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### Abstract

With the advent of transportation network companies, or TNCs, as they are labeled by the state of California, there has been considerable discussion, legislative action, and lawsuits regarding their attempts to operate without being subject to local taxi, sedan, limousine, or private-for-hire regulations. Indeed, across almost every continent, Uber has attempted to simply disregard local city and airport rules and regulations established for all commercial ground passenger transportation carriers. Uber argues that it is not a transportation company but rather a technology company, and so by definition it is not subject to commercial vehicle regulations. As a result, fierce and expensive legal and legislative battles have been bitterly fought. However, these legal proceedings rarely address just why there are regulations for commercial vehicles and their drivers.

It is therefore incumbent upon public officials to learn from this phenomenon and design a taxi system that provides drivers a fair income opportunity and maximum utilization from vehicles, to offer and maintain a high level of service at reasonable rates to residents and visitors alike. A best guess is that the industry will experience a form of hybrid taxi/TNC type transportation firm that offers both services in competition with national TNC brands for a while, but that ultimately there will be re-regulation and TNCs will be included within the local regulatory framework. There may be an opportunity for statewide or even national taxi/TNC regulations, but as in the past, drivers will be vetted, entry will be restricted, and public safety in the form of commercial liability insurance for all drivers will be standard requirements.

### Key Words

- regulation
- services
- taxicab
- TNC
- transportation
- vehicles

### Distribution Statement

No restrictions.
WHY TNCs WILL BE REGULATED LIKE TAXIS—HISTORICALLY SPEAKING

Final Report
May 2018

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Sponsored by
University of Missouri–St. Louis,
Midwest Transportation Center, and
U.S. Department of Transportation
Office of the Assistant Secretary for Research and Technology

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The author would like to thank University of Missouri-St. Louis, the Midwest Transportation Center, and the U.S. Department of Transportation Office of the Assistant Secretary for Research and Technology for sponsoring this research.
INTRODUCTION AND BACKGROUND

With the advent of transportation network companies, or TNCs, as they are labeled by the state of California, there has been considerable discussion, legislative action, and lawsuits regarding their attempts to operate without being subject to local taxi, sedan, limousine, or private-for-hire regulations. Indeed, across almost every continent, Uber has attempted to simply disregard local city and airport rules and regulations established for all commercial ground passenger transportation carriers. Uber argues that it is not a transportation company but rather a technology company, and so by definition it is not subject to commercial vehicle regulations. As a result, fierce and expensive legal and legislative battles have been bitterly fought. However, these legal proceedings rarely address just why there are regulations for commercial vehicles and their drivers. By revisiting the history of taxi-type services, we can use history to give us a view of what regulations for TNCs will eventually become.

Early Coach-Drawn Service Regulations

The necessity for taxi-type service regulation within metropolitan areas originated a long time ago. The Romans relegated chariot traffic to outside the walls of Rome due to congestion and (horse-made) pollution. As for regulation of commercial vehicles or vehicles for hire, much of the current regulatory structure in Great Britain and North America stems from King Charles I of England, who initially forbade that “any hired coach be used or suffered in London” in 1635. This was viewed as a political move to appease the Thames Watermen’s guild, a long-established trade and monopoly for river passenger transportation. As wheeled coaches became more available, they quickly replaced the water-borne passenger mode as the preferred method of moving about London and many other cities. These horse-drawn carriages became extremely popular and were quickly crowding the streets.

It was rumored that the real reason King Charles proclaimed the ban on horse-drawn carriages for hire was that these carriages were disturbing Queen Henrietta in her sedan chair. He later softened this by decreeing that there could be 50 coachmen for hire in London, but they could not transport anyone less than three miles. He followed up shortly with royal preferences on horse specifications and buggy makes. Later, Charles II issued more licenses and established licensing fees and standards. Londoners ignored the King and continued hiring any coach they could, often from “inkeepers, brokers, and other tradesmen, intruders into the profession of coachmen” (Mingardi 2013).

