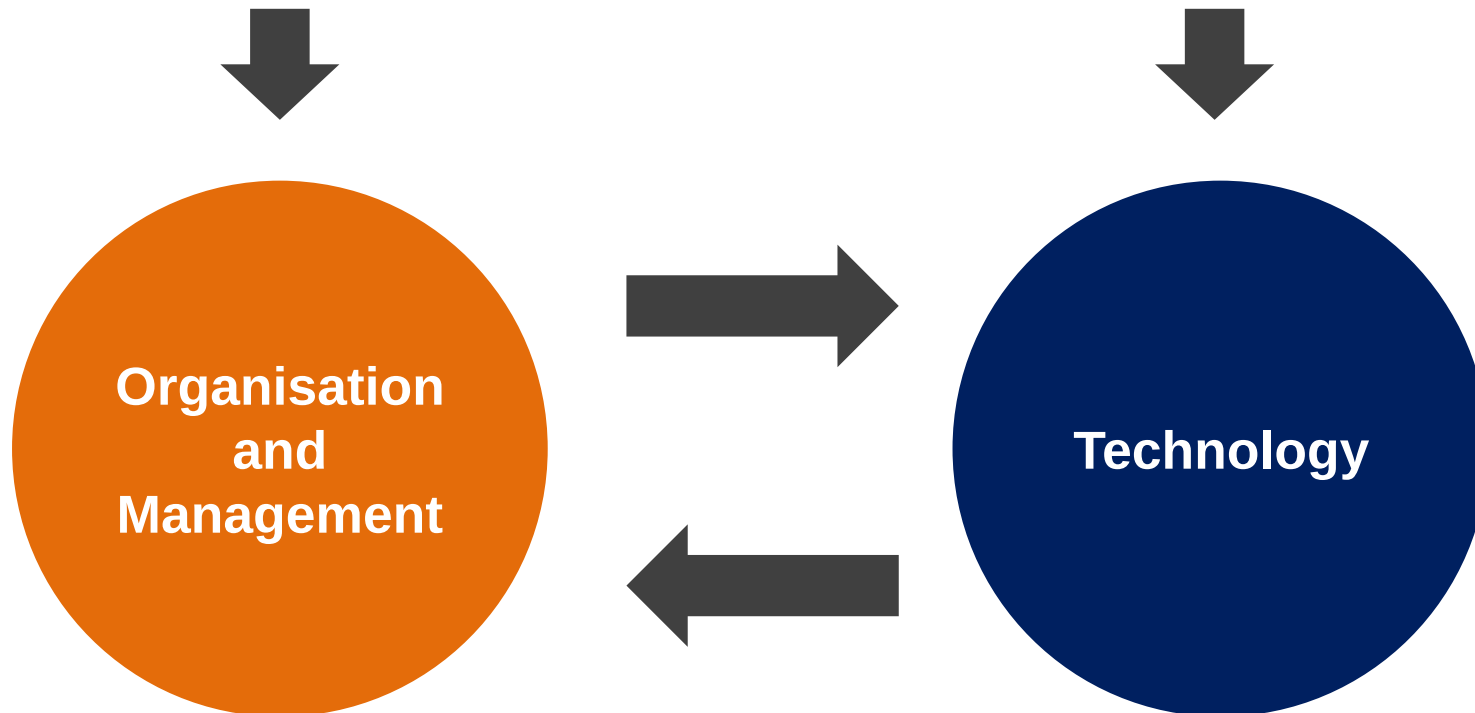
What could station operations look like in 10 years time?

