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Global Transport Futurists, Urbanists, Trendsetters & Think Tanks

17+ Global Visionaries, Realists & 7 International Standards Bodies Shaping Future Mobility

03. Global Transport Futurists, Urbanists, Trendsetters & Think Tanks

Prepared for the Architect of Tech — Transport for NSW (TfNSW)



Urban Geometry Capacity Chart & 5 Core Debates

1. Directory of Global Transport Futurists, Urbanists & Trendsetters

1.1 The Cyber-Physical & Disruptive Mobility Visionaries

- **Carlo Ratti** — *Director, MIT Senseable City Lab; Founding Partner, CRA* (`https://senseable.mit.edu/`)
- **Core Thesis: "Senseable" vs. Smart Cities.** Rather than building brittle top-down silicon control rooms, cities should harness citizens, mobile phones, buses, and ferries as distributed, opportunistic sensors creating real-time cyber-physical feedback loops (e.g., *Roboat* autonomous modular boats in Amsterdam, *Trash Track*, *Mind the Gap*).
- **TfNSW Takeaway:** Turn every NSW bus, ferry, and connected car into a mobile road-roughness, micro-climate, and congestion sensor.

- **Horace Dediu** — *Founder, Asymco; Co-creator of the term "Micromobility"* (`https://www.asymco.com/`)
- **Core Thesis: Unbundling the Automobile.** Applying Clayton Christensen's *Disruptive Innovation* theory, Dediu notes that over 80% of urban car trips are under $8 ext{ km}$. Lightweight electric vehicles (e-bikes, e-cargo bikes, e-scooters, micro-cars weighing $20–100 ext{ kg}$) will disrupt the $2,000 ext{ kg}$ automobile from the bottom up, just as smartphones disrupted mainframes and PCs.
- **TfNSW Takeaway:** Treat active transport & micromobility as high-capacity digital infrastructure (7,500–12,000 pphpd per lane)—integrating secure e-bike charging vaults at Sydney Metro stations and **MDS/GBFS** data feeds.
- **Tony Seba** — *Co-founder, RethinkX; Author of "Clean Disruption of Energy and Transport"* (`https://www.rethinkx.com/`)
- **Core Thesis: The TaaS (Transport as a Service) S-Curve.** Models the non-linear cost convergence of Solar/Wind + Batteries + Autonomous EVs. Seba argues that shared autonomous fleet vehicles will achieve 10x higher utilization ($100,000 ext{ miles/year}$) at 4–10x lower cost per passenger-kilometer than private car ownership, stranding fossil fuel assets and freeing up to 80% of urban parking space.
- **TfNSW Takeaway:** Use Seba's TaaS curve as the upper-bound disruption scenario for *Future Transport 2061*—planning for shrinking commuter car park demand versus surging dynamic kiss-and-ride Pick-Up/Drop-Off (PUDO) kerb demand.
- **Robin Chase** — *Co-founder of Zipcar, Veniam, and NUMO (New Urban Mobility Alliance)* (`https://www.robinchase.org/`)
- **Core Thesis: AV "Heaven vs. Hell" (*Fulton vs. Heaven*).** Without shared-occupancy incentives and road pricing, autonomous cars will trigger "Hell"—zero-occupancy "zombie cars" cruising endlessly to avoid CBD parking fees, multiplying congestion. Also co-founded **Veniam** to turn municipal buses into roving V2X mesh Wi-Fi/telemetry routers.
- **Gabe Klein** — *Executive Director, US Joint Office of Energy & Transportation; Author of "Start-Up City"* (`https://driveelectric.gov/`)
- **Core Thesis: Agile Public-Private Mobility.** Demonstrates how government DOTs can move at startup speed while maintaining strict public sovereignty over street right-of-way, open data (MDS), and universal bi-directional EV charging standards (**ISO 15118 Plug & Charge** and **OCPP 2.0.1**).
- **Brad Templeton** — *Robocar Pioneer; Early Google Self-Driving Car Consultant; Singularity University* (`https://www.robocars.com/`)
- **Core Thesis: Infrastructure-Independent Autonomy.** Warns road agencies against pouring billions into proprietary "smart road" hardware that automotive OEMs will ignore because robotaxis must operate safely on unequipped rural roads anyway. Advises DOTs to focus on **Machine-Readable Traffic Regulations (METR)**, clear lane markings, and open cellular V2N alerts.
- **Timothy Papandreou** — *Founder, Emerging Transport Advisors; former CIO/Innovation Director at SFMTA; former Waymo X* (`https://www.emergingtransport.com/`)
- **Core Thesis: Bridging Public Transit & Commercial Autonomy.** Architects Public-Private Partnerships (P3s) connecting commercial robotaxis (Waymo/Zoox) and Advanced Air Mobility (eVTOL vertiports) directly into public transit fare and spatial ecosystems.
- **Greg Lindsay** — *Futurist, Senior Fellow at NewCities / Atlantic Council; Co-author of "Aerotropolis"* (`https://www.greglindsay.org/`)
- **Core Thesis: The Aerotropolis & Augmented Urbanism.** Models how 21st-century global airports evolve into multi-modal smart cities anchored by high-speed rail, automated air-cargo corridors, and digital twins—directly mirroring **Western Sydney International Airport & Bradfield City Centre**.