Twenty years later, however, the British Parliament introduced an Ordinance for the Regulation of Hackney-Coachmen in London and adjacent places, which was approved in 1654. The legislation aimed to minimize the inconvenience caused by the increase and great irregularity of hackney coaches and coachmen in London, Westminster, and surrounding areas and made driving hackney coaches a profession. The legislation also paved the way for the first licensing of horse-drawn carriages in 1662, making it the oldest regulated public transport system in the world (MSN 2015).
Though the Act was only to remain in force for three years, it was the forerunner of every future act of Parliament concerning hackney carriages, including coaches, horse-drawn cabs, and taxis down to present day. The current licensing system is more modern, but some of its premises do date back to the 19th century (Butcher 2015).

Surprisingly, very little has been written about taxi regulations from the early years of King Charles until the turn of the 19th century and the birth of the automobile. The horse-drawn commercial for-hire coach had replaced water transport as the preferred mode of private transportation, not only in London but also in most of the world, or at least that part of the world heavily influenced by Great Britain. Similar to London, most cities had adopted some form of hackney regulations for horse-drawn carriages. Most city officials, like those in London, sought to bring order and ensure public safety for the horse-drawn for-hire carriage industry. This was done by placing limitations on the number of coaches, coachmen, or both, ensuring for public safety that only individuals without criminal backgrounds were permitted to drive, and mandating the inspection of carriages to ensure the public’s safety. It is worth noting that the problems that led to our earliest forms of public transportation regulations were congestion, pollution, and lack of driver and vehicle standards.

**Birth of the Automotive Jitney**

The invention of the automobile brought swift changes and a relatively quick end to the horse-drawn carriage industry. Early gas-powered vehicles were faster, cheaper to produce, and surprisingly very abundant in both Great Britain and North America. This quickly gave rise to the gas-powered taxicab and taxicab meter - which was invented by Gottlieb Daimler and called the Daimler Victoria. Gas-powered taxis were first used in Germany, Paris, and London and then came to New York in 1907 (Charity Cab 2015).

However, it was probably not taxi services that brought about initial regulation of gas-powered taxis. Rather, the turn of the century jitney services motivated cities and state public officials to revamp their outdated horse-drawn coach regulations to restrict what taxis could and could not do in serving the public. The swift pace of growth of jitney cab services offers an interesting parallel to the swift growth of the TNC and Uber.

It has been suggested that the first jitney cab ride occurred in Los Angeles, California, in July 1914, when L. P. Draper provided a passenger with a ride in his Model T Ford. He accepted a nickel, known as a “Jitney nickel,” for payment because that was the city’s streetcar fare (Mitchell and Farren 2014). Thus was born a hybrid service between the taxi, which would take a rider from point to point over any route the passenger or the driver choose, and the streetcar, which followed a regular route. The jitney service followed the streetcar line to pick up passengers who would otherwise take the streetcar but who chose to pay the same fare to a jitney for what was considered a better service. It was hybrid because it did not stay strictly on the streetcar line but often deviated a few streets to either side of the line to drop off passengers. However, once loaded, the jitney would proceed directly to the city center, while the streetcar continued its laborious procedure of stopping and starting for passengers every few streets.
Streetcar lines were also very crowded at peak times and slow because they stopped often to pick up and drop off passengers. Jitneys were a huge success because one could ride in relative comfort, although it was shown that people were willing to, and often did, stand on the sideboards for a ride on the jitney as opposed to the streetcar. Initially, it seemed that everyone who owned a Model T Ford in 1914 realized that there was a lot of money to be made as a jitney operator. Jitney operators included not only those who were unemployed, but also Model T owners who quit their jobs and went to work with their cars. In less than a year, jitneys were such a spontaneous and profitable service that they had spread all across the country. Historians estimate that there were 62,000 jitneys in the US in over 175 cities by 1915 (Mitchell and Farren 2014). It is surprising to note that jitney service grew much faster in 1915 than Uber did in 2015.

