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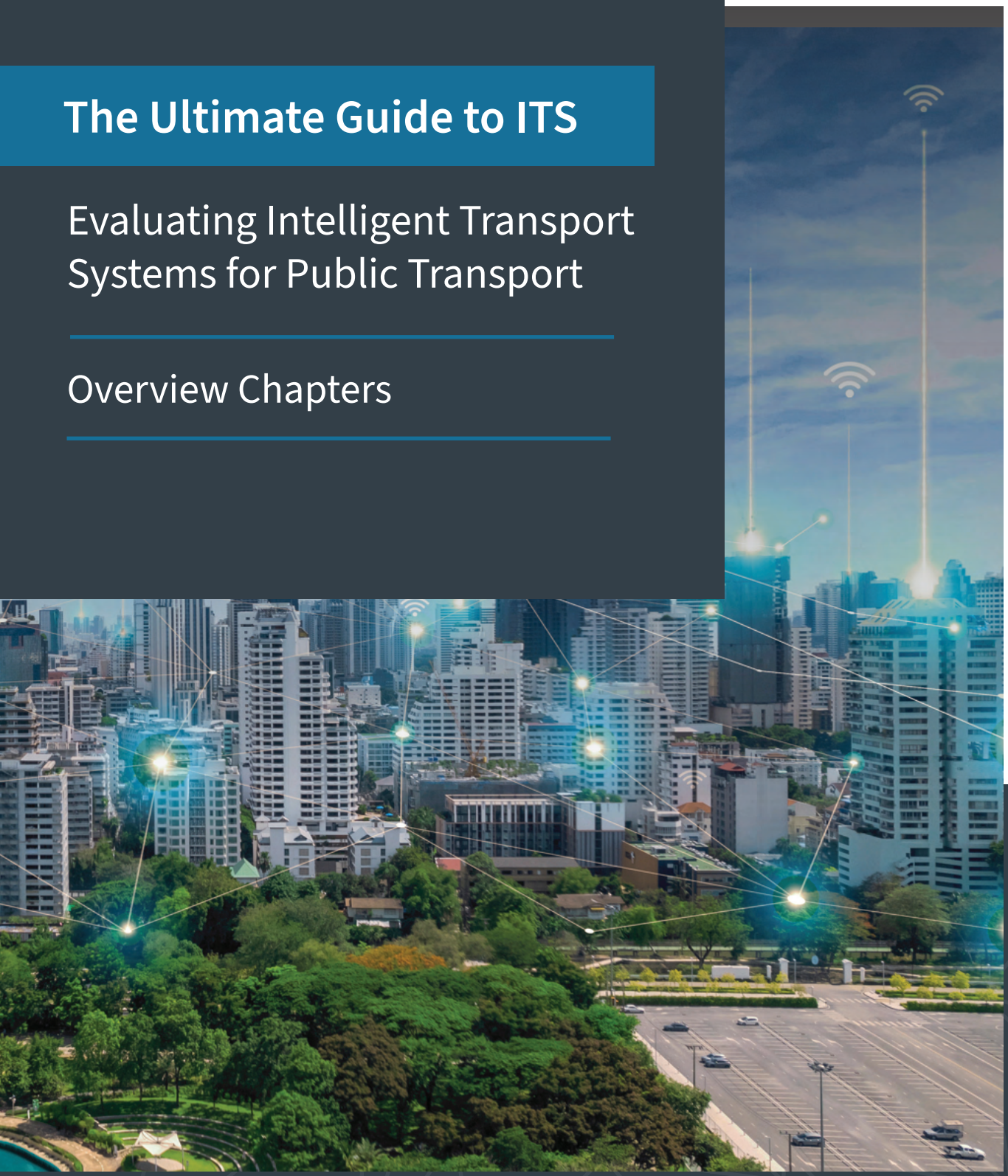
The Ultimate Guide to ITS

Evaluating Intelligent Transport Systems for Public Transport

Overview Chapters



1. Executive **SUMMARY**

Increased urbanisation has placed greater pressure on cities to provide safe, reliable, efficient and sustainable public transport. This whitepaper summarises the benefits of public transport Intelligent Transport Systems (ITS) and how they help meet the challenges presented by larger and more populous cities. It also includes an evaluation guide with specific questions public transport authorities and operators should consider when selecting an ITS solution.

Cities around the world face the challenge of their populations becoming larger and denser. Public transport is essential to move people around quickly and efficiently to help meet the needs of this ever-growing populace. Well planned public transport systems connect urban populations and allow people to take full advantage of the opportunities that cities offer to live, work and play.

