



Benefits of a

Full Service

Taxicab Company

to the Community

and Consumers



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May 8, 2006

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Abstract

The United States taxicab industry¹ is faced with several problems that have permeated into all the different market models that characterize this industry. This paper seeks to distinguish these different business models and critically evaluates the regulatory mechanisms that characterize such market structures. The paper begins with a brief introduction of the present economic environment in the United States followed by a detailed examination of the different business models that exist in the market. This is accompanied by an assessment of the problems that plague the taxicab industry and the underlying causes for these problems. Utilizing a theoretical framework accompanied by numerous case studies, a detailed comparison of the different business models is presented - with special focus on the structural, operational and functional criterions that define taxicab service and customer requirements. The paper concludes by emphasizing the need for local regulatory authorities to reassess their present taxicab market structures and initiate changes in the legal framework (ordinances) that support the adoption of the full service taxicab company model.

Executive Summary

The objective of this paper is to provide guidance in developing a regulatory framework that supports the best taxicab service model: the full-service taxicab company model. Unfortunately, the use of independent contractor drivers by taxicab, limousine, van, paratransit, and other ground transportation firms has not been accounted for by many local regulatory schemes. The vast majority of local taxicab regulatory ordinances fail to support or in many cases, even allow for the development of full service taxicab operations.

Why are ordinances needed? Many taxicab trips are unattractive. The more profitable trips serving hotels and airports are few and far between in comparison to typically more frequent but less profitable trips meeting the needs of transportation disadvantaged citizens to medical appointments, shopping and late night activities. In a typical unregulated environment, single, unaffiliated owner-operator taxicab drivers sit at public taxicab or hotel stands or wait at airports without attempting to serve any other markets or even having the ability to serve other markets. Thereby, they create major inefficiencies in the industry, driving up the fares for all users. In order to obtain market efficiencies made possible by the use of new technologies in the industry, ordinances are needed to ensure that all markets are served, and that independent contractor drivers are affiliated with a full service taxicab company and have the opportunity to earn a decent income while serving all clientele—not a select few.

What are the problems facing the U.S. taxicab industry?

In the present taxicab-operating environment, the market is comprised of the taxicab drivers, consumers, taxicab firms, the regulatory administration, and in some communities, the airport. Key supply-side players in the industry are the taxicab drivers and taxicab companies who have direct interface with the customers providing the gamut of taxicab and related services. On the demand side, the customers are the key players. Again, the customers can be distinguished on the basis of usage — from the regular taxicab users to occasional taxicab users. The failure to understand and regulate the interactions of the demand and supply side players has resulted in

several structural inefficiencies that plague much of the U.S. taxicab industry, leading to an overall decrease in profitability levels, inefficient resource utilization, deteriorating service levels and customer dissatisfaction among others. This has translated into multitudes of problems for the various entities involved in the taxicab market exchange process.

The taxicab industry structure and design

In order to avoid local deregulation by default, officials must also understand the type of taxicab firms they choose to allow to operate and what value each is adding to the taxicab permits they are provided. The North American taxicab industry can be perceived as a continuum ranging from comprehensive taxicab firms to single unaffiliated taxicab drivers acting as individual taxicab firms (see Figure 1 below).

This continuum of taxicab firms ranges from the full service taxicab firm which invests in providing significant infrastructure support for taxicab service and makes an important contribution to solving the community's mobility problems, down to that of a simple permit holder who either operates a taxicab as an independent, or leases his taxicab permit to the highest bidder, who then operates as an independent. At the high end of this continuum is the total taxicab firm, which adds significant economic value to the permit while using typically experienced independent contractor drivers that are managed by the company. At the low end, there is a single vehicle owner-operator or lease driver who is not supported by or affiliated with an established company, and the regulatory authority or airport inherits the day-to-day management role of supervising this driver.

With the new reality of minimal active management of drivers by many taxicab firms, the regulatory entity must either gear up to provide day-to-day management of taxicab drivers (discipline, code compliance, and dismissal) or structure their ordinances in such a way that taxicab firms are able to and must manage their drivers. This requires a fundamental rethinking of the role of local ordinances in the traditional taxicab industry structure.