Needless to say, streetcar line owners were devastated by the loss of revenue to these thousands of unregulated upstarts. Streetcar line owners paid considerable city fees and taxes, so there was tremendous pressure to stop this dangerous jitney service. Newspapers reported every accident, while officials complained that jitneys should not be permitted to operate along streetcar lines and insisted that they should not deviate from their routes once they were in operation. It was also argued that jitneys were violating existing taxi regulations by their acceptance of a flat fare and multiple passengers. Jitney drivers were forced to purchase insurance, pay for licenses, and, in some cities, be bonded. The drives to save streetcar company revenues for the city were successful, and by 1917 jitney operation in the US had dropped to 90% of its peak numbers and was mostly eliminated within a few years.

Thus jitneys, innovative for their time and brought about by the new automobile technology and innovators who saw the opportunity to make considerable money offering a service that was immensely popular and desired by the population, rose quickly in numbers. They were, however, driven out of business by local regulations designed to protect existing streetcar and traditional coach/taxi services. This scenario should sound familiar. However, the one thing jitneys did not have was backing from a unified force such as a multi-billion-dollar corporation with enormous financial resources to oppose local laws that sought to eliminate the jitney services for being dangerous to the riding public.

To be somewhat objective, jitneys were not always safe, with people riding on the sideboards. Any accident, however minor, resulted in significant injury. Moreover, there was really no one to manage or control the behavior of the many independent jitney service providers who simply hopped into their private cars and immediately became commercial common carriers, plying the streetcar lines without any rules, training, or real vetting as to their past criminal records. Their numbers overwhelmed the streets, and jitneys often stopped just before the streetcar was to stop. Accidents with other jitneys and streetcars became more prevalent as the numbers of jitneys swelled to thousands in many major cities. This should also sound familiar in relation to current issues surrounding TNCs.

Throughout the 1920s, with the threat from jitneys soundly defeated and streetcar service modernized with improved equipment, there was relative peace in the expanding taxi market. Historians suggest that there was a relative balance between the number of taxi drivers and the demand for taxi services. This was the “Roaring ‘20s” of relative full employment, and taxicab
driving was considered a good full-time job, often with benefits that were better than those of contemporary factory workers. Just before the Great Depression, it was estimated that there were 84,000 taxi drivers in the US. These were employees of some the nation’s first and largest taxi companies. Taxi companies were responsible for many of the commercial two-way radio systems first introduced in the US, as they helped the companies make more trips per day per car and resulted in more profitable operations. Often these additional profits were shared with the drivers through bonus plans for performing more trips during their shifts.

With the Great Depression came very high unemployment rates, and by 1932 it was estimated that the number of taxi drivers had nearly doubled to 150,000, far outpacing the demand for taxi services. Within the taxi industry, there is the old adage that when the economy flourishes, it is difficult to attract qualified workers for the taxi industry, even though there is plenty of demand for services. However, when the economy is poor, there are plenty of drivers but little demand. This was certainly the case during the Great Depression.

Historians also suggest that the early car manufacturers that had geared up production during the 1920s sold their excess vehicles to cab operators at break-even prices, or even at a loss, in order to draw down their inventories. Many of these cars were bought by taxi garages, which then leased the vehicles to taxi drivers for only a few dollars per day. This made the taxi industry extremely easy to enter and utilized the huge oversupply of vehicles. Taxi garages became car-leasing firms, thereby making their money from leasing the vehicles, regardless of whether there was a demand for taxi services to fill these vehicles with passengers.

City streets became crowded with cut-rate taxis that were independent of any company. Operating only for themselves, these taxi drivers felt no need for radio communications, management overhead, or other taxi company assistance. Fierce price competition broke out in many cities as different groups of taxi drivers sought to protect what they considered their market(s). Gilbert and Samuels (2011) reported on these conditions in their taxi textbook, The Taxicab: An Urban Transportation Survivor (Gilbert and Samuels 2011). They showed that taxi fares in many cities shrank from 40 to 70 cents per mile to 15 cents or less per mile, decimating the incomes of all drivers. Some cities had what Gilbert and Samuels (2011) reported as “nickel” fares that provided a trip anywhere in the city for 5 cents. Such conditions led to a period of US and Canadian history known as the “taxi wars” (Davis 1998).

