Is Getting an Uber-Lyft from a Sidecar Different from Hailing a Taxi? The Current Dynamic Ridesharing Controversy

Carlos Sun, J.D., Ph.D., P.E. (Corresponding Author)
Associate Professor, University of Missouri, E2509 Lafferre Hall, Columbia, MO 65211-2200,
Email: sunc@missouri.edu
Phone (573) 884-6330, Fax (573) 882-4784

Praveen Edara, Ph.D., P.E., P.T.O.E.
Associate Professor, University of Missouri, E2509 Lafferre Hall, Columbia, MO 65211-2200,
Email: edarap@missouri.edu
Phone (573) 882-1900, Fax (573) 882-4784

Submission date: August 1, 2014
Word Count: 7196

Submitted to the Emerging and Innovative Public Transport and Technologies Committee (AP020) for consideration for presentation and publication at the TRB Annual Meeting, Washington, D.C. January, 2015

ABSTRACT
Ridesharing has a long storied history, beginning as car-sharing clubs during World War II and evolving into the current technologically savvy communities. It has traditionally enjoyed the support of public agencies at all levels of government because of the potential gains in congestion relief and environmental sustainability. However, the most recent incarnation of ridesharing, dynamic ridesharing, has the taxi industry and the taxi regulatory agencies crying foul. They allege that dynamic ridesharing companies engage in unfair and deceptive practices, compete unfairly by skirting regulatory requirements, make false representations, and interfere with protected contractual relationships. This paper examines the central question in this controversy, “Is dynamic ridesharing just a taxi in ridesharing’s clothing?” The examination of ridesharing history and modal characteristics such as service provided, travel patterns and routes, financial compensation, and physical characteristics produces a negative answer. However, this new and exciting industry could benefit from regulations that ensure equality of access for the disabled and other classes of persons, while protecting the consumer from credit fraud, personal data breach, and insurance gaps.

INTRODUCTION
In the past few years, several commercially successful ridesharing companies have surfaced which resulted in much litigation in various states. One distinguishing feature among these new companies is the use of smart phone applications for matching passengers with drivers in real-time. Some examples of such companies include Uber, founded in 2009, Lyft, founded in 2012, and Sidecar, also founded in 2012. The types of plaintiffs in such litigations include taxi drivers, taxicab companies and dispatchers, taxi regulatory agencies, and municipalities. ¹

There are four main types of claims brought forth by the aforementioned plaintiffs. The first type of claim alleges unfair and deceptive practices under state law. This claim alleges that the
defendant is operating illegally under local rules and regulations governing vehicles-for-hire and that the defendant did not obtain the necessary licenses and certificates to operate as taxis.\textsuperscript{2} The second type of claim alleges unfair competition under state law and common law. One court defined this type of claim as “business conduct which is contrary to honest practice in industrial or commercial matters”\textsuperscript{3}, and another court defined it as “operating service without incurring the expense of complying with state law and local ordinances”\textsuperscript{4}. The third type of claims involves federal statutes: the Lanham Act\textsuperscript{5} and the Racketeer Influenced and Corrupt Organizations Act (RICO)\textsuperscript{6}. An example of a specific claim under the Lanham Act is the allegation that the defendant made false representations that are "likely to cause confusion . . . or to deceive as to the affiliation, connection, or association of such person with another person, or as to the . . . approval of his or her goods, services, or commercial activities by another person."\textsuperscript{7} Thus plaintiffs allege that a defendant misrepresents ridesharing as affiliated with a taxi company or dispatch.\textsuperscript{8} A RICO claim alleges that a defendant commits racketeering involving an enterprise affecting interstate commerce and defrauds or obtains money or property by means of false pretenses, representations, or promises.\textsuperscript{9} An example from a ridesharing case alleges that a defendant violates the regulatory framework and unlawfully diverts sales reserved for permitted participants in the protected vehicle-for-hire market.\textsuperscript{10} The last type of claim is tortious interference with contractual relations. The allegations are often two-fold and concern both parties in a contract. One claim concerns ridesharing interfering with taxi drivers’ contract with taxi companies. An example is the allegation that a taxi driver could violate his/her taxi affiliation agreement of not using a competing dispatch service if he/she were to sign up with a dynamic ridesharing company as a driver.\textsuperscript{11} Another claim concerns ridesharing interfering with future business relationship between taxi companies and passengers, since there is a protected and defined market.\textsuperscript{12} Thus the critical issue is whether dynamic ridesharing is operating in a protected market and interfering in relationships in that market.