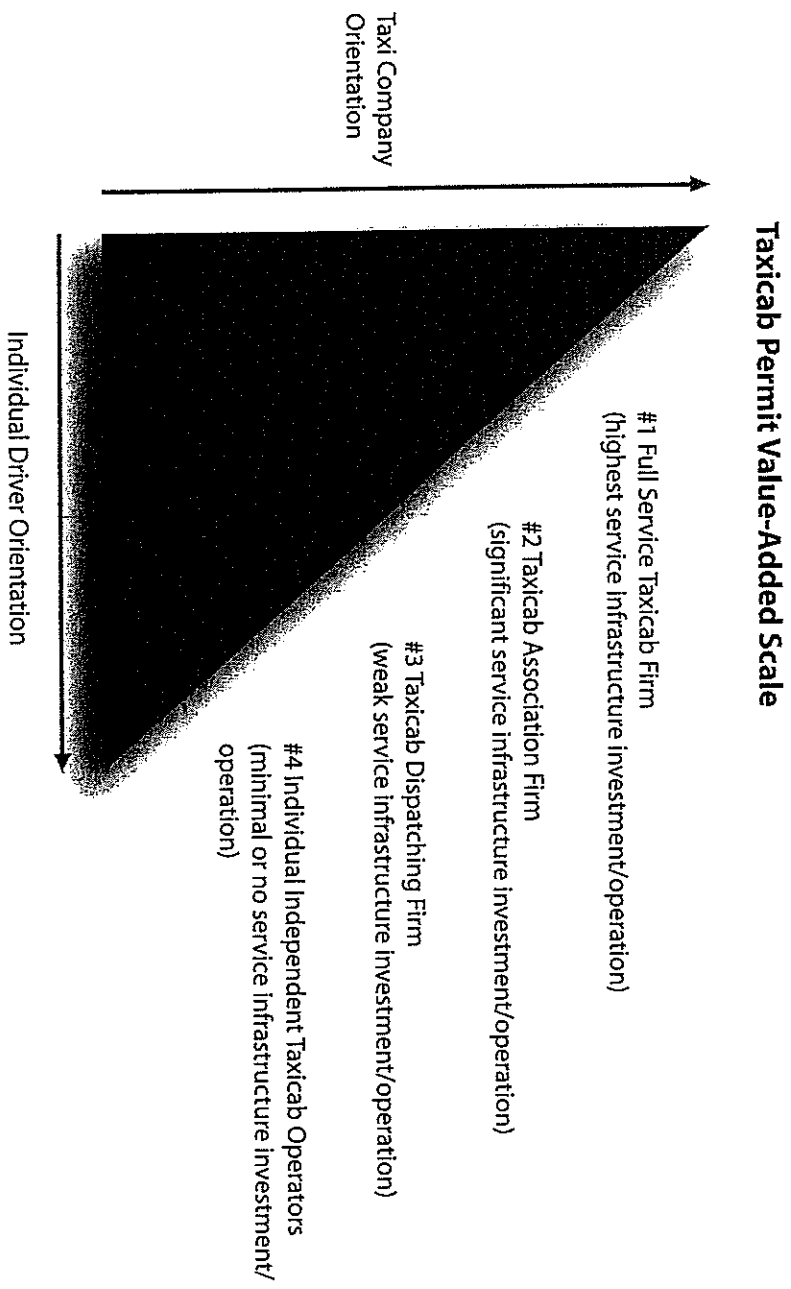


Figure 1: Continuum of Taxicab Firms



Regulatory structure of the taxicab industry

The taxicab regulations are in most cases under the purview of the local government officials. A few states, such as Connecticut and Colorado, maintain taxicab regulation at state levels, but they are clearly the exceptions. Typically, local ordinances define the various aspects related to the functioning of the taxicab industry. These ordinances might include policy frameworks such as fare setting, entry and exit regulations, vehicle requirements, adequate insurance levels, record keeping requirements, and hopefully full service taxicab attributes that this paper recommends. Many cities now require setting a minimum number of taxicabs for new firms applying to operate in their respective service areas. The larger the geographic area or greater the population, the higher the minimum fleet size will need to be in order to foster full service taxicab firms That are capable of providing community-wide service.

Economics of the taxicab industry

In a perfectly competitive economic model, information, including price and a knowledge of the differences in the products or services offered, is one of the key ingredients for the consumer to have in order to complete his/her evaluation and make a choice regarding taxicab service. However, in the taxicab industry, the comparison of services provided by different taxicab operators is not easily discernable or apparent to potential users. For the driver, revenue maximization is the goal. When rates are set by the community, short trips, which require the driver to spend as much time getting to the pick-up address as he spends taking the passenger to his destination, are revenue neutral or far less profitable than longer trips where the meter is running proportionally longer compared to the time required to pick up the fare. Drivers usually make the most money with all long trips, do reasonably well with a mix of long and short trips and do poorly with only short trips. This is why there are almost always long taxicab lines at hotels and airports where the longer trips

are more prevalent. In an open entry market where there are too many taxicabs available, the drivers flock to the major traffic generators, hotels and airports, where there is a higher likelihood of acquiring a better trip. This in turn extends the wait for each driver for his next trip making for a less efficient, less profitable scenario. Shorter trips into neighborhoods for grocery, medical and other trips are shunned due to their unprofitability.

What are the problems in the regulatory structure of the taxicab industry?

The systemic problem encompassing all the agents and the principals in the taxicab market structures in the U.S. arise due to the "fractionalization" of the taxicab market. This fractionalization gives rise to the varied business models in Figure 1. As shown, a scenario exists wherein there is minimal control over market entry and exit (commonly referred to as open entry), leading to the devolution to several smaller firms and individual drivers/operators, each trying to make a profitable venture. However, such market expansion does not result in an efficient operating environment, especially when quality of service and price levels are taken into consideration. To each of these individual or smaller firms, the economic model may seem profitable. Driven by such expectations and the relatively low cost of market entry, they start taxicab-related business activities by either acquiring taxicabs or obtaining leases. Such a process, unless checked, creates far more taxicabs than are needed to service the demand, with the result that all drivers suffer as service declines and per taxicab income levels shrink. This in turn, forces regulators to raise the taxicab fares, ultimately opening the door to competitors (operators of van and sedan services) who gain a significant share of the traditional, but more lucrative taxicab markets. To further illustrate problems that arise due to the deregulatory environment, the next section provides a comparative analysis of the two dominant taxicab firm models in the United States, i.e. the full service taxicab firm and the unaffiliated independent owner-operators.



