



# Focus on the people

Top 5 Public Transportation  
Industry and Technology  
Trends for 2023



# Introduction

To assess advanced technology adoption and the top trends and priorities across the public transportation industry in 2023 (and beyond), Optibus conducted a survey of professionals across the industry in December 2022.

More than 250 planners, schedulers, executives, dispatchers, IT professionals, and more from diverse employer backgrounds participated in the survey, representing 24 countries worldwide.

Overall, the results show that the biggest challenges of recent years still persist in 2023 and will continue to play a role in the coming years. At the same time, it was clear which factors will drive the industry in 2023 and where there are opportunities for improvement.

## Top 5 Global Industry Trends in 2023 (and Beyond)



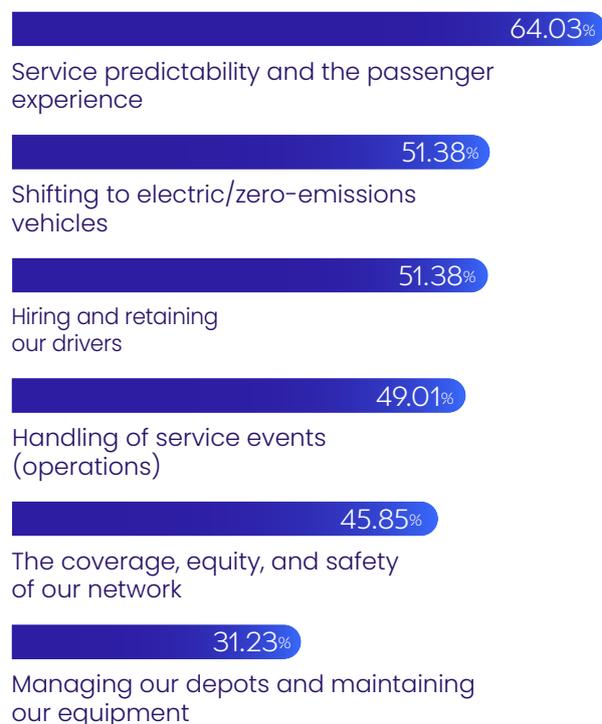
# Biggest Global Trends For 2023

The most important, prevalent topic for the upcoming year was that people are a top priority; both passengers and drivers. **Passenger experience and predictability of services for passengers was the number one priority for 64% of respondents.**

With the increasing reliance on technology in everyday life, passengers have come to expect the same level of convenience and predictability from public transportation. As such, providing a seamless, digital experience is now more crucial than ever.

The industry is also facing a global shortage of drivers, which can cause service disruptions and makes it more difficult to meet the increasing demand for public transportation services. Therefore, it came as no surprise that **hiring and retaining drivers tied for second place in terms of improvement priorities, for 51% of respondents, alongside the need to shift to electric and zero-emissions vehicles.**