Study Objectives

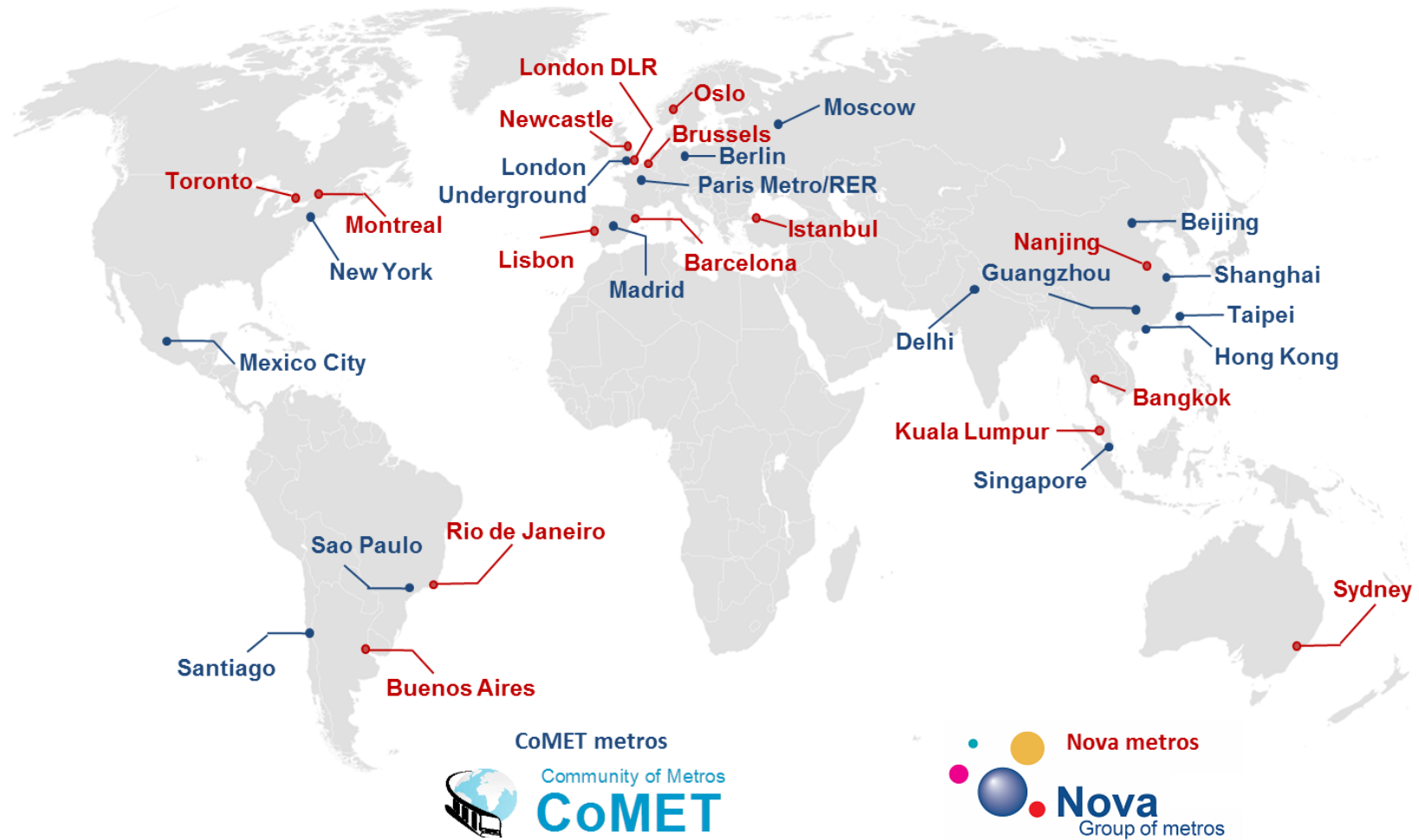
Changes in control and operation of stations, focusing on:

What could station operations look like in 10 years time?

1. Customer service
2. Technology supporting staff



Research conducted with community of 33 metros worldwide



Group's confidentiality agreement requires that information is presented anonymised

5 Organisation and Management Trends: Staff

Staff



1. Ticketing staff evolution



2. Wider use of multi-functional staff



3. Increase in roaming staff

Changing technology means staff can serve passengers and service assets in new ways

Ticketing & customer service



Asset Management



Trend is not without challenges and highlights need to understand passengers using each type of station

14 Metros reported that they have reduced ticketing-specialist staff

Challenges of greater reliance on self-service ticketing



Ticket office users require most assistance...