Comparison of the full service taxicab company model and the unaffiliated owner-operator model

When deregulation (or fractionalization due to the sell-off of individual permits) of the taxicab industry has taken place, several problems arise. At the macro level, the market primarily distinguishes between two market models that define the taxicab industry: the full service taxicab company operators on one end, and the one-vehicle owner-operator driver who is unaffiliated with an established company on the other. An understanding of these models in the light

of the various dimensions defining the scope and functioning of the taxicab industry (including insurance coverage, access to technology, vehicle maintenance and replacement, fares/price levels, service and safety level, communications problems, additional customer services, short trip coverage, and community-wide area coverage), would allow for a better assessment of such systemic problems, and provide solutions for the same. Thus, it is essential to critically evaluate each factor that impacts the functioning of such market processes. The following is a tabular comparison of the unaffiliated, independent owner-operator driver and the full service taxicab firm models on the basis of the various dimensions of the taxicab industry.

Table 1:
 Comparison of
 Structural,
 Operational and
 Functional Features of
 the Unaffiliated
 Independent Owner
 Operators and Full
 Service Taxicab Firm
 Models

Features	Unaffiliated Independent Owner Operator	Full Service Taxicab Company
Insurance Coverage	Little general liability coverage due to individual (small scale) operations	Group insurance package on all vehicles and firm
Technology Access	Very little incentive to adopt GPS, electronic billing and other technologies	Large scale operations ensure adoption of GPS, computer dispatching, and automated billing facility
Vehicle Maintenance	Low priority to maintain vehicle due to lack of any supervision at the firm level and minimal enforcement at the regulatory level	Priority to ensure market image and service levels drives large firms to keep vehicles in good running condition and minimize breakdowns
Fares/Price Levels	Fares tend to vary – driver’s discretion on fare levels can raise passenger costs	Fixed price structures are followed to meet regulatory requirements and ensure repeat customer usage
Service and Safety Levels	Very poor as there is no regard for brand image	Highly responsive service and safety to retain market image
Language and Communication	Little training of English for immigrant drivers running independent taxicab operations, who have little or no incentive to improve it	Drivers (including immigrants) are usually trained in English or not retained; computer dispatch gives the driver written details for improved customer service
Additional Customer Service	Very little additional service due to small size of operations	Usually provide extensive services such as radio dispatch, credit card processing, 24-hour service, lost and found service
Short Trip Coverage	May refuse short trip if the driver finds route unprofitable	Abiding to the ordinance requires the companies to undertake any trip requested by passenger
Community-wide Area Coverage	Small scale operations of independent owner operators by nature limits their coverage to major traffic generators – such as airports and hotels	In most cases, coverage includes all neighborhoods due to large scale taxicab operations providing a greater volume of calls in the neighborhoods



Components of a Modern Regulatory System

The modern taxicab industry technology that includes computer dispatching, GPS-based monitoring of vehicle location, quick and secure credit card processing, and greater driver security is possible only if it can be supported through the revenue generated by a substantial number of vehicles. However, this new technology especially computerized dispatching, is critical to the management of independent contractor drivers if greater productivity and revenue per vehicle are to be achieved in the taxicab industry. This increased productivity reduces the pressure for rate increases, and assists taxicab firms to maintain, or in some cases, adequately provide services to the elderly and transit dependent as well. The first step for regulators is the recognition that management of the driver workforce must be through the individual firms vested with permits. It is up to the taxicab firms to add value to their taxicab permits, and that value includes managing the drivers in compliance with local regulations. In order to do this, however, firms must be of sufficient size in a balanced market (proper number of taxicab permits to serve taxicab passengers) to afford modern vehicles and taxicab technology. Regulations need to be written to require the use of such technology to manage the independent contractor driver. If the supply of taxicabs is in balance with the taxicab market demand, everyone wins: the driver, the firms, the community, and most of all, the customer. Restricted entry guarantees revenue in exchange for quality performance.

Conclusion

On several occasions in policy formulation at the community level, the taxicab permit has been seen as a means to achieve the social aims of local politicians - this is thought to be achieved through a systematic allocation of the taxicab permits to certain under-represented economically disadvantaged groups in the society. This measure as a social policy is often instituted to provide individuals in such minority groups a chance to participate in the taxicab industry as owners. However, such initiatives create an uncompetitive and often oversupplied market (due to the preferential allocation of permits) and only results in harming the interests of other taxicab firms, drivers, and consumers in the industry.

Utilizing policy reform measures, such as those discussed in Section I of this paper, "Components of a Modern Regulatory System," community administrators should write ordinances that clearly define operational requirements for prospective taxicab firms. While supporting full service taxicab operations, the ordinances