## Which of the following areas is your organization looking to improve in 2023?



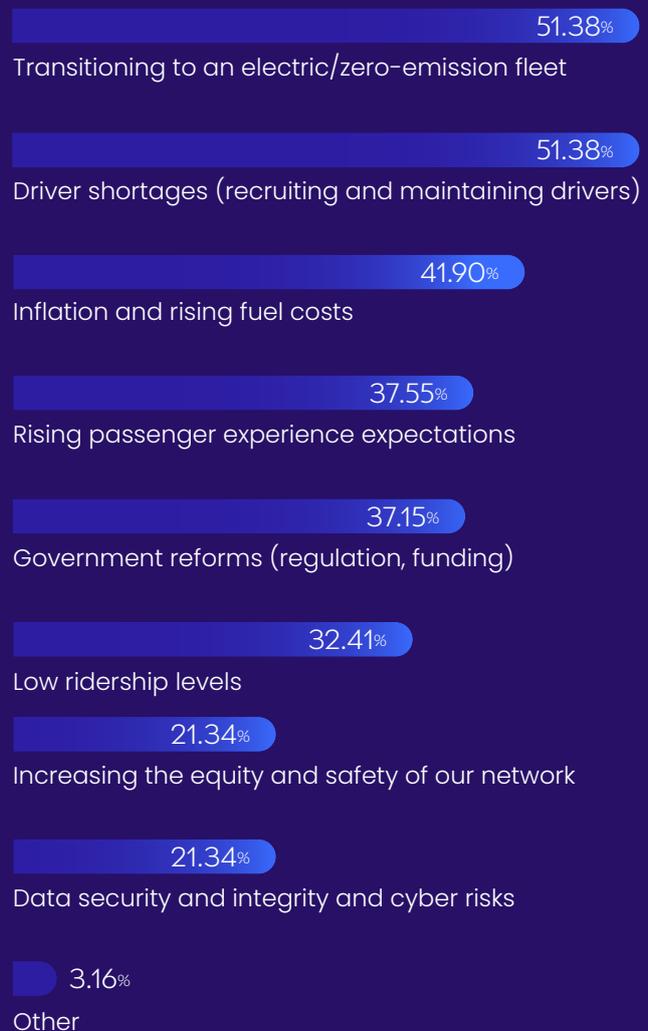
# Beyond 2023: Long-Term Global Outlook

In order to gain a deeper understanding of the industry's priorities for the longer term, we asked respondents to select which trends would have the most impact on their organization over the next 3 years.

The results were that the industry is facing many challenges at once. The longer-term focus is on two issues that have been among the industry's biggest challenges in recent years: **transitioning to electric, zero-emissions fleets and driver shortages, which tied as the number one factor** impacting respondents' organizations.

Rising costs related to inflation and fuel, higher expectations from passengers, and changes in regulation and funding are also the top global concerns.

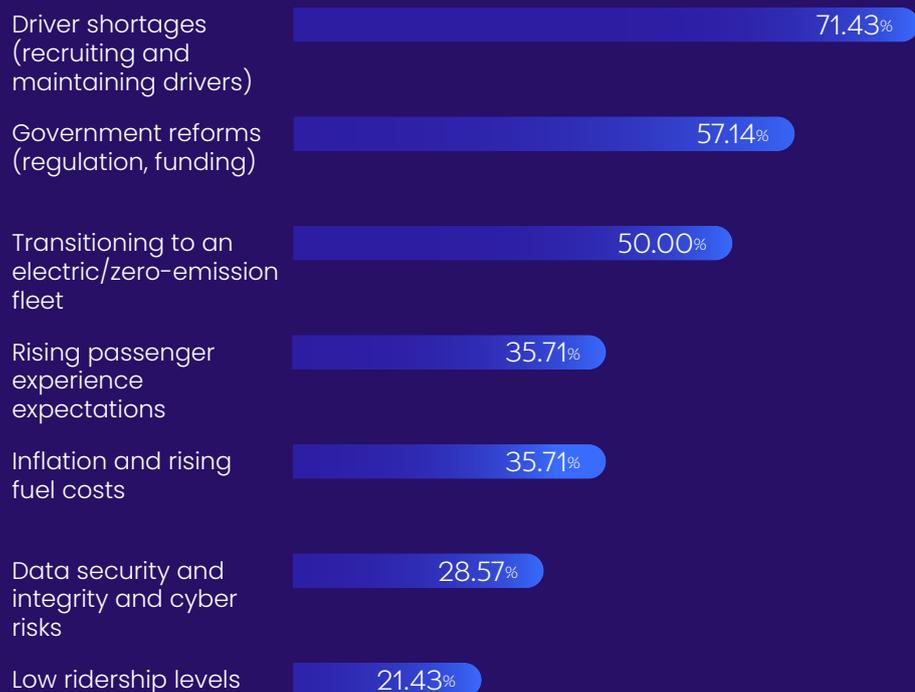
## Which of the following trends will have the most impact on your organization in the next 3 years?





# Trends in the Asia-Pacific

**Which of the following trends will have the most impact on your organization in the next 3 years?**



In APAC, **the driver shortage was the biggest long-term challenge for 71% of respondents.**

While globally, the driver shortage crisis is caused by a lack of drivers, according to the latest International Road Transport Union's (IRU) annual driver shortage survey, also the work conditions and perception of the profession play a major role in this crisis in the region.