...And most likely to hold up machine queues

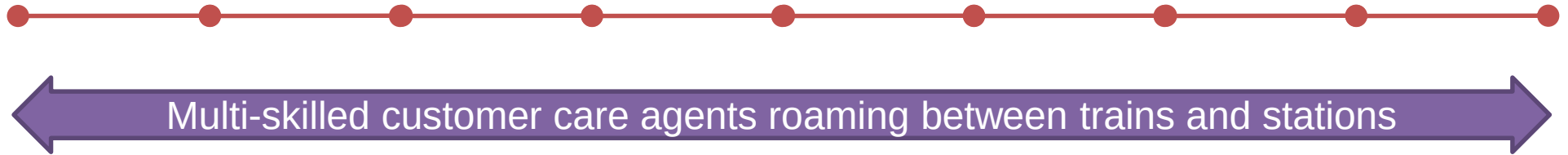


Higher requirement for machine maintenance

17 of the 24 responding metros reported moving toward multifunctional staff, with a range in their responsibilities

Multifunctional Staff	Am	As	As	As	Eu	Eu	Am	Eu	Am	Eu
Ticketing	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Passenger information	✓	✓	✓	✓	✓	✓		✓		✓
Gateline supervision		✓	✓	✓		✓	✓	✓		
Monitoring of equipment / infrastructure	✓	✓			✓	✓	✓		✓	
Platform	✓		✓	✓	✓					
Light maintenance	✓						✓			
Cleaning		✓	✓							

Automated lines increasingly using roaming staff



5 Organisation and Management Trends: Stations

Staff



1. Ticketing staff evolution



2. Wider use of multi-functional staff



3. Increase in roaming staff

Stations



4. More control zones, each with fewer stations



5. Single coordinating point for customer service and assets



Metros moving towards more zones, each with fewer stations

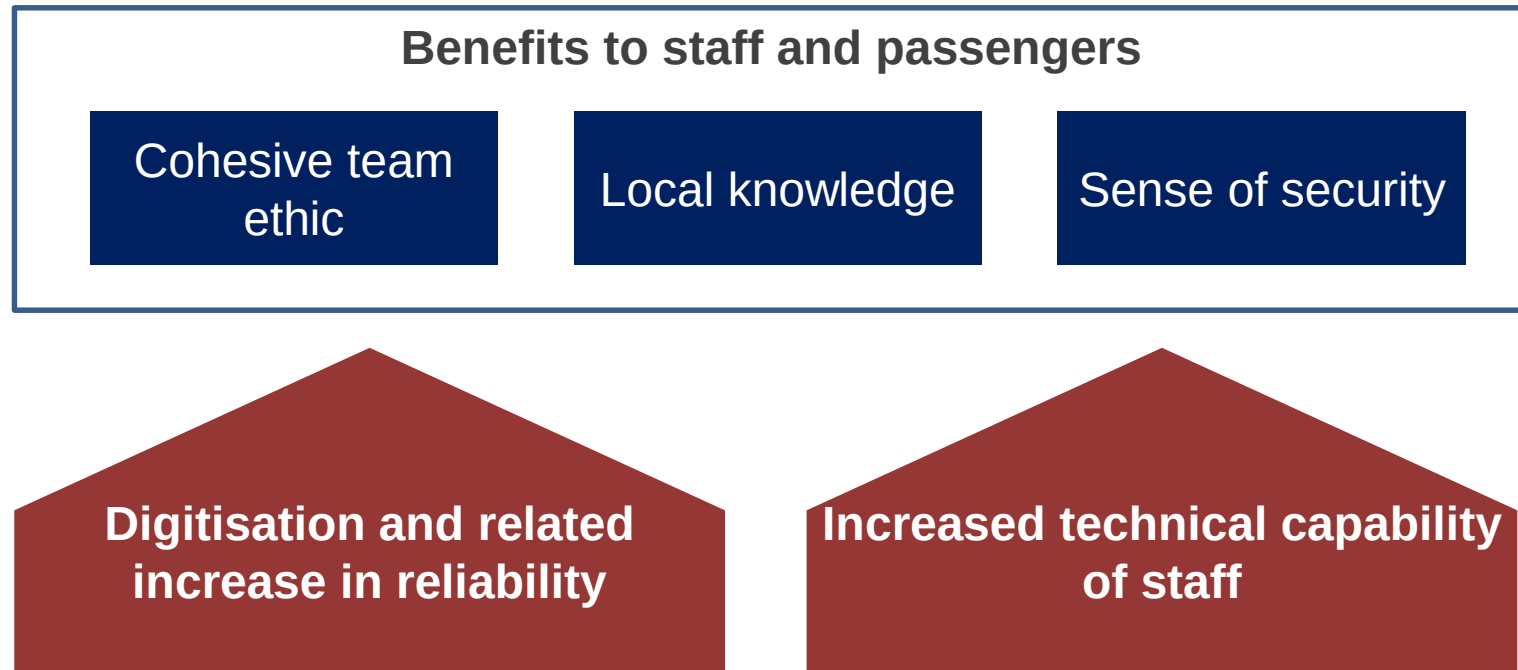
	Eu	As	Am	Am	As	Am	Eu
Stations per zone (before)	7	5	12		5	16	
Stations per zone (now)	3	3	4	4	9	11	12