One central question cross-cutting all four types of claims is whether the recent ridesharing platforms are de facto taxi services that should be regulated under the same regulatory framework as existing taxi services, or are instead more like traditional ridesharing thus not subject to existing regulations. This same question is also being debated among legislative bodies. Even though the answer to this question is not necessary binary, it is useful to frame the debate in terms of the two opposing possibilities.

One difficulty in analyzing ridesharing platforms is that they are not homogenous with respect to various modal characteristics. For example, Uber offers taxis and limousines, but only the UberX service\textsuperscript{13}, which involves private vehicles, is the most relevant in this ridesharing analysis. Nevertheless, this article attempts to discuss some relevant issues associated with dynamic ridesharing, though the analysis might not be fully applicable to a particular ridesharing platform or jurisdiction.

There are two main motivations for this paper. One is to examine the legal issues surrounding the dynamic ridesharing controversy. The dynamic ridesharing community has been embroiled in lawsuits filed by various parties throughout the US, and court decisions will help to shape the form and direction of the community’s future. Because some of these platforms are so recent, there has been little published academic work on the subject, only news reports and commentaries on the current controversy. Some of the most recent academic work on ridesharing
were written around 2013, e.g. (1), (2), and (3), before the current wave of litigation in 2013 and 2014. For example Furuhata et al.’s (1) list of ridesharing match entities does not include some of the companies involved in the current controversy, though it covers a precursor to one of them. Thus another motivation is to build upon previous research on ridesharing to evaluate the most recent ridesharing controversy.

BACKGROUND ON RIDESHARING

Definition of Ridesharing

Before diving into the central question, it is helpful to offer a definition of dynamic ridesharing and to present a brief history. There are many names for ridesharing or carpooling. For example in the United Kingdom, ridesharing is known as liftsharing (4). Whereas traditional ridesharing has been defined by some as “grouping of travelers into common trips by car or van” (3) or a “mode … in which individual travelers share a vehicle for a trip and split travel costs such as gas, toll, and parking fees with others that have similar itineraries and time schedules” (1), the recent dynamic-style ridesharing requires a more distinguishing definition. Amey et al. (2) reviewed many definitions of dynamic ridesharing and presented some of the unifying characteristics behind those definitions. One is the occasional nature of these arrangements in contrast to the fixed schedules and origins/destinations. Another is the lack of advanced notice and the ability to quickly develop a match, hence dynamic (5). Thus borrowing from previous definitions, dynamic ridesharing is defined concisely here as “a system that facilitates the matching of drivers and passengers on a one-time basis with no requirement of advanced notice, using location-enabled smart phones.”

To further explain the technology used in this definition, the most salient features of smart phones are discussed as follows. Location-enabled means that the smart phone uses some type of technology to locate the current position of the device such as a Global Position System (GPS) or multilateration of cell towers. A ridesharing system uses such position information of both potential drivers and passengers, and performs matching based on some type of algorithm that optimizes origins and destinations and other preferences such as driver and passenger history. Both drivers and passengers are pre-registered in such systems, meaning that user profiles have been established to facilitate ride matching and financial transactions. After a trip is completed, a two-way evaluation can be conducted. Such an evaluation helps to improve future matches but also serves as quality control to weed out problematic drivers and passengers.

Brief history of ridesharing

Chan and Shaheen (3) divided North American ridesharing history into five major phases: 1) World War II (WWII) car-sharing clubs, 2) oil-crisis motivated in the 1970s, 3) organized ridesharing from 1980 to 1997, 4) reliable ridesharing from 1999-2004, and 5) strategy-based technology-enabled ridematching from 2004-2012. In the early phase, the US government issued regulations promoting ridesharing for work, and encouraged the creation of bulletin boards for matching riders and drivers. The oil crises in the 1970s led to a national focus on fuel conservation and resulted in governmental efforts to sponsor ridesharing and the enactment of the 55 mph national speed limit, the Emergency Highway Energy Conservation Act of 1974 (EHECA). EHECA provided specific funding for carpool demonstration projects. Various federal agencies such as the US Department of Transportation (USDOT), the Federal Highway Administration (FHWA), and the US Department of Energy (USDOE) all established programs...
to increase ridesharing. Even federal-aid highway acts contained provisions to develop vanpools. The height of ridesharing was arguably in the 1970s when it had a 20.4% modal share, a bi-product of the energy crises (6).