The **second most common long-term concern in Asia Pacific is government reforms (57%)**. For example, in the fourth Ministerial Conference on Transport, held in Bangkok in December 2021, delegates discussed strategies and plans to increase sustainable transport activities in the area and strengthen regional cooperation<sup>1</sup>.

At the conference, the [Regional Action Programme on Sustainable Transport Development & Ministerial Declaration on Sustainable Transport Development in Asia and the Pacific \(2022-2026\)](#) was adopted, putting a focus on low-carbon mobility and logistics.

Additionally, in recent years, the region has seen a dramatic ideological shift in transportation promotion and policy, from promoting car travel through massive road construction to recognizing that cars and motorcycles are the cause of traffic congestion and major environmental problems.<sup>2</sup>

Almost every country in APAC has made significant efforts to expand public transportation and reduce automobile traffic. For example, in 2005, the Indian government launched the Jawaharlal Nehru National Urban Renewal Mission (JNNURM). One of the goals of this mission was “Improving the Sustainability and Inclusiveness of Passenger Transportation” and it kicked off Bus Rapid Transit (BRT) in Indian cities.<sup>3</sup>

Major investment into public transportation can also be seen in China<sup>4</sup> and Indonesia, which is making huge strides in developing systems for commuter trains and light rail and expanding their BRT system<sup>5</sup>. Similar initiatives can be seen in Vietnam.

To reiterate, mitigating driver shortages and navigating government regulations and reforms will be of the utmost importance for the APAC region over the course of the next few years.

1. ESCAP 75. (n.d.). Ministerial conference on transport, Fourth Session. ESCAP. Retrieved January 26, 2023, from <https://www.unescap.org/events/2021/ministerial-conference-transport-fourth-session>

2. Enhancing Sustainability and Inclusiveness of Urban Passenger Transport in Asian Cities Ms. Dorina Pojani. Retrieved January 26, 2023, from [https://www.unescap.org/sites/default/d8files/event-documents/Enhancing\\_Sustainability\\_and\\_Inclusiveness\\_0.pdf](https://www.unescap.org/sites/default/d8files/event-documents/Enhancing_Sustainability_and_Inclusiveness_0.pdf)

3. Rathi, S. 2017. India. In Pojani, D., Stead, D (eds.) The urban transport crisis in emerging economies, ch. 5. Berlin: Springer.

4. Gao, Y., Kenworthy, J. 2017. China. In Pojani, D., Stead, D (eds.) The urban transport crisis in emerging economies, ch. 3. Berlin: Springer.

5. SUSTAINABLE ASSESSMENT OF URBAN TRANSPORT SYSTEM IN GREATER JAKARTA Resdiansyah., Ph.D, 2021 ([https://www.unescap.org/sites/default/d8files/event-documents/5.%20Sustainability%20Assessment\\_Greater%20Jakarta.pdf](https://www.unescap.org/sites/default/d8files/event-documents/5.%20Sustainability%20Assessment_Greater%20Jakarta.pdf))

# Trends in Network Planning

**When it comes to network planning, which of the following would your organization like to improve in 2023?**



Public transportation providers want to create routes that are as safe and accessible as possible — while also minimizing the operational costs involved, and improving on-time performance and service quality to provide the best overall experience for passengers.

Given the nature of network planning, it came as no surprise that **punctuality and on-time performance were identified as top priorities for 92% of APAC respondents. At a close second, 85% of respondents selected increasing efficiency and reducing costs.**

This indicates that respondents clearly care quite a bit about efficiency and reducing costs, given also the financial situation and the market. But at the same time, they put a high priority on their on-time performance and the service they provide to their passengers.