No 'magic number' of stations per zone

Moving away from line-based zones to area-based zones



Metros reported a range of benefits from shift toward decentralised zonal control, underpinned by technical factors



Trend to focus station management and customer service around Group Station Managers

➤ Single known point of accountability for stations

- For customers
- For metro operations

Toronto TTC publishes its
group station managers'
phone numbers in stations



Benefits of this model

**Time on
station**

Rostering

Recruiting

Training

**Local
Knowledge**

5 Mobile Technology Trends

People & Management



1. Simplify information exchange



2. Increased software options / functionality



3. Increasing hardware options / functionality

Assets



4. Shift from at-asset to remote control



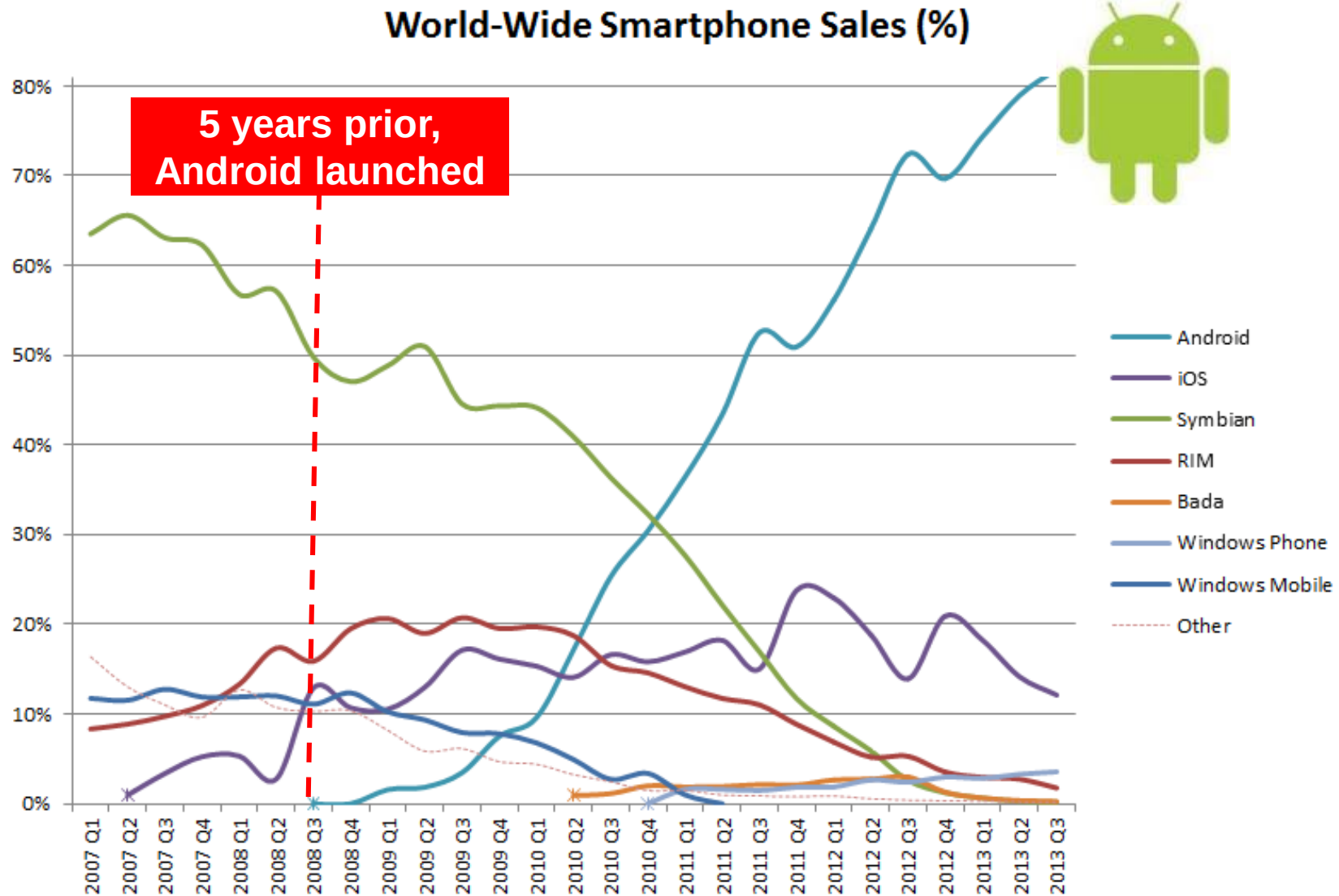
5. Mobile management remains extremely limited