The Era of Modern Taxi Regulations

City officials, pressured by employee-oriented cab companies and public demand for some order in this industry with public protection in the form of insurance, moved to regulate taxis. The New York Times, for example, declared, “The industry cries aloud for regulation.” (Rubinstein 2014). Following the regulatory format used by the city of New York, called the Hass Act, in 1937 taxicab numbers were capped, creating the current medallion system. In addition, standards for uniform fares, vehicles, and drivers were established.

Most other North American cities followed with similar taxi regulations that restricted the number of taxi permits in order to balance the supply of taxis with what was felt to be the
demand, thereby eliminating the cutthroat competition and dangerous behavior of some taxi drivers. Similar to railroad, trucking, and later airline regulations at the US Federal level, entry into the industry was allowed only after governmental approval of an operating permit. Only so many taxi firms were permitted to provide service. Rates were standardized to provide the lowest fare possible but still yield a reasonable profit for the taxi company. Usually the regulators determined a “reasonable profit” to be the cost of borrowing capital plus a percentage point or two more. The reasoning was that investors would invest in these firms because they would earn a better return than simply loaning out their monies at the standard borrowing rates. Of course, this led to many presentations before all transportation commissions to make them aware of the actual cost of operations.

Taxi drivers and vehicles were also regulated by the use of minimum standards for obtaining a driver’s permit. Ironically, some of these requirements were the same general non-criminal background requirements previously introduced in London over 300 years earlier.

Initial taxi regulations often quelled the taxi wars, and the industry was relatively placid for a number of decades. However, by the 1970s, the public was increasingly unhappy with the quality and fares in the taxi industry. There was also a movement by taxi drivers, who leased their vehicles, to form their own taxi companies as a way to reduce their costs. The major barrier was typically the difficulty of obtaining authority to do so from the local regulatory commissions. Applicants had to prove there was an unmet need for the additional taxi services and that existing taxi companies would not serve that demand. This was an almost insurmountable barrier to entry for all but the most well-funded applicants.

Applicants and public officials were asking why they needed to limit the number of taxi permits in a city. Why shouldn’t drivers have their own permit and drive for whomever they want? Fortunately, the failure of open-entry deregulation in the US taxicab industry and, to a lesser extent, the use of independent medallion or individual operator permits is well documented. Rosenbloom (1985) and Teal and Berglund (1987) separately concluded that taxi deregulation failed to demonstrate any substantial benefits to drivers, taxi firms, or users. Dempsey (1996), in summarizing the empirical data from these researchers’ studies and other commissioned studies, listed the results of taxi deregulation in 21 major US cities prior to 1983:

1. Significant increase in new entries
2. Decline in operational efficiency and productivity
3. Increase in highway congestion, energy consumption, and environmental pollution
4. Increase in rates
5. Decline in driver income
6. Deterioration in service
7. Little or no improvement in administrative costs

Other notable authors who once advocated for taxi deregulation in terms of removing the maximum number of cabs authorized to provide service and recognizing single owner/drivers as cab companies have since changed their minds based on the empirical evidence and the failure of their own recommendations.
For example, Gentzoglanis (1992) states:

The taxicab industry has undergone significant changes in the last decade or so. It passed from a regulated industry to a deregulated one in many cities and municipalities and back again to the regulated environment. A lot of economists who were arguing that regulation causes perverse effects on taxicab industry performance have changed their minds after having observed this industry operating without entry and fare regulations and have invoked back the regime of regulation. (Gentzoglanis 1992)

Proponents of taxicab deregulation, Teal and Berglund (1987) write:

By the late 1980s, the returns were in on the taxi deregulation experiences. These took two forms. The first was actual data on the post-deregulation experiences; obtained in part through studies sponsored by the U.S. Department of Transportation (Gelb 1982, Gelb 1983a, Gelb 1983b, Teal et al. 1984). The second involved the responses of the local governments that had initiated the regulatory changes, namely continuation, modification, or abandonment of these policies.

