Use of Multi-Functional Staff in Metro Systems Across the World

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Benchmarking: Comparing Performance and Sharing Good Ideas with a Focus on Improvement

Benchmarking Is:

- A systematic process of *continuously* measuring, comparing and *understanding* performance and *changes* in performance
- Of a *diversity* of key business processes
- Against *comparable* peers
- To help the participants *improve* their performance

(Adapted from the definition by Lema and Price)

Benchmarking Provides:

- **Perspective through Data:**
  - How do we *compare* to our peers?
  - What are our *strengths*?
  - What are our *weaknesses*?
  - Quantitative Backing for “rules of thumb”

- **Best Practices through Discussion:**
  - What are others doing to *improve*?
  - What *works*/what doesn’t?
  - How to *implement* best practices.

“Rarely is there a challenge that someone else hasn’t faced…”
# International Benchmarking: Eight Public Transit Groups – Benefits Drive Continued Participation

<table>
<thead>
<tr>
<th>Group of Metros</th>
<th>Founded</th>
<th>Members</th>
<th>Includes</th>
</tr>
</thead>
<tbody>
<tr>
<td>CoMET</td>
<td>1994</td>
<td>18</td>
<td>New York, London, Hong Kong</td>
</tr>
<tr>
<td>Nova Group of Metros</td>
<td>1998</td>
<td>20</td>
<td>Rio, Toronto, Barcelona</td>
</tr>
<tr>
<td>IBBG</td>
<td>2004</td>
<td>15</td>
<td>Dublin, Montreal, Paris, Singapore</td>
</tr>
<tr>
<td>iSBERG</td>
<td>2010</td>
<td>14</td>
<td>Munich, Tokyo, Sydney</td>
</tr>
<tr>
<td>ABBG</td>
<td>2011</td>
<td>22</td>
<td>Austin, Cleveland, Rhode Island</td>
</tr>
<tr>
<td>GOAL</td>
<td>2016</td>
<td>11</td>
<td>Dallas, Seattle, Calgary, Charlotte</td>
</tr>
<tr>
<td>International Mainline Rail</td>
<td>2016</td>
<td>6</td>
<td>Norway, Belgium, Netherlands, Australia</td>
</tr>
<tr>
<td>Railway Infrastructure</td>
<td>2016</td>
<td>4</td>
<td>Australia</td>
</tr>
</tbody>
</table>

Imperial College London
Railway and Transport Strategy Centre
CoMET and Nova: The World’s Metro Benchmarking Community – Now 38 Urban Rail Systems in 36 World Cities
Six Main Types of Multifunctional Roles Were Identified – 3/4 of Responding Metros Already Have and 2/3 Plan to Increase

<table>
<thead>
<tr>
<th>Ticketing + other station tasks</th>
<th>Stations + driving</th>
<th>Attendants on GoA3/4 lines</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maintenance + driving, stations or other maintenance</td>
<td>Combining multiple roles/desks in OCC</td>
<td>OCC + driving, stations, or staff management</td>
</tr>
</tbody>
</table>
Station-Based Multi-Functional Roles are the Most Common, Starting with Combining Ticketing and Other Functions.

- **Selling tickets**
- **Customer information**
- **Platform management**
- **Security Staff Providing Customer Service**
Changes to Station Staffing Models Reflect Need to Make Most Efficient Use of Resources and Respond to Customer Needs

Key outcomes of station multi-functional roles in European metros:

• Reduced costs, partly offset by added infrastructure, security, and supervision
• No loss in revenue
• Increased customer satisfaction, with staff easier to contact (despite fewer total staff)
• Increased staff satisfaction (and motivation)

Barcelona Metro: “Staff do whatever is needed to make the metro work”

Removing ticket offices or station booths and bringing station staff in front of customers
Example of Combined Train Driving and Station Roles at a European Metro

“Station”

- **50% driving trains in service**
  - During the last 4 hours of service

- **40% performing station tasks**
  - Platform and dwell management
  - Customer information
  - Station administration

- **10% office work**

“Movement”

- **60% driving**
  - Based on needs, e.g. filling in for absent drivers

- **10% network incident response**
  - E.g. securing switches

- **10% incident response in stations**
  - E.g. responding to sick passengers, door failures, or urgent cleaning

- **20% miscellaneous missions**
  - E.g. customer satisfaction surveys
Examples of Multifunctional Maintenance Staff Roles – Focus on Flexibility and Better Collaboration Across Functions

**Rolling stock maintainers drive trains during peak hours when trains are in use**

- Saves headcount and improves working relationships between operations and maintenance (for a small pay premium)

**Track workers: 15 days daytime repairs; 15 days overnight reconstruction**

- Avoiding continuous night work helps staff mental health and reduces wage costs

**Use the same group of staff to both drive and maintain engineering vehicles**

**Maintenance technicians trained in multiple disciplines**

- Quick reaction for corrective maintenance, especially on elevators and escalators
- Difficult to retain such highly-skilled technicians
- Difficult to keep technicians trained across many areas as technology develops
Five Key Areas Sum Up the Opportunities, Enablers and Barriers to Multi-Functional Working

- Organisational Vision, Philosophy, & Culture
- Staff Management
- Staff Skills
- Technology and Automation
- Fresh Starts
There are Currently Several Global Automation Trends, Each of Which Helps to Enable Multi-Functional Working

**Fresh Starts**

**Technology and Automation**

**Enablers**
- New lines and stations
- Modernization
- New contracts

**Barriers**
- Limited funding
- Old technology
- Station design

- Unattended train operation (UTO)
- Automatic train operation (ATO)
- Smartcard/bank card ticketing
- Automated ticket sales
- Remote/mobile station operation
- Maintenance techniques

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**Nova Group of Metros**
Significant Benefits of Multi-Functional Staff for Metros, Employees, and Customers

- 6% - 64% staff reduction
- Minimise/avoid hiring when expanding
- Redeploy employees for better customer service
- 5-15% pay increase
- Reclassified to more senior level
- 4%-300% more training

Multi-functional roles tend to be more interesting and rewarding
Multi-functionality can develop the careers of talented employees
Multi-functional roles build operational flexibility & resilience
Thank You!

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