1.2 The Transit Geometry, Street Urbanism & Economic Realists

- **Jarrett Walker** — *President, Jarrett Walker + Associates; Author of "Human Transit" (Revised 2024)* (`https://humantransit.org/`)
- **Core Thesis: Transit Geometry, "Frequency is Freedom," and "Elite Projection."** Walker proves that in dense urban corridors, **geometry and space—not vehicle software—are the binding constraints**. He coined *"Elite Projection"* to diagnose why affluent decision-makers fall for low-capacity "gadgetbahns" (Hyperloop, Vegas Loop Tesla tunnels, PRT pods). High-frequency grid networks and dedicated mass transit rights-of-way remain mathematically undefeated.
- **Janette Sadik-Khan** — *Principal, Bloomberg Associates; Chair, NACTO; former NYC DOT Commissioner; Author of "Streetfight"* (`https://nacto.org/`)
- **Core Thesis: Data-Driven Tactical Urbanism.** Proved that cities can reallocate street space from private cars to dedicated bus lanes, cycleways, and pedestrian plazas in days using paint, planters, and empirical retail/throughput metrics.
- **Gil Penalosa** — *Founder & Chair, 8 80 Cities* (`https://www.880cities.org/`)
- **Core Thesis: The "8 to 80 Cities" Rule.** If a street, station, or digital wayfinding system is safe, accessible, and joyful for both an **8-year-old child and an 80-year-old senior**, it works for everyone.
- **Donald Shoup & Paul Barter** — *Author of "The High Cost of Free Parking" (Shoup, UCLA) & Founder of "Reinventing Parking" (Barter, Singapore)* (`https://www.reinventingparking.org/`)
- **Core Thesis: Curbside & Parking Economics.** Unpriced curb space and mandatory parking minimums subsidize congestion. Demand-responsive dynamic kerbside pricing (maintaining an 85% occupancy target so 15% of curb space is always open for immediate delivery/PUDO) is essential for modern cities.
- **Alon Levy** — *Lead Researcher, NYU Marron Institute "Transit Costs Project"; Writer at "Pedestrian Observations"* (`https://transitcosts.com/`)
- **Core Thesis: Curing Anglosphere Rail Cost Disease.** Leads the definitive global database showing why English-speaking countries pay $3–10 imes$ more per kilometer of tunnel/rail than Spain, France, Italy, Korea, or Japan. Champions standardized cut-and-cover/bored station boxes, through-running regional rail (*S-Bahn* model), level boarding, and modern **ETCS Level 2/3** signalling.
- **Christian Wolmar & Paris Marx** — *Author of "Driverless Cars: On a Road to Nowhere?" (Wolmar) & Author of "Road to Nowhere" (Marx)* (`https://www.christianwolmar.co.uk/` | `https://parismarx.com/`)
- **Core Thesis: Anti-Hype Due Diligence.** Provide rigorous historical and technical critiques of automotive lobbying, Silicon Valley "vaporware" (Boring Company tunnels, flying cars as mass transit), and ride-hail congestion—reminding transport architects that electrifying private cars does not solve road trauma, spatial inefficiency, or social equity.