During the third phase, more state, local, and regional governments developed programs to reduce vehicular trips and to promote ridesharing. The fourth phase coincided with the development of technology for traveler information systems in conjunction with the burgeoning field known as Intelligent Transportation Systems. Starting in the 1990s several ridesharing demonstration projects have been conducted (7). These projects include, for example, the Bellevue Smart Traveler, the Los Angeles Smart Traveler, the Sacramento Dynamic Rideshare Demonstration, the Coachella Valley TransAction Network, the Seattle Smart Traveler, RideNow, Goose Networks, RideCell, Avego, and OPTI-TRANS. While many of these projects were implemented in California, there were a few located in other cities and internationally. One reason for some of the demonstration projects not living up to expectations was the lack of technology that exists in the modern dynamic ridesharing community.

The fifth phase continued to exploit advances in technology and specifically the use of social media (e.g. Facebook) and of the internet. Unfortunately, after the high watermark in the 1970s, vehicle occupancy rates in the US have been low and decreasing over the past few decades while daily person trips have steadily increased from 2.02 in 1969 to 3.79 in 2009 (8). Work trips had the lowest occupancy of all trip purposes, steadily decreasing from 1.3 in 1977 to 1.13 in 2009. Other trips purposes such as shopping and other family/personal errands have also been steadily decreasing. Only social and recreational trips have seen a slight increase in occupancy.

This paper suggests a sixth phase of ridesharing, a variant of the fifth phase, that captures the multiplication in commercially successful ridesharing companies circa 2012. One distinguishing feature is the success achieved by these companies that was envisioned in many of the previous government-funded demonstration projects. Even though ridership and modal share data is unclear at this point due to data collection difficulties and the rapidly changing industry, some surrogate measures reveal that demand could be significant. For example, there are news reports of significant number of drivers participating in such ridesharing programs. Technologically, the sixth phase focuses on the predominant use of smart phone apps instead of web-based tools. And many of the recent companies are private entities with no government funding or ridesharing subsidies.

One way of characterizing the ridesharing continuum is via two extremes: the least facilitated and the most facilitated. In the least facilitated form, a passenger secures a ride from a family member or a friend and there are no transactions costs and no third parties involved or services provided by third parties. In the most facilitated form, there are transaction costs, e.g. 20% fee, and services provided such as apps and the associated ability to connect with a large number of passengers, matching algorithms, screening of drivers and passengers, quality rating of both drivers and passengers, financial transaction assistance, and excess insurance coverage. The sixth phase of ridesharing falls under the most facilitated end of the continuum.

EXAMINATION OF MODAL CHARACTERISTICS
Taxi laws and regulations could exist at various levels of government from state to local government, and taxi regulatory agencies could be situated at different levels including county and municipality. In this examination of ridesharing and taxis modal characteristics, taxi regulations that are common to most jurisdictions are used to describe the taxi mode, despite differences among jurisdictions.

A typical definition of a taxi revolves around the characteristics of the service: the arrangement, the travel patterns, the compensation, and the vehicle. The following is an example of an ordinance defining a taxicab:

“On-Call Taxicab: shall mean any motor vehicle engaged in the business of carrying persons for hire on the streets of the city and/or county, whether the same is hailed on the streets by a passenger or is operated from a street stand, from a garage on a regular route, or between fixed termini on a schedule, and where no regular or specific route is traveled; passengers are taken to and from such places as they designate; the charge for motor vehicles is made on the basis of distance traveled as indicated by a taximeter. On-call taxicabs shall seat a minimum of three passengers in the rear seats.”

Thus according to this ordinance, a taxicab provides a vehicle for hire service; is arranged by being hailed, accessed via a taxi stand, or dispatched; travels a fixed or a variable route chosen by a passenger; possesses a taximeter and computes fares based on distance traveled; and has a capacity of at least three rear-seat passenger. An example of a definition for a “vehicle for hire” is “any motor vehicle engaged in the business of carrying persons for hire… where the compensation for said transportation is made either directly or indirectly.” The “vehicle for hire” definition above from a taxicab commission is consistent with the state law that empowers the commission to regulate “any person who engages in the business of transporting passengers in commerce … in any motor vehicle … not more than eight passengers, including the driver.”

There is no controversy that dynamic ridesharing and taxicabs use the same types of passenger vehicles in contrast to public transit buses or that they are demand-responsive. However, are dynamic ridesharing companies engaged in the business of transporting persons, and are such companies compensated for the act of transportation?