No consensus on 'best' OS for metros – device neutrality may be preferred but there are barriers

6 Metros	 iOS (Apple)
6 Metros	 Android (Google)
3 Metros	 BlackBerry
2 Metros	 Windows Mobile
1 Metro	 Device Neutrality
11 Metros	 Only Conventional Mobile Phone / TETRA

Evolution of smartphone sales highlights importance and motivation for device-neutral approach



Different ways that metros are using mobile technology to improve staff effectiveness and efficiency

- Tablets for station staff
- Tablets equipped to support credit card ticket sales
- iPad-Minis for front-line station staff for maintenance
- iPad-Minis for Train Crew Inspectors to conduct reviews
- Providing more apps, sometimes in direct partnership with supplier



Examples of Smartphone Applications

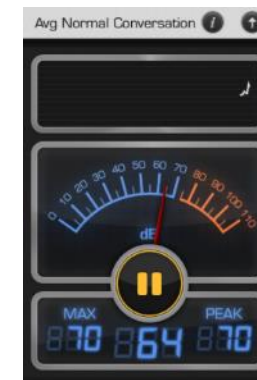
- Station dwell time surveys
- Digitising and auto-uploading station safety/security checklists and results
- Detecting fare evasion at ticket barriers, sending image of perpetrator to station staff mobiles
- Control station CCTV and PA announcements
- Check tickets using tablet with built-in RFID reader
- Check sound levels of musicians in stations, provide evidence in dispute



Task Name	Task Value	Remark	Picture
Station Dwell			
Enter Entrance	☒ OK ☐ NOT OK		Choose File
Bicycle Parking Area	☒ OK ☐ NOT OK		Choose File
Pedestrian Over Head Bridge	☒ OK ☐ NOT OK		Choose File
Trolley area at shop unit 6 01 05	☒ OK ☐ NOT OK		Choose File
Concourse	☒ OK ☐ NOT OK		Choose File
Planted area near pillar	☒ OK ☐ NOT OK		Choose File
Stairs and Stairs	☒ OK ☐ NOT OK		Choose File
Life	☒ OK ☐ NOT OK		Choose File
Down leading to controlled area	☒ OK ☐ NOT OK		Choose File
Fire equipment cabinets	☒ OK ☐ NOT OK		Choose File
Emergency exits	☒ OK ☐ NOT OK		Choose File
Platform	☒ OK ☐ NOT OK		Choose File
End of platform	☒ OK ☐ NOT OK		Choose File
Seating area	☒ OK ☐ NOT OK		Choose File

Partial Submission Status:
Current File Name:

Last Modification:
Date:



Metros employ a range of strategies to protect mobile assets, though not top concern

- All responding metros said that they did not consider mobile devices a security threat

Strategies to improve security

Engraved logo

Location
tracking

Disabled
factory reset

MDM used, centrally
corporate monitored

Personal liability



Range of approaches to allowing staff to customise devices, from close control to allowing staff high level of choice