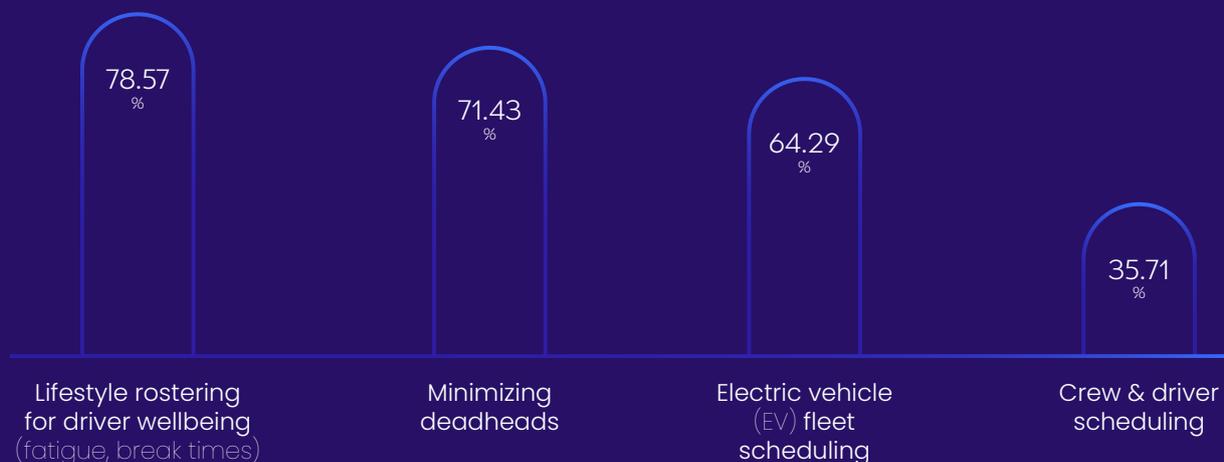
Given the priorities in network planning, fortunately, with the right tools at hand, public transportation providers can do both of these initiatives — reduce costs and increase operational efficiency, while also providing a service that can enable planners to easily predict and improve their on-time performance.



# Trends in Scheduling and Rostering

In order to create work schedules and assignments for individual drivers or operators to work on specific routes, vehicles, and times, schedulers must take into account factors such as hours of service laws, labor agreements, drivers' preferences, and available resources to ensure the efficient and effective operation of the transportation network.

**When it comes to scheduling and rostering (rotas), which of the following would your organization like to improve in 2023?**





## Drivers' Wellbeing & Minimizing Deadheads

Given the mass level of driver shortages that many bus operators face in APAC, it was expected that, when asked about scheduling and rostering (rotas), **driver wellbeing was the top priority, listed by 78% of participants.**

Tailoring rosters to drivers' unique needs and preferences can solve major challenges, such as reducing fatigue and increasing the long-term retention of drivers. Through more flexible scheduling, schedulers can accommodate not just union rules and regulations (for things such as break times and overtime) but also drivers' availability, work-life balance, and personal constraints.

All of this, in turn, leads to higher job satisfaction, a better quality of life, and less turnover among drivers. **Minimizing deadheads came in second place,** reinforcing the need to cut costs and increase vehicle efficiency.

## EV Fleet Scheduling

Electric vehicle scheduling was also of concern to the APAC respondents, tying into concerns around fuel-related costs and the movement to reduce carbon footprints and transition to fully or partially EV fleets. This is becoming a mandate across a number of countries, like India, Australia, New Zealand, Indonesia, Malaysia, and Singapore among others, that are taking actions to reach a certain percentage of their fleets to be exclusively zero-emission buses.

In **India** for example, New Delhi's EV policy aims to reach a target of 25% of all new vehicles to be registered as EVs by 2024. Globally, zero-emission vehicles (ZEV) accounted for 13% of total vehicle sales in 2022, according to the US-based clean technology website CleanTechnica<sup>6</sup>. In India, the ZEV fleet accounted for 4.7 percent of total vehicles in the same year.

6. Pontes, ByJosé. "100% Electric Vehicles = 13% of New Vehicle Sales Globally!" CleanTechnica, 31 Oct. 2022. Retrieved January 26, 2023, from <https://cleantechnica.com/2022/10/31/100-electric-vehicles-13-of-new-vehicle-sales-globally/>

# Electric Bus

**In Australia**, according to the Electric Vehicle Council's report, the demand for electric vehicles (EVs) has grown significantly, with the EV market share expanding by 65% in 2022 to 3.39% of new light vehicle (car) sales<sup>7</sup>.