**What Services are Provided?**

In examining the services provided by ridesharing companies, a central issue is the ownership and control of vehicles. Taxi companies take different forms and range from the total taxi firm to the permit only lessor (9). At one extreme are the historical taxi firms who own and operate all aspects of the taxi service including vehicle maintenance and dispatching. These firms also possess a physical facility and hire drivers as employees. At the other end are the independent owner-operators, the so-called medallion drivers. These drivers have to provide for all aspects of the operation, such as a vehicle, insurance, maintenance, and permit. These drivers may own a medallion or lease it from a permit holder. In comparing dynamic ridesharing and taxi, it is clear that the total taxi firms are very different from ridesharing. That is because ridesharing companies do not own, maintain or operate vehicles themselves (1). Nor do they hire drivers as employees, or use any type of dispatch service. However, how different is ridesharing from the independent taxi operator? Do ridesharing companies exercise any sort of control over their
affiliated drivers that is similar to the independent taxi operator and different from private
individuals who carpool without being affiliated with a ridesharing company?

Some of the services provided by ridesharing companies are matching of passengers and drivers
via an app, facilitation of financial transactions, provision of excess insurance coverage, and
surveying and rating of both drivers and passengers. As discussed by Chan and Shaheen (3) and
Furuhata et al. (1), one of the historical barriers to ridesharing is the informal and disorganized
fashion in which ridesharing is coordinated thus lacking a critical mass. The modern ridesharing
app overcomes previous barriers by providing a large database of passengers and drivers
connected via the internet. This matching performed in ridesharing is fundamentally different
from taxi dispatching in many respects. In a dispatch system, a taxi dispatcher sends a taxi to
pick up a passenger at a specific location. In contrast, no dispatching occurs in a match system;
there is no third-party entity involved in deciding individual transactions, only two parties. As is
ture of historical ridesharing bulletin boards, requests for rides and/or available drivers are made
known in ridesharing. A passenger selects a driver based a particular set of criteria, and a driver
could accept or reject that request; this is the so-called two-sided matching (1). One could make
an argument that rideshare matching has the potential for discrimination in contrast to taxi
regulations that require the acceptance of a dispatch. But that argument, though a valid concern,
serves to highlight the difference between the two systems.

The difference between a matching and a dispatch system is also different from a logistics point
of view. Agatz et al. (10) reviewed the existing dynamic ride-sharing optimization literature. The
authors explain that the difference between dynamic ridesharing and conventional on-demand
transportation, such as taxis, primarily stems from the supply of drivers and vehicles. In dynamic
ridesharing optimization, driver preferences need to be considered, since they are independent
entities who appear dynamically at various locations, making the prediction difficult. Also, there
is no depot location associated with dynamic ridesharing, thus routing decisions involve
deviations of a driver’s direct path from an origin to a destination. The optimization problem
involving new riders and drivers continuously entering and leaving the system is vastly different
from one where the supply side is better known and less certain. In general, a passenger only
considers potential drivers that are near in physical and temporal proximity. Thus another
distinguishing mark between matching and dispatching is the person who selects the vehicle. In a
match system, it is a passenger. In a dispatch system, it is a dispatcher from a taxi company.

Vehicle Travel Patterns and Routes
With taxis, passenger pickup could occur at different locations. With a street hail, a passenger
can request service from a passing taxi. This form of pickup is difficult to optimize since drivers
are unable to predict accurately when and where a passenger will appear. Thus drivers circulate
near “passenger-rich” areas to maximize their business potential. And a potential passenger will
need to be exposed to the elements in order to hail the taxi. With a taxi stand, a fixed location is
provided where passengers and taxis could meet. However, because there is no pre-arranged
time, sometimes either passengers or taxis still spend time waiting for each other. For a centrally
dispatched trip, a taxi is sent to pick up a passenger at the passenger’s location. The dispatched
trip could be arranged ahead of time or occur immediately. Overall, taxi travel patterns result in
significant inefficiencies; approximately half of all taxi miles traveled is unpaid mileage, thus
significant time and fuel is spent circulating or reverting to depots or stands (11). Dynamic
ridesharing does not occur in the form of the first two type of pickups, i.e. street hail or taxi stand. Even with the third type of pickup, taxi is still different than ridesharing, because there is still travel required from a depot to the passenger, and there is the one taxi company doing the dispatching. This differs from multiple drivers competing for a single passenger request.

Compensation and Financial Considerations
Chan and Shaheen (3) stated, “Ridesharing differs from for-profit taxis and jitneys in its financial motivation. When a ridesharing payment is collected, it partially covers the driver’s cost. It is not intended to result in a financial gain.” This may be true of some ridesharing systems in the past, but modern ridesharing companies appear to be quite profitable. For example, Uber Technologies was valued at $18.2 billion and has attracted $1.2 billion in capital from various investors (12). As a point of reference, United Continental Airlines was valued at the same amount. But why should payments be restricted to only partially covering a driver’s costs and not covering the full costs? Even in a very casual ridesharing arrangement between friends, a person could offer to pay for gas by filling up an entire tank or to pay for food. Compensation, as defined by some regulatory agencies, could include anything of value, including gas or food given voluntarily. What if the cost of the fill-up or lunch exceeds the total cost of the trip, including vehicle ownership costs? Does that fact then subject such a family member to taxi regulations?