1.3 The Safety, Legal & Logistics Architects

- **Bryant Walker Smith** — *Professor of Law & Engineering, University of South Carolina; Chair, TRB Emerging Technology Law Committee* (`https://newlypossible.org/`)
- **Core Thesis: Legal & Safety Case Architecture of Autonomy.** Authored the foundational legal proof that automated driving complies with the 1949 Geneva / 1968 Vienna Conventions, co-drafted the **SAE J3016** automation levels, and pioneered the continuous **Safety Case** framework adopted by Australia's **NTC Automated Vehicle Safety Law (AVSL)** and the **UK Automated Vehicles Act 2024**.

- **Prof. Missy Cummings** — *Director, Mason Autonomy & Robotics Center (GMU); former NHTSA Senior Safety Advisor; former US Navy Fighter Pilot* (`https://marc.gmu.edu/`)
- **Core Thesis: Human-Automation Interaction & AI Safety Realism.** World authority on drone swarm supervision, human-in-the-loop cognitive limits, "mode confusion" in SAE Level 2/3 systems, and the susceptibility of deep neural networks to out-of-distribution edge cases.
- **Prof. Benoit Montreuil** — *Coca-Cola Material Handling & Distribution Chair, Georgia Tech; Creator of the Physical Internet ($\|pi$)* (`https://www.pi.events/`)
- **Core Thesis: The Physical Internet (π).** Re-architects global freight logistics using the 7-layer OSI model of the Digital Internet: standardized, modular, interlocking **π-containers**, automated cross-docking **π-nodes**, and open routing protocols to eliminate the 40–50% empty air inside trailers and 25% empty "dead-head" truck running.

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2. Leading Global Think Tanks & Standards Consortia

- **ITF (International Transport Forum — OECD, Paris):** Intergovernmental think tank (69 member nations including Australia, led by Sec-Gen **Dr. Young Tae Kim**). Famous for the **Lisbon Shared Autonomous Mobility Study**, *Safe System* road safety manuals, and MaaS data governance frameworks (`https://www.itf-oecd.org/`).
- **UITP (International Association of Public Transport, Brussels & ANZ Hub):** Global authority on **GoA4 Metro benchmarks**, **Zero Emission Bus (ZEB) depot charging interoperability**, and public transport AI (`https://www.uitp.org/`).
- **ERTICO — ITS Europe:** Drives **C-Roads** (harmonized 5.9 GHz C-ITS), **TM2.0** (interactive traffic management between TMCs and in-car satnavs), and **NAPCORE** (`https://ertico.com/`). Because Australia aligns its 5.9 GHz ITS spectrum with ETSI standards, ERTICO directly informs TfNSW C-ITS architecture.
- **NACTO & Open Mobility Foundation (OMF):** Stewards of the *Global Street Design Guide*, **MDS (Mobility Data Specification)**, and **CDS (Curb Data Specification)** (`https://www.openmobilityfoundation.org/`).
- **WEF Centre for Urban Transformation & McKinsey Center for Future Mobility (MCFM):** Executive toolkits on Advanced Air Mobility (AAM) vertiports, Software-Defined Vehicles (SDVs), and urban autonomy (`https://www.weforum.org/`).
- **TRB (Transportation Research Board — US National Academies):** Publisher of the **Highway Capacity Manual (HCM)** and **Transit Capacity and Quality of Service Manual (TCQSM)** (`https://www.nationalacademies.org/trb`).