Both analytically and politically, economic deregulation fared relatively poorly, particularly compared to the expectations of its proponents. The local governments that had adopted the most far-reaching forms of deregulation eventually either completely abandoned this policy or sharply scaled back the most significant features of deregulation. In addition, the only comprehensive empirical study of the deregulation experiences came to the conclusion that the benefits of deregulation were “insubstantial” in most locales. (Teal and Berglund 1987)

Teal (1992) later writes:

While some economists continue to argue on theoretical grounds for deregulation, apparently not willing to concede to the empirical evidence (Frankena and Pautler [1984] are an early example; Travers Morgan [1988] is a more recent example), the political debate appears to be largely over. By 1992, no large American city has deregulated its taxi industry during the past several years, and the issue has essentially disappeared from the active urban transportation policy agenda. (Teal 1992)

The deregulation and subsequent re-regulation of taxicabs in Seattle is indicative of the taxicab deregulation experienced by many major US cities. James J. Buck, manager of Seattle’s King County Division of General Services, writes:

In 1979, the Seattle City Council adopted legislation which eliminated the population ratio as an entry limitation for taxicab licenses. You could license as many cabs as met the licensing requirements, i.e., application fee, insurance, inspected and approved vehicle and taximeter, approved name and color scheme, and approved ownership. At the
same time, rates were whatever the licensee filed with the City, as long as the rate followed the prescribed form and was reflected on the taximeter. (Buck 1992)

Buck (1992) goes on to observe the outcome. He writes:

Did the market regulate entry and rates? NO. Were there problems? YES. Rate gouging...short haul refusals...surly and discourteous treatment of passengers...fights at cab stands at the airport. Experiential data concerning accidents and safety became very damaging, impacting insurance rates and coverage. Government regulators were constantly barraged by industry complaints that “deregulation” wasn’t working—they couldn’t make any money, unsafe vehicles were on the street, tension and animosity arose among drivers with the potential for violence, etc. Pleas for reviews were frequent. (Buck 1992)

By 1984, taxicab deregulation in King County was dead—completely reversed, with fixed limits on taxicab licenses.

The most comprehensive analysis of taxicab deregulation and re-regulation at this time was prepared by Price Waterhouse’s Office of Government Services. Six US cities that had previously deregulated their taxicab services through open entry were examined in depth. The executive summary of the 1993 Price Waterhouse report concludes:

Deregulation introduced several immediate changes in taxi supply, price, and service quality in the six cities for which detailed case study information is available (Berkeley, Oakland, Phoenix, Portland, San Diego, and Seattle). The experience of these cities generally indicated that the benefits of deregulation were devalued by unanticipated and unattractive side effects. (International Taxicab Foundation 1993)

The report goes on to state:

Although the supply of taxi services expanded dramatically, only marginal service improvement was experienced by consumers. Within a year of deregulation, the supply of taxi services increased an average of 23%. Because most new entrants were independent operators and small fleet owners with limited capability to serve the telephone-based market, most new service was concentrated at already well-served locations—such as airports and major cabstands. Customer wait times at these locations, already short, were reduced further. Response times in the telephone market were similar to pre-deregulation performance. Trip refusals and no-shows, however, increased significantly.

**Prices rose in every instance.** Paradoxically, the influx of new entrants did not invoke the price competition typically experienced in other newly-deregulated industries. Prices rose an average of 29% in the year following deregulation. There appear to be two sources of this unexpected event. First, fare increases prior to deregulation had consistently lagged cost increases. Veteran operators thus corrected prices at the first
opportunity. Second, new entrants generally charged higher fares than the veteran operators. The cabstand markets on which these operators focused their services are generally price insensitive and, because of the first-in first-out nature of taxi queues, comparison shopping is discouraged. For these reasons, the new entrants had no incentive to introduce price competition […]

**Service quality declined.** Trips refusals, a decline in vehicle age and condition, and aggressive passenger solicitation associated with an over-supply of taxis are characteristic of a worsening in service quality following deregulation. (International Taxicab Foundation 1993)

The negative aspects of deregulation were especially evident at airports and major tourist attractions. These effects were most closely associated with cities that implemented an “open-entry” policy that enabled the influx of independent owner-operators who were unaffiliated with companies or taxi cooperatives.

