How Strategic Foresight Can Enhance Transport Investments

The aviation industry is starting to recover after the devastating impact of the pandemic. Photo credit: ADB.

Consider a holistic view of the future and a broad range of trends and factors when assessing transport projects.

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Introduction

The coronavirus disease (COVID-19) pandemic has led to massive disruptions and changes, especially in the world of transport. A boom in e-commerce has increased the demand for logistics services. Sustained travel restrictions from the pandemic reduced the movement radius for daily needs and leisure. Increased remote working dampened business travel and brought tourism demand below pre-pandemic levels, while personal transport demand (such as scooters and bikes) surged. While some of these changes may be permanent, others are fading away as the pandemic passes.
Foresight as an Approach to Strategic Thinking

Foresight is a set of approaches and tools designed to help identify emerging issues, negotiate uncertainties, articulate scenarios, develop a common vision of a desired future through wide participation, introduce innovation, and design robust policies and strategies. Common methods include trends research, scenario planning, visioning, and backcasting.

Foresight is not about predicting the future but more on understanding the plausible, desirable, and possible “futures” and the conclusions that can be drawn from these—be it about the design of a project brief, the shape of a policy, or the strategic direction of an organization or sector. The challenge of foresight is not just to identify change but to contextualize what change means.

Why Foresight Is Important for Transport

Prior to the pandemic, urbanization, ageing populations, co-working, climate change, and digital technologies were already reshaping the world of transport. COVID-19 has further accelerated change and has triggered an even greater need to make sense of the future.

Transport is part of a complex system that supports societies and economies. It cannot be discussed without talking about land use, supply chains, work patterns, leisure, health and wellbeing, and energy and resources. There is a deep interconnection that crosses territorial and domain boundaries and a strong undercurrent of trends and drivers of change that add additional complexity.

Besides the incredibly long project lifecycles, the complexity of future transport investments is usually influenced by the wide array of stakeholders and distinct physical networks that make up the transport system, the deep links between transport and other economic sectors, and the increasing need for investments that influence behavioral changes and impact challenges like gender inequality or climate change. A holistic view of the future and a broad range of trends and factors must be considered when assessing transport strategies, policies, and investments.

This does not come naturally for most (the usual focus is on specific areas of expertise) while less familiar issues are unconsciously (or consciously) blocked out. Foresight can help take a structured approach to understanding the wide range of trends shaping future transport systems. It can help identify what really matters and create a more inclusive understanding of a project right from the start.
Some of the Foresight Tools

STEEP framework

The STEEP framework can map out all the trends and issues shaping a project across social (S), technological (T), economic (E), environmental (E), and political (P) dimensions.

Figure 1: STEEP Factors Shaping the Adoption of Autonomous Vehicles

Source: ARUP, 2022.

The STEEP framework and other similar ones ensure that the indirect or less obvious factors that could shape the success of a project are explored. It identifies additional opportunities for innovation in cross-sector spaces and points out trade-offs to be made between different priorities.

Examples include exploring the potential role of rail infrastructure in ecosystem restoration, designing roads that meet inclusive needs of a diverse range of users, and pursuing healthier lifestyles through nonmotorized modes. Roads could also be designed to deliver on ambitious targets for electric-mobility penetration.
Scenario Planning

The future is shaped by stories or narratives—be it aspirational, utopian, dystopian, or something in between. Key methods in the foresight toolbox use narratives to relate alternative futures or scenarios. These can map out plausible pathways into the future and provide a great canvas to “stress-test” projects, policies, or strategies. This is not predicting the future but understanding the “option space.” The aim is to make decisions more future-proof across multiple plausible pathways, thereby increasing understanding of potential shifts and resilience within changing contexts.

Figure 2: The Futures Cone and the Idea of Identifying Possible, Probable, and Preferable Futures

![Futures Cone Diagram](image)

Source: An Introduction to Corporate Foresight. ARUP, 2017.

For example, in Figure 3, one of the scenarios—developed as part of a training exercise—described a world where levels of remote work are high, coupled with significant public concerns about climate-change-driven natural hazards (Scenario 4: New habits). Such a scenario would lead to significantly lower demand for air travel and less international movement.

How can aviation companies adjust to this future world? As the world emerges from the COVID-19 pandemic, airlines will need to regain customer confidence to encourage movement of people in a scenario where the risks of travel restrictions continue. Such a business model may also apply to situations with extreme weather patterns, driven by yet another megatrend – climate change.
Consumers will demand low-cost and greener travel options that include free cancellation or rebooking during periods of enhanced transmission risks. Concurrently, the aviation industry will need to decarbonize urgently with mounting pressures from climate impacts, global commitments, and increasing awareness on climate issues.

Another strategic response to such a scenario is “going” digital or virtual and promoting local experiences. Eliminating the need to travel long distances, while diversifying revenue streams could mean greater systemic resilience and reduced emissions. While aviation companies may not benefit, other transport providers would.

Figure 3: Sample Scenarios for Air Travel

Unlocking the Power of Transport

The transport system plays a critical role in the economic and social recovery of countries. It is a key enabler for development and a tool to stimulate positive outcomes. As countries recover from the pandemic, there is an urgency to get things right and to make the most of available resources.

Foresight offers efficient strategies for transport investments. It brings forth a future-focused mindset, an openness to think beyond the obvious, and a desire to explore the future in a logical and structured way. It unlocks innovation and enables project teams to focus on delivering a broad range of positive outcomes, well beyond a traditional project brief and sectoral strategy.
Resources


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Arndt facilitates the effective use of digital technology, advising external clients, ADB regional departments, as well as sector and thematic groups on digital transformation. He provides thought leadership to ADB’s futures thinking and foresight activities and facilitates its interdepartmental Working Group on Digital Technology Risk Assessment. Prior to ADB he worked with the UN Development Programme (UNDP) at national, regional, and global levels.

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**Alexandra Pamela Chiang**  
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Pamela has 20 years of international experience in the development and management of transport projects, including urban transit systems, railways, seaports, airports, roads, cross-border transport, and regional connectivity. She has collaborated with academia, industry experts, and practitioners on various research, tools, and best practice guidance to support infrastructure investment decisions of countries. She has a Master of Business Adminstration (MBA) from Warwick University (UK) and Bachelor of Civil Engineering from National University of Singapore.

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Josef Hargrave is a director and global foresight leader at ARUP. He focuses on trends shaping the future of the built environment and their impact on strategy, innovation, and policy making.

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