Another milestone is the Zero Emission Buses (ZEB) program introduced by the NSW Government, "which is a multi-billion dollar program to transition the state's 8,000 diesel and natural gas public transport buses to zero-emission technology." This shows the dedication and commitment of the NSW Government to its target to reach zero emissions by 2050<sup>8</sup>.



**Indonesia** has set a goal to reach net-zero emissions by 2060 or sooner. The transport sector emits 26 percent of Indonesia's carbon dioxide emissions, making it necessary for the Southeast Asian country to drive EV uptake<sup>10</sup>.



**Japan** has committed to certain milestones like reducing greenhouse gas emissions by 26% by 2030 (from 2013 levels), under the UN Climate Change Convention. Additionally, the Japanese government promotes the development of innovative technologies that will enable the country to contribute to the global reduction of CO2 to "Beyond Zero", by 2050, in the automobile industry<sup>9</sup>.



**In Malaysia**, as well, electrification is becoming increasingly important. The minister of international trade and industry Tengku Datuk Seri Zafrul Tengku Abdul Aziz said at the signing of a joint venture agreement between Energy Absolute Thailand and Computer Forms Malaysia that "MITI is committed to driving efforts to attract more electric vehicle investments and to meet the national target of 15% total industry volume (TIV) for EVs and hybrid vehicles by 2030, and 38% of TIV by 2040."<sup>11</sup>

Therefore, it came as no surprise that transitioning to **EV fleets came in as the third priority, with around 64% of respondents interested in EV fleet scheduling.**

7. Electric Vehicle Council (no date) State of Electric Vehicles, electricvehiclecouncil.com.au. Retrieved January 26, 2023, from: <https://electricvehiclecouncil.com.au/wp-content/uploads/2022/03/EVC-State-of-EVs-2022-4.pdf>

8. Transport for NSW, T.for N.S.W. (2021) Zero emission buses, Transport for NSW. Transport for NS. Retrieved January 26, 2023, from: <https://www.transport.nsw.gov.au/projects/current-projects/zero-emission-buses>

9. METI Ministry of Economy, Trade and Industry (no date) Japan's roadmap to "Beyond-zero" carbon, METI Ministry of Economy, Trade and Industry. Retrieved January 26, 2023, from: [https://www.meti.go.jp/english/policy/energy\\_environment/global\\_warming/roadmap/](https://www.meti.go.jp/english/policy/energy_environment/global_warming/roadmap/)