The airport taxicab system might have an impact on low-income and residential users, the primary market for non-airport taxicabs. Demsey (1996) quotes Gorman Gilbert, one of the country’s foremost writers on taxicabs, and former commissioner of the New York City Limousine and Taxi Authority, with the following:

The increase in taxicab fares in residential areas produces a particularly bitter impact on low-income persons. A major and increasing proportion of residential taxicab business originates in low-income or minority neighborhood […] This is not surprising since residents in these areas are often dependent on taxicab service for mobility. These trips are for essential purposes, such as trips to grocery stores and medical facilities. In contrast, persons who are businesspersons that are clearly more affluent, vacationers, and conventioneers make the trips from airports and downtown hotel stands…

Increasing fares to residential areas means that the impact of more taxicabs is borne disproportionately by low-income persons. In other words, *those who can least afford to pay would be charged the most* […] those who follow the academic argument of ‘letting the market decide’ taxicab fares are really ‘letting the poor pay more.’ (Demsey 1996)
SO, WHY REGULATE?

With such overwhelming evidence against taxi deregulation through open entry of taxi licenses, it is difficult to understand why cities and airports, which currently have managed taxi systems, would even contemplate open entry deregulation. There are probably numerous reasons why this occurs, but two prominent ones are usually advanced. First is the political or emotional decision-making versus coming to an informed decision. The second is the unintentional deregulation approach.

The emotional decision is the result when city officials and/or decision makers fail to consider the consequences and impacts of their taxicab system. What harm can there be in letting an entrepreneurial individual—probably an existing taxi driver—buy their own cab instead of leasing one? Or, what harm can there be in letting one more small (five- to seven-vehicle) cab company into the market? Or, today, what harm is there in letting Uber and Lyft provide additional taxicab services and regulate themselves? They are large technology companies that can surely provide safe and reliable services. “Let the marketplace decide who shall offer service” is the simplistic and uninformed view often put forward. Public sentiment supports the little guy who just wants to make a living, or the small firm that just wants to expand.

Public sentiment and young riders also cry out for services that they believe to be better and cheaper than taxis and that are driven by people like themselves. No matter that study after study during North America’s last bout with taxicab deregulation and re-regulation concluded that driver’s wages suffer, fares increase, and poorer service, especially in economically disadvantaged urban areas, results from unlimited entry and the ensuing oversupply of taxicab type services.

The common thread that runs throughout the history of taxi regulation is that newer technologies, poor service, high fares, driver unrest, or some combination of these brings about deregulation of the industry.

It is therefore incumbent upon public officials to learn from this well-documented phenomenon and design a taxi and TNC regulatory system that offers a fair income opportunity to drivers and obtains maximum utilization from vehicles. The goal is to offer and maintain a high level of service at reasonable rates to residents and visitors alike.

Today, often there is legal responsibility prescribed by a state legislature that empowers a city to regulate its taxicab companies. However, 45 states have also passed legislation removing the regulation of TNCs from local jurisdiction and passing it up to the state level. The city is then vested with responsibility to ensure the safe use of public taxis, and additionally to economically regulate and promote the provision of public taxi services within the community. Yet it has no authority to regulate competing TNC services.

The position on taxicab economic regulation for some cities has been what economists refer to as that of “managed competition.” That is, the city officials desire competition within the taxi
industry, thereby fostering choices for those wishing to use their taxi services. The simple logic behind this economic theory is that the presence of one or more competitors forces all taxi companies to compete for the user’s business. This approach also implies that the city will attempt to manage this competition through limitations on entry into this marketplace and the total number of taxis within their system. Such regulations also specify operating rules and procedures, and the setting of actual rates or range of fares all the companies may charge. However, with the current situation of TNCs being beyond their local control and allowing an unlimited number of drivers and vehicles into the taxi-type trip market, the regulatory policy of managed competition is rendered pointless.

The need to regulate taxi services, however, runs counter-intuitive to simple economic theory and some loosely held popular opinions. One could argue that citizens need other generally available goods and services such as grocery stores, restaurants, car rental firms, etc. They are not regulated economically, in the belief that unlimited competitive forces will bring about quality operations and the best consumer prices if government intervention is kept to a minimum. Why then is there the need to regulate any city’s ground transportation services?