At the same time, cities are dealing with multiple environmental issues, and climate change will most acutely impact areas where populations are the densest. Public transport has a significant role in reducing greenhouse gas emissions both within its own operations and those of other transport modes by shifting passengers from private cars.

Intelligent Transport Systems (ITS) help achieve these goals and provide a better passenger experience throughout the whole journey - from the planning phase to implementation and daily operations. ITS solutions have evolved considerably and are now made up of multiple components that can be used on their own or integrated with other systems to enable efficient public transport operations.

This whitepaper provides an overview of the ITS solutions available, their benefits, and an evaluation guide that you can use to assess them. It also provides an auditable checklist to evaluate your systems and identify opportunities for improvement by implementing or upgrading to other systems.

This information will allow you to determine the suitability of ITS solutions for your public transport services. Our guide lets you assess what you need to look for when considering an ITS technology solution and the questions you need to ask prospective ITS vendors.

2. Introduction

WHY INTELLIGENT TRANSPORT SYSTEMS FOR PUBLIC TRANSPORT?

Public transport has become an essential part of city economies as governments address residents' needs and how they live, work and play. Cities want to effectively supply services and create opportunities while addressing climate change concerns and reduce commute times.

Many cities and countries already face enormous challenges in meeting population needs. Providing housing, education, health care, and employment opportunities are critical to improving lives and driving economies forward.

Cities use 78% of the world's energy and produce 60% of global greenhouse gas emissions – but only occupy 2% of the world's land space. Cities are at the forefront of dealing with climate change and pollution impacts. From increasingly severe storms, abnormal snowfalls, unpredictable rainfall and rising sea levels, climate change is affecting cities right now.

These extreme weather events have the most significant impact in urban areas where the population is the densest and property value is the highest.

Severe storms, fire, flooding, and higher temperatures also directly affect human health and safety. Annual global CO_2 emissions are rising, and by 2019, there were 36 billion tonnes emitted - up from 22 billion tonnes in 1990[2]. While greenhouse gases have many contributors, transport accounts for 23% of global carbon dioxide emissions – which have more than doubled since 1970[3]. Transport emissions have also grown the fastest of any energy end-use sector, with 80% of this occurring from road vehicles using internal combustion engines.

Governments are committed to reducing these emissions, with most countries signing up for net-zero carbon emissions by 2050[4]. Public transport has a significant role to play by shifting commutes from private vehicles to more environmentally friendly modes like rail transport and electric vehicles. This mode shift is becoming more important in cities as they become bigger and denser. Some will simply run out of space for private cars.

It has become clear that increasing road infrastructure levels will not cater for the transport demands of urbanised areas and that funds have not been invested in transport areas that deliver the most value. Let's look at some case studies that demonstrate what happens when investment is placed in roads versus public transport.

16. Conclusion

With increased urbanisation, the next 30 years will witness a large shift in how people perceive public transport. As transport authorities, operators, and suppliers, we need to focus on the challenge of moving more people in denser cities while also addressing climate change and other environmental impacts. The decisions we make in the coming years will significantly impact the lives of billions of people.

We have a tremendous opportunity to improve lives right now. By making daily commutes faster and less stressful – we can have a major impact on how a city functions. Those improvements, spread out over millions of annual trips, will compound the benefits and positively shape our cities and cultures in multiple ways.

A modern suite of ITS solutions for transport authorities and operators reduces congestion, helps deliver more reliable public transport, and creates faster travel times and a better passenger experience. ITS helps at every step along the transport journey.

Offering multiple benefits from improved resource utilisation to better passenger experiences, ITS makes it easier for passengers to use public transport and encourages private cars to be left at home. ITS can improve planning and communications, simplify fleet management, and help with disruption management, emergency responses, and reporting. It also helps provide better driver guidance, connection protection between services and increases safety levels.

Continuous data streams, combined with the extraction of useful information using business intelligence tools, allow public transport authorities and operators to make better decisions based on facts – reducing costs whilst optimising operations to provide better services.

ITS is modular in structure. This means that solutions can be introduced step by step across a business to fix specific needs without embracing every possible technology right from the start. They can be integrated with existing third-party systems and typically have various interfaces. Many ITS interfaces are now becoming universal, based on open standards, and proven in use. These changes allow operators to reduce capital and maintenance costs, giving them rich integrated reporting, all while improving the quality and reliability of passenger services.

ITS is transforming society, and you are driving that change. By understanding ITS, you understand the broader public transport landscape, which allows you to determine what gives you the best outcome for all.

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Trapeze Group works with public transport agencies and their communities to develop and deliver smarter, more effective public transport solutions. For more than 25 years we have been Here for the Journey, evolving with our customers around the world to help them move people from point A to Z and everywhere in between.

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