Devices centrally issued,
applications locked

Staff can add apps but
no payment mechanism

Corporately owned,
personally enabled

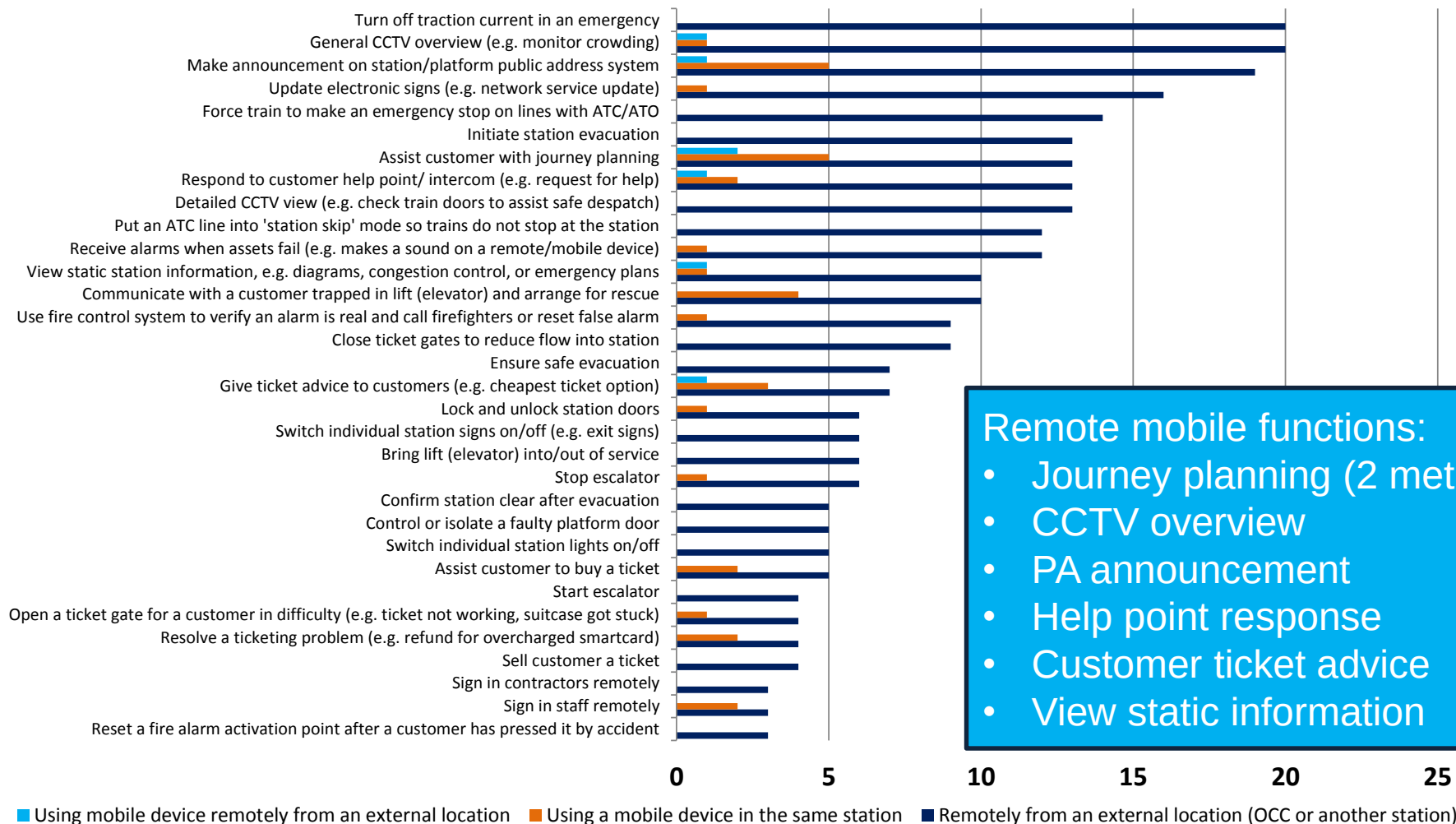
**More
controlled**

**More
open**



Remote management well established but mobile station control remains leading-edge

Station management - number of metros able to carry out each function remotely and with mobile devices



- Remote mobile functions:
- Journey planning (2 metros)
 - CCTV overview
 - PA announcement
 - Help point response
 - Customer ticket advice
 - View static information



Thank you
Please see www.cometandnova.org for contact details



Community of Metros
CoMET