

MOBILITY NEWSLETTER

Research and reporting from California, the U.S.,
and around the world.

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Gamification for Mobility:

Encouraging more sustainable travel behavior



Achieving climate, equity, and transportation efficiency goals will require **significant changes** in personal travel behavior

Personal travel contributes to significant environmental and economic challenges. Across the United States:



About 20% of emissions that contribute to climate change stem from personal travel. ([S](#))



Households spend disproportionately on transportation, with the average household paying \$12k in 2023. Lower-income households pay proportionately more and are burdened by this cost. ([S](#))



The average driver spends 51 extra hours in the car each year due to traffic. In L.A. and S.F., this number is nearly 100 hours. ([S](#))

Despite these outcomes, **real-world constraints** prevent many people from changing their behavior:

- Cost of transportation
- Service availability matching trip needs
- Lack of adequate physical infrastructure
- Convenience of travel experience (payments, wayfinding, etc.)
- Social stigma / biases / preferences associated with certain travel habits

Travel behavior is **deeply ingrained**; to reduce impacts we must influence both supply and demand for sustainable mobility

1 Mobility Supply

First, we need to create infrastructure and policies that solve the real-world constraints, unlocking the potential for behavior change.

2 Modal Demand

Then we can design rewards, incentives, and programs that make sustainable options more attractive and accelerate adoption.

Finding the right balance between these strategies can allow us to **magnify the response of individuals to changes in the real-world mobility ecosystem, even if they are small.**

It is important that wherever financial incentives are provided to the public they are distributed in a way that **prioritizes equity**, and that we **maximize the impact** of public funds on emissions reduction, safety improvements, and reduced congestion.

“Choice architecture” and “nudging” are increasingly used to facilitate beneficial shifts in personal decision-making

The concept of **choice architecture** was popularized by economists Richard Thaler and Cass Sunstein’s “nudge theory.” The field of choice architecture explores how people make decisions between the options that are presented to them and examines how these choices can be influenced based on the way options are presented in the “**decision environment**.”

Within the context of daily choices, the decision environment includes both the **real-world constraints** like cost, convenience, and social stigma, in addition to **other, seemingly small factors** like how physical and digital interfaces are structured, how pricing or convenience is communicated, and in which order options are presented.

Like all choices, decisions about transportation are the result of numerous “**micro-choices**” that people make when ingesting the information that is presented to them; every intervention matters.

“A nudge... is any aspect of the choice architecture that alters people's behavior in a predictable way without forbidding any options or significantly changing their economic incentives.

*To count as a mere nudge, the intervention must be **easy and cheap to avoid**. Nudges are not mandates. Putting fruit at eye level counts as a nudge. Banning junk food does not.”*

Thaler, Richard, and Cass Sunstein (2008). [*Nudge: Improving Decisions About Health, Wealth, and Happiness*](#). Penguin Books.

Gamification is one way choice architecture is widely applied in the commercial sector, and can be adapted for mobility uses

“Gamification” refers to the practice of designing experiences to trigger the same **psychological feedback mechanisms** that make us enjoy playing games. While it may seem silly, gamification can trigger **significant changes in behavior** even when the offering doesn’t change meaningfully.

Trigger Mechanisms	Accomplishment	Ownership	Scarcity	Avoidance
	Offer “high fives” for completed actions	Allow exchangeable and redeemable points	Utilize count down timers to prompt swift action	Communicate user consequences
	Provide “quest lists” users can work through	Create personal avatars for users	Pace prizes to avoid “abundance” mindset	Disincentivize inaction to entice responses
	Create leaderboards	Provide a marketplace for virtual goods	Communicate limits on prize redemption, even when they are very high	Create prize expiration dates
	Provide step-by-step guidance and tutorials	Create pet companions for users	Permit actions only in certain time intervals	
	Unpredictability	Social Influence	Empowerment	Epic Meaning
	Create “easter eggs” for users to discover / unlock	Create opportunities to invite friends / share	Allow users to learn how to “play” over time	Communicate impacts of user actions
	Provide occasional random rewards	Offer “trophy shelves” to show off achievements	Encourage discovery / creativity to capture long-term interest	Utilize narratives to demonstrate the value of participation
	Utilize visual storytelling	Enable “water cooler” moments among users Allow gifting of rewards between users	Create “boosters” that allow users to advance quicker for a short time Unlock new options when users reach milestones	Create teams / user groups that can work together or compete with other groups

There are many different ways to “gamify,” with techniques that appeal to the diverse psychological feedbacks that motivate us.

As is shown in the list to the left, there are multiple key “drives,” such as **accomplishment**, **sense of scarcity**, or **social influence** that influence human behaviors and can be leveraged through gamification.

Each drive can be “triggered” to prompt user actions by creating different experiences, listed left, such as:

- “earnable” benefits / points that build up over time
- competition or socialization with other participants
- playful digital design / storytelling

Gamification can be used by **different stakeholders** across their interactions with mobility users. Here are a few examples:

FutureCard™

Payments company

Reinforced Behavior:

Reaching the subway's weekly fare cap with cash rewards

Gamification Techniques:

Futurecard offers reloadable debit cards that encourage "green" spending. If you reach the weekly fare cap tapping with your Futurecard on the NYC MTA you get a 5\$ cash back reward. (S) Additionally, Futurecard has tested free giveaways to encourage ridership; in December 2023, all users utilizing their 100% cash-back reward on MTA (free rides) were entered into a raffle to win free rides for all of 2024 – over 100,000 rides were logged by futurecard users in the month.

rideamigos

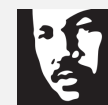
Benefits management service

Reinforced Behavior:

Sustainable commuting with employer benefits

Gamification Techniques:

RideAmigos helps employers manage benefits like free transit passes, memberships for bikeshare, and subsidized parking. By allowing enrolled employees to track behavior and creating opportunities for them to win rewards, show off progress, and compete with coworkers, they can increase usage of benefits. (S) Employers using Pave Commute, one of RideAmigo's apps, have seen rapid voluntary adoption and significant reductions in car travel. (S)



King County

Public Transit Operator

Reinforced Behavior:

Traveling on modes other than cars with trip rewards

Gamification Techniques:

King County Transit, one of the primary transit providers in Seattle, Washington, offers riders a chance to earn free trips on transit or other privately-offered sustainable modes (Bird, Lime, Link, and Veo). By booking tickets using the Go Transit app, riders earn points that can then be converted into free rides. The program was launched in 2023, and currently has over 30,000 active users (S)

Looking ahead, gamification presents an **intriguing opportunity** to advance sustainable mobility and increase TDM impacts



Mitigating harm from transportation will require **significant changes** in personal mobility behavior



Beside supply-side interventions, gamification can help **encourage demand** for sustainable mobility



Choice architecture and gamification help encourage sustainable behavior **without forcing people** or banning specific habits



Gamification can be paired with financial incentives and rewards that **increase affordability** for those that need it