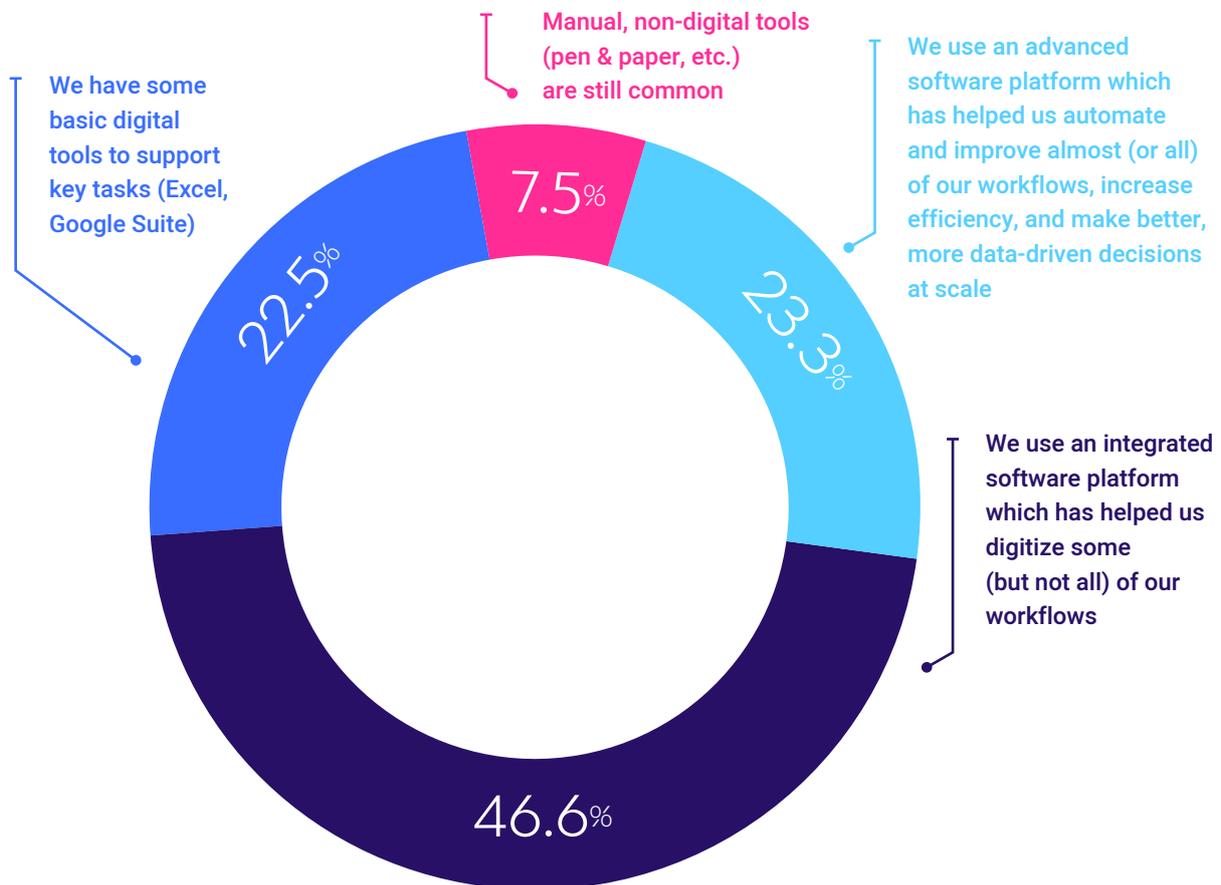
10. SHOFA, J. A. Y. A. N. T. Y. N. A. D. A. (n.d.). Roadblocks to Indonesia's EV Adoption. Jakarta Globe. Retrieved February 28, 2023, from <https://jakartaglobe.id/business/roadblocks-to-indonesias-ev-adoption/#:~:text=Indonesia%20has%20set%20a%20goal,chief%20executive%20officer%20Gilars%20W>

11. Bernama, "Green Transition Must Promote Social, Economic Equity", MITI, "The Edge Markets", Retrieved February 28, 2023 from <https://www.theedgemarkets.com/node/650625>

# Technology Adoption and Usage

The use of technology can help public transportation operators to solve their current challenges, to save costs while improving service efficiency and reliability, creating a better experience for passengers.

## Technology Use Across All Regions



It's surprising that despite today's advancements in technology, 25% of survey participants still manage their services without any software support and only 20% use an advanced platform. This represents a significant opportunity for public transportation providers to tap into, as advanced software platforms can play a major role in overcoming the challenges outlined in previous chapters.



# Complete Industry Report 2023

In our **complete industry report**, we explain how the public transportation industry can utilize the advanced technology to mitigate and alleviate the challenges they're facing now, as well as in years to come.

We'll also go into more detail about regional differences in a global context and look at the trends for Network Planning, Scheduling and Rostering, Depot Operations and Allocation, Driver Communication, and Passenger Information.

[Download the complete report →](#)

# About Optibus

Optibus is an end-to-end, cloud-native software platform for public transportation planning, scheduling, rostering, and operations, powered by artificial intelligence (AI) and optimization algorithms. Transportation agencies and operators in more than 2,000 cities worldwide trust Optibus to increase efficiency and service quality, promote transportation equity, reduce emissions and costs, and modernize their operations.

**Learn more:** [www.optibus.com](http://www.optibus.com)

If you'd like to find out more about Optibus and explore how our platform can help you streamline and enhance your public transportation offering and processes, we welcome you to book an exclusive, one-on-one demo with one of our experts via the button below.

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