

Integrating Telematics into Your Business and Rating Plans: Governmental Perspective

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What is PAYDAYS Pricing and its Relationship to Usage-Based Insurance (UBI)?

- Pay-as-you-drive-and-you-save (PAYDAYS) pricing converts hidden and lump-sum costs of auto ownership and usage to transparent, variable costs.
- Such costs may relate to insurance, but also to parking, vehicle taxes and fees, or to the car itself through car sharing.

Why PAYDAYS Pricing?

- Most of the costs of owning and operating a vehicle are fixed.
- The financial incentive not to use personal vehicles heavily is relatively small.
- Many households, especially low-income ones, would prefer variable costs to fixed ones.
- Various studies project substantial driving reductions, public policy benefits, and consumer savings resulting from PAYDAYS pricing.

UBI Is Not a New Concept (But Tools to Offer It Are New)

- As early as 1929, virtues of charging for car insurance by the mile were recognized.
- Concept promoted by Nobel economist William Vickery in his 1968 work: “Automobile Accidents, Tort Law, Externalities and Insurance.”

Results of PAYDAYS Pricing

- Cuts vehicle miles traveled (Brookings, MIT)
- Curtails crash claims in excess of driving reductions
- Relieves congestion at a rate greatly exceeding driving reductions
- Diminishes air pollution and carbon emissions
- Lowers infrastructure costs
- Strengthens cities and lessens urban sprawl
- Provides substantial consumer savings
- Increases insurance company profits

Enhancing PAYDAYS Pricing to Maximize Driving Reductions (Governmental Objective)

- Direct and transparent per-mile or per-minute-of-driving pricing—avoid rebates
- In-vehicle graphic displays of “insurance pricing meter” with e-mail and Web summaries
- Frequent billing without automatic bill payment
- Transit pass discounts for UBI customers or bundling transit passes with a few free miles of insurance
- Individualized assistance to identify alternatives
- Peer comparisons and “regret lotteries” to encourage continuous mileage reductions

Research Provides Actuarial Justification for UBI

- Research from Massachusetts that combines vehicle mileage and loss cost data shows a compelling relationship (R^2 rises 0.15 to 0.72).
- Host of mostly small instrumented vehicle studies consistently shows a strong linkage between certain driving habits and crashes.
- Actions of insurance companies also suggest actuarial underpinnings for UBI.

Instrumented Vehicle Studies Support UBI

- “100-Car Naturalistic Study” in No. VA found that the 12.5% most dangerous drivers had over 100X the crash risk of the 12.5% safest drivers.
- An Israeli 103-vehicle monitoring study found that aggressive drivers were responsible for 16.6X the crash costs of the safest drivers.
- A 95-driver test of incentives to reduce speeding in Sweden led to a decline in speeding frequency from 15% to 8% of driving time.

Typical Company Approach to Introduce UBI Pricing— Premium Discounts for Data

- Willing participants are likely lower risk
- Gets data that companies need to offer an attractive UBI product
- Pricing power comes with data control

Strategy Will Fail Beyond the Short Term

- Customers will ultimately gain control of their data and use it to get competitive price quotes, as they do today for non-UBI policies (hastened by ACORD common data standard, USDOT SBIR RFP which closes April 4, 2014).
- Why? Because customers have smart phones and their vehicles have OEM-installed telematics, the data will be theirs to share.
- A “green brand” comes from an external credible source (e.g., CERES/NRDC/EDF *PAYD Insurance Product Rating System*; State Climate Action Plan UBI goals tied to driving reductions).

Evolutionary UBI Products Fail with Revolutionary Demographic Changes

- Changes noted in Zogby's "The Way We'll Be," CCC Info Services "Crash Course," etc.:
 - Young people delay licensure (68% of 19 year olds in 2012 v. 87% in 1983 in the U.S.), own fewer cars, live in cities, and take transit
 - "Automobility" increasingly met through car sharing (beginning on college campuses), "dynamic ridesharing" (e.g., casual carpooling, Zimride, Avego/-Carma), and peer-to-peer "taxis" (e.g., Lyft, Sidecar)

Insurance Industry Failings

- Auto companies respond with car sharing partnerships; insurance companies are unresponsive.
- Instead of looking at peer-to-peer carsharing as a business opportunity, insurance companies threaten or hide (NY Times, 3/17/12).
- Personal lines carriers avoid "personal vehicle sharing" and "public or livery conveyance" risks (ISO's related exclusion endorsements); very few insure the risk, let alone take account of countervailing risk reductions.
- Meanwhile...Consumer Federation of America report—Low-income households forced to pay high insurance rates.

Insurance Company and Regulator Flexibility Needed

- Be a leader and problem solver, not the problem.
- Don't over-price new risks; find constructive approaches to reduce exposure and price.
- Adopt to new markets—e.g., car owners want to rent their cars to their neighbors and some renters will become owners; build business relations now.
- Take heed of behavioral economics and U.S. Federal pilots.

Federal Government UBI Activities to Watch – General Research & Promotion

- A range of Federally-supported PAYDAYS pricing projects are slowly moving forward; results will be published.
- Government transportation funding shortfalls lead to mileage-based road user fee deployments (e.g., Oregon's 5,000-vehicle implementation); could, as NYC is doing, combine with UBI tests.

Federal Government UBI Activities to Watch – Data from Completed NDS

- Data collected for 3,147-participant, 6-city Naturalistic Driving Study until Dec. 2013
- 5.4M trips (consented drivers) and 49.6M miles
- 3,958 vehicle-years of data
- Road data for over 200,000 centerline miles
- Supplementary site data on traffic, weather, work zones, railroad crossings, crash histories, etc.
- Data access support beginning Jan. 2015; test site is up w/April 15 scheduled update (<https://insight.shrp2nds.us/>)

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Federal Government UBI Activities to Watch – Metropia App Actuarial Study

- Chosen by FHWA via a competitive solicitation, Metropia, Inc., with its Smartrek mobile app, and Illinois State Univ., Dept. of Finance, Insurance & Law.
- Preexisting Smartrek partnerships with several cities guide and reward users for traffic avoidance; app to also provide data on driving behaviors and likely crashes (triggering claims' surveys and claims' estimation for nonresponses).
- Additional partnerships sought to bolster amount of data and improve claims' cost information/estimation.
- Product to be publicly shared PAYDAYS pricing scheme(s)—reflective of driver behavior, roadway, traffic, and weather risks—and anonymized supporting data.

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Actuarial Considerations for the Long Term

- **Factors:**

- Advanced vehicle safety technologies and semi-automation features
- Vehicle-to-infrastructure and vehicle-to-vehicle communications (USDOT NPRM in 2015)
- Self-driving cars (NHTSA 2013 Policy Statement)

- **Impacts:**

- Fewer crashes
- Driver skill becomes less of a risk factor
- Driver or “operator” judgment likely to remain a key risk factor in crashes that do occur

Thank you!

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