The simple, yet most effective, answer lies in the rationale that it is in the public’s interest to regulate taxicabs and these other forms of ground transportation known as TNCs. There is the social commitment a community has to both its citizens and visitors that these vital public transportation services will be readily available, safe, and economical to use. Entries into taxi services, for example, are developed and balanced to protect the user from onerous services or arbitrary fares, but also to generate sufficient funds for the provider to continue in business and make a modest profit. Like any good transportation service, taxi services must be

- planned for appropriately,
- coordinated through service-based regulation, and
- upgraded continually in order to attract and support the needs of both the community and visitors.

History tells us that in an era of unlimited entry into the taxi-type trip markets, it will once again become important that all providers meet minimum standards of driver and vehicle specifications.

Another important reason for regulating taxi and TNC services is the public image that is conveyed to residents and visitors. Most cities want to project the image of being progressive and busily developing an “upscale” image for visitors, showing that this is a good city in which to live and enjoy the benefits of the urban life style

Therefore, the public both needs and prefers to have a modern, positive image for its taxicab operations. A taxicab service should reflect the community’s desire for clean, efficient, and responsible privately provided public transportation services that meet the needs of all.
Additionally, many public transit systems have special services for the transportation disadvantaged, and many social organizations provide Americans with Disabilities (ADA) approved transportation trips. But, often these require pre-qualification, involve preplanning for both going and returning, and typically consume large amounts of time and cost. Proper regulation of efficient taxi services is one way the community can ensure that its citizens have access to privately provided public transportation services which are convenient, easy to use and, when all costs are considered, are significantly less expensive than publicly provided transportation services, especially those that require the use of a wheelchair-capable vehicle.

A final rationale for regulating taxis and TNCs concerns energy conservation and carbon footprint. Typical vehicles utilized as taxicabs up until recently were more likely to be used police cars or other large vehicles designed for five or more passengers. These are typically older vehicles with V8 engines, which achieve 10 to 12 mpg in city traffic.

Through efficient and effective dispatching and balancing the appropriate number of taxis in the market, more revenues can be generated per vehicle, thereby allowing taxi companies or individual drivers to lease or purchase newer fuel-efficient cars such as the Prius or other hybrid cars, reducing the energy required even more. Also, modern taxi dispatch technology, if employed, can route the closest cab to a caller and design the shortest route to the caller, thereby decreasing gasoline usage and emissions.
REGULATION OF TNCS

As initially stated, it is difficult to see the taxi industry’s service cycles of deregulation and re-regulation as they are occurring. Often these cycles have taken decades to complete. The service and rates must go through a period of decline due to oversupply with the resulting poor service, until insurance and security concerns surface and become political issues. Once this happens the cycle of re-regulation occurs much along the lines of previous restrictions on entry, rate setting, and driver vetting.

Will the use of modern cellphone app technology and the collection of feedback data on each taxi trip help in eliminating some of the driver behavior issues? Will modern technology platforms and TNC taxi brokers allow cities as many personal car drivers acting as commercial taxi operators whenever they desire without flooding the market and creating the downward spiral of taxi services once more? Or can cities regulate the amount of low-cost TNC-type providers to serve only unserved and peak demands that are not well served by traditional taxi companies? Or will the taxi industry in North America degenerate into all TNC providers to achieve the lower costs provided by this model?

A best guess is that the industry will experience a form of hybrid taxi/TNC-type transportation firm that offers both services in competition with national TNC brands for a while but that ultimately there will be re-regulation and TNCs will be included within the local regulatory framework. There may be an opportunity for statewide or even national taxi/TNC regulations, but, as in the past, drivers will be vetted, entry will be restricted, and public safety in the form of commercial liability insurance for all drivers will be standard requirements.
REFERENCES


THE INSTITUTE FOR TRANSPORTATION IS THE FOCAL POINT FOR TRANSPORTATION AT IOWA STATE UNIVERSITY.

InTrans centers and programs perform transportation research and provide technology transfer services for government agencies and private companies;

InTrans manages its own education program for transportation students and provides K-12 resources; and

InTrans conducts local, regional, and national transportation services and continuing education programs.