It is true that ridesharing has a long history of being supported by public agencies and non-profit organizations. But why keep the private industry from contributing to the future of ridesharing by using profit as an exclusionary definition? Furthermore the financial success of such ridesharing companies does not necessarily mean that they are not also motivated by other societal concerns such as congestion relief and environmental sustainability. The transportation field has many examples of private-public partnerships to the betterment of entire communities. For example, traffic management centers often partner with traffic information providers and the media in improving traveler information. For example, the I-95 Coalition, an alliance of transportation agencies, toll authorities, and universities, partnered with private data companies to provide real-time travel information to the public (13). Also, private-public partnerships have increased in highway construction in the form of tollroad agencies which enable the funding of new infrastructure. Even conferences related to ridesharing such as the Shared Use Mobility Summit (14) include a large number of for-profit companies such as Toyota, Siemens, State Farm Insurance, and Enterprise CarShare.

As explained in taxi regulations, such as the MTCVHC, the taxi charge is made on the basis of distance traveled. It is compensation for transporting a passenger from an origin to a destination. Whereas in ridesharing, a passenger could pay or donate to the driver for transporting him/her and also pay or donate to a ridesharing platform for making the ride match and for providing other related benefits such as driver/passenger pre-screening, driver/passenger rating, credit card processing, and excess insurance coverage.

Are Ridesharing Vehicles the Same as Taxis?
One public commission lists the distinguishing physical characteristics of taxis as paint, lights, and use of taximeters. (15) It is clear that private vehicles do not have taxi lights nor are they painted in a way that a reasonable person would confuse them as being a taxi. Even though one
ridesharing company uses a distinctive pink moustache to adorn the front grill of affiliated vehicles, those moustaches in no way resemble a taxi light or a taxi paint scheme. But the taximeter issue is more nuanced, as plaintiffs argue that a ridesharing app is functionally equivalent to a taximeter.

The national standard on taximeters is described in the National Institute of Standards and Technology (NIST) Handbook 44, Section 5.54 (15). In comparing taximeters and smart phones, two major issues are the actuation of fare-indicating mechanism and the provision for security seals. A taximeter calculates fares based on the combination of distance traveled and time elapsed and is actuated by a distance mechanism whenever a vehicle is in motion. Thus the taximeter is directly connected to a vehicle’s speedometer via a physical wire harness. This physical connection is important because there are security seals so that no adjustments, alterations, or replacements can be made to the taximeter without mutilating the seals. In contrast, a smart phone uses GPS or cell tower multilateration to compute a present location. The fundamental technology in a smart phone measures location, which is why a smart phone is also referred to as a location-based service in the field of Intelligent Transportation Systems (16). It is true that distances could be calculated after taking multiple GPS readings, but there is a difference between measuring distances directly from a vehicle and calculating distances using a smart phone. Furthermore, GPS is dependent upon the ability to communicate with enough satellites to derive the latitude, longitude, and elevation. Such communications could be interrupted in a parking garage or near tall buildings, thus it might not be able to continuously estimate distances. Lastly, there are no physical security seals on a smart phone or are those seals possible to create. Thus despite some similarities, a smart phone app is not a taxi meter.

Safety

Since public health and safety is a primary reason why industries are regulated, it is important to examine safety characteristics in comparing taxis and ridesharing. This comparison is not easily accomplished, since research is scarce on both the taxi and the ridesharing fronts. In terms of taxi safety, researchers have examined the safety of taxi drivers, passengers, traffic in general, and bicyclists and pedestrians. One unfortunate fact is that taxi driving is one of the most hazardous professions. According to OSHA (17), taxi drivers’ homicide rates were between 21 and 33 times higher than the national average for all workers. Some factors affecting taxi driver safety are working with cash (i.e. robbery incentive), being alone in isolated areas, servicing high crime areas, transporting passengers under the influence of alcohol, and operating at night in poorly lit areas. Knestaut (18) described taxi driver assaults or robberies as ending in two extremes: either the driver is not physically harmed at all or the driver is fatally injured. Even though many taxi companies accept credit, dynamic ridesharing uses credit only instead of cash thus minimizing one risk factor. And ridesharing uses a rating system that can filter out problematic passengers as well as allow drivers the choice on whom to accept. Driver choice, which improves safety in ridesharing, presents potentially an equality problem.

OSHA (17) recommends several measures for reducing occupational risk including the use of GPS tracking devices in case of distress, the video recording of passengers to identify passengers in cases of assault, and the installation of a bullet-resistant glass to separate drivers and passengers. Dynamic ridesharing provides similar safety benefits to GPS and video, such as the GPS tracking of both the driver and the passenger so that the passenger is a known entity. Amey
et al. (2) comments that such double-tracking also reduces stranger danger, since both parties have established profiles which require some type of verification. Even though the installation of a physical barrier does improve taxi driver safety, it has an unintended consequence of decreasing the safety of passengers in the event of a crash. Schaller (19) examined New York City statistics and found that taxi passengers are three times more likely to be seriously injured in a crash than passengers in other vehicles (21% vs. 9%). He cited one factor for the higher risk as the hard physical partition installed on taxis. Another factor was passenger reluctance to wear seatbelts which is likely influenced by the waiving of seatbelt laws for taxis in certain jurisdictions.

There is very little research on pedestrian and bicycle crashes with taxis but an Australian reference (20) found that accidents and collisions with taxis are over-represented, especially accidents that result in fatalities and serious injury. One reason for pedestrian and bicyclist collisions with taxis is termed “dooring” which is when a passenger leaves a door open in the path of others. Li (11) cites accidents as one of the major concerns passengers have when traveling in a taxi.

The previous discussion of safety lacks crash statistics from ridesharing. Most police report forms, which is the source of safety data used by most traffic safety researchers, do not contain a field that identifies a vehicle as involved in ridesharing. It is possible that such information could be discovered via the reading of the police narrative, but the accuracy is not guaranteed and it would require the labor-intensive review of crash image files. Dynamic ridesharing companies are tracking the safety of affiliated drivers, but it is not known if that data is available or reliable.

**Public Policy Considerations: Potential Benefits and Drawbacks**

The potential benefits of dynamic ridesharing have been discussed by papers such as Levofsky and Greenberg (21), Amey et al. (2), Chan and Shaheen (3), and Furuhata et al. (1). One benefit is congestion relief and elimination of trips or less efficient trips that involve dispatching from long distances. Levofsky and Greenberg (21) cited the USDOT in explaining how, historically, the decrease in vehicle occupancy accounted for more of congestion increase than population growth. Along with decreased congestion come the related benefits of environmental sustainability: pollution and fuel usage reduction. The National Environmental Policy Act (NEPA) established the national public policy to promote environmental quality and sustainability. NEPA established procedures for performing transportation planning, including the planning of different modes. Some public health researchers (e.g. Frumkin (22)) suggest that increases in auto travel have a negative effect on both physical and mental health, due to factors such as commuting stress and reductions in physical activity. The reduction in parking requirements and costs is another potential benefit related to the elimination of trips.

Dynamic ridesharing has the potential of increasing the ridesharing mode for occasional and immediate trips, two types of trips that have been difficult to accommodate with traditional ridesharing. The conversion of single occupancy vehicular trips into multi-occupancy and the matching of passengers to proximate vehicles could achieve several operational and societal benefits. Whether those benefits will actually be realized in the long term will depend on many factors including public acceptance and the size of the resulting modal share.
The US has a national policy of providing equal opportunity employment to women and to prevent discrimination. This policy is stated in Title VII of the Civil Rights Act of 1964 and enforced via the Equal Employment Opportunity Commission. According to Schaller (23), taxi driving is one of the most predominantly male occupations in the U.S., with the female driver share being around 3-4% for large metropolitan areas like Chicago and New York and 13% nationally. There is some evidence that dynamic ridesharing is attracting a larger share of female drivers (e.g. Swan (24)), but there has been no independent confirmation or research.

Along with potential benefits come potential drawbacks to dynamic ridesharing. One potential drawback that was alluded to throughout this article is discrimination, since drivers can reject requests for rides. In cases where discrimination is based on race, ethnicity, gender, or other classes that are protected as matter of public policy, this is a serious issue. However, if drivers were to reject requests because of concerns for personal safety, then how should the worthy factors of safety and equality be balanced? And can the ridesharing industry itself implement safeguards against discrimination?

As a matter of national policy, the Americans with Disabilities Act (ADA) of 1990 prohibits discrimination on the basis of disability. The Federal Transit Administration (FTA) does not require a private entity, such as taxi service, to purchase an accessible automobile, and neither are taxi commissions required to use licensing and regulatory authority to mandate that disabled passengers be afforded meaningful access to taxis. However, municipalities and taxi commissions could voluntarily require operators to own accessible vehicles. Could the dynamic ridesharing industry, either voluntarily or through regulations, emphasize accessibility?

A technology-related drawback is dynamic ridesharing’s reliance upon and use of personal information for both passengers and drivers. Such information can include credit card numbers, social security numbers, address, and trip information. The theft or misuse of such information could result in credit fraud or an invasion of privacy. At the very least, there should be ridesharing regulations in place that protect personal information and provide for remedies in case of a data breach. But at the same time, the use of electronic financial transactions eliminates one primary motivation for driver robberies, and the tracking of passengers both deters crimes and provides investigative and prosecutorial evidence in case a crime is perpetrated against a driver. The lack of evidence is one difficulty in solving taxi driver murders (18). Also, a compiled database of drivers and passengers allows the filtering of persons who exhibit unacceptable behavior. Ridesharing has been referred to some as the “invisible mode” because of the difficulty in collecting data (3). But dynamic ridesharing has technological capabilities that allow the cost-efficient gathering of integrated data in contrast to traditional passenger intercept surveys which are costly and require data fusion with passenger trip data.

Adequate insurance is a concern in dynamic ridesharing. Even though all states require automobile liability, such insurance could be low. And insurers might even deny claims involving ridesharing by claiming a livery exclusion (25). A dynamic ridesharing platform could pool the large number of drivers to negotiate a favorable excess insurance coverage to account for potential gaps in coverage, such as the $1 million excess liability coverage provided by some companies.
Some have argued that dynamic ridesharing engages in income discrimination of passengers. This argument is questionable because dynamic ridesharing, so far, has a greater number of younger passengers; younger passengers tend to have lower incomes. In a Seattle study on taxi and ridesharing, Mundy and Cooper (26) found the age demographics of passengers for ridesharing to be younger than taxi and other for-hire-vehicle modes. Also, the same authors found that income distribution of ridesharing in the City of Seattle was shifted towards the lower incomes when compared to taxi passengers. The mode for taxi was between $100,000 and $149,999, while the mode for ridesharing was between $60,000 and $99,999. In addition, dynamic ridesharing is being operated on a donation model in some cities. This means a passenger is not required to pay anything at all for a ride, which could serve the lower income population well. However, some donation models track passenger payments and could reduce the match potential if a passenger has a track record of not donating anything.

Price discrimination is a potential drawback raised by some who oppose dynamic ridesharing. However, using a different pricing at a different time of day is a common practice in many transportation modes. For example, subways and tollroads could charge a different fee during peak service hours. From a transportation planning perspective, the rationale behind surge pricing is that a small reduction in peak travel can result in a large congestion reduction (21). And there are more costs incurred at peak travel periods because of the increased delay and congestion, and the resulting poor fuel efficiency at slower travel speeds. Thus demand-based pricing can incorporate the full impact cost into the fee.

CONCLUSION

This paper examined the current controversy between dynamic ridesharing and taxi companies and taxi regulatory agencies. The central question examined was, “Is dynamic ridesharing just a taxi in ridesharing’s clothing?” The answer was no, based on a review of the history of ridesharing, a comparison of modal characteristics between dynamic ridesharing and taxi, and an analysis of public policy factors. Examining modal characteristics, the dispatching of taxis and the ride matching of ridesharing work very differently, since a match could occur between a passenger and several potential drivers. The fact that some ridesharing platforms are for-profit should be inconsequential, especially since they could provide services such as app support, access to a large number of drivers and passengers, financial transaction tools, driver and passenger pre-screening, driver and passenger ratings, and excess insurance coverage. And a reasonable person would not confuse the appearance of a ridesharing vehicle with a taxi. On balance, public policy considerations weigh in favor of dynamic ridesharing as a complementary mode to taxi for serving the transportation needs of the US.

It is unfortunate that some people frame the recent dynamic ridesharing controversy as a struggle between the taxi industry and dynamic ridesharing. The obvious reason why it is reported in that fashion is because the controversy is currently realized via litigation. In civil litigation, a plaintiff is pitted against a defendant and the claims of the plaintiff are adjudicated and remedies are granted or denied. However, there are other established ways in which to resolve the concerns of the taxi industry without resorting to litigation. One reason for using an alternate approach is that another approach would incorporate more than just two voices of the debate and would lead to a more optimal resolution for an entire community. One alternative is to work through the relevant issues via the legislative process as a political question. At the state level, the legislature can
debate and enact laws that regulate the new dynamic ridesharing industry and grant powers to the appropriate local agencies to enforce those laws. Local governments can complement state level laws with local ordinances and regulations that would be the most appropriate for their local constituents. Both at the state and the local levels, all the voices of the various stakeholders would be heard, including many who do not currently have a voice such as transportation users.

One example of the legislative approach is the one undertaken by the California Public Utilities Commission (CPUC). The CPUC adopted new regulations applicable to dynamic ridesharing whom the commission named Transportation Network Companies (TNC). And when the Taxicab Paratransit Association of California objected to some of CPUCs decisions, the CPUC convened a workshop to hear stakeholders on issues related to TNC regulations. Thus all the relevant voices of the issue were heard through the public commenting process.

A second alternate approach to litigation is to advance dynamic ridesharing through voluntary dialogue among the stakeholders. Community efforts to discuss and bring about consensus on dynamic ridesharing can work in parallel with legislative debate and public commenting. An example of a community effort is the Shared Use Mobility Summit that took place in San Francisco in 2013. This summit included almost 200 diverse organizations involving public agencies, industry groups, insurers, car rental companies, car manufacturers, research institutions, and ridesharing companies. Examples of the summit sponsors include FHWA, Caltrans, State Farm, Toyota, the Transportation Research Board of the National Academies, and Zipcar. The future participation of organizations such as the Taxicab, Limousine, and Paratransit Association (TLPA) would enrich the current community efforts for advancing ridesharing.

There are many future research questions surrounding dynamic ridesharing. For example, what is the expected modal shift from taxi and other modes to dynamic ridesharing? And what are the driver and passenger motivations in choosing dynamic ridesharing? How could dynamic ridesharing serve the elderly and the handicapped to complement existing paratransit service? How much government intervention should there be in regulating this industry? Will dynamic ridesharing assist with the goals of congestion relief and environmental sustainability? And how will the insurance industry view private vehicles that are engaged in ridesharing?

The history of ridesharing shows that public policy in the US has favored ridesharing with the goal of increasing vehicle occupancies, as a travel demand management strategy. This is true of early car-clubs during WWII and of various related efforts throughout the years such as high-occupancy lanes, park-and-ride, and ridesharing demonstration programs. If national policy goals of congestion relief and sustainability are of such value, then why should private efforts in achieving those goals, such as dynamic ridesharing companies, be viewed with less favor?

REFERENCES


(9) Mundy, R. Houston Taxi Study. Tennessee Transportation & Logistics Foundation, 2014/


**LEGAL ENDNOTES**


12 *Complaint, Greater Houston Transportation Co. et al. v. Uber Techns., Inc.* et al. (S.D. TX 2014) (No. 4:2014cv00941) at 17.
14 *Complaint, Greater Houston Transportation Co. et al. v. Uber Techns., Inc.* et al. (S.D. TX 2014) (No. 4:2014cv00941) at 41.
16 e.g. the Federal-Aid Highway Act of 1976, Pub. L. No. 94-280.
17 e.g. *Matt McFarland, Uber’s Remarkable Growth Could End the Era of Poorly Paid Cab Drivers,* Wash. Post, May 27, 2014 (Innovations) (reporting 20,000 new drivers a month worldwide have joined Uber in 2014); *Taylor Soper, Number of UberX Drivers in Seattle Soars Past 2,000,* Geek Wire, July 21, 2014 (reporting there was around 2000 combined Lyft and Sidecar drivers as of March).
19 MTCVHC §101.58 2014.
21 This was the distinguishing feature noted by the CPUC “Unlike taxi cabs, which may pick up passengers via street hails, PU Code §5360.5 requires that charter party carriers operate on a prearranged basis.” In this sentence, we explained that prearrangement distinguishes TNCs from taxis.” (Decision, Order Granting Limited Rehearing Of Decision 13-09-045, Modifying Certain Holdings, and Denying Rehearing of the Remaining Portion of the Decision, as Modified, (Cal. Pub. Util. Comm’n 2012) (Decision 14-04-022) at 20.)
22 *e.g. San Antonio, Tex., City of San Antonio Code of Ordinances §33-003 (2014).*
27 49 C.F.R. §37.29.
28 e.g. *Noel v. N.Y. Taxi & Limousine Comm’n* 687 F.3d 63, 73 (2d Cir. 2012).
29 e.g. Notice of Proposed Settlement of Class Action, The Taxis for All Campaign et al. v. N.Y. Taxi & Limousine Comm’n et al., Civil Action No. 11 - Cv-0237 (S.D.N.Y. 2014) (agreement to require taxicab certificate owners to replace 50% of retiring taxicabs with accessible vehicles by 2016).
30 e.g. Contrast Missouri’s financial responsibility of $50,000 per accident for bodily injury (Rev. Mo. Stat. §303.025 (2014)) with MTCVHC’s requirement of $200,000 combined single limit per accident (MTCVHC §101.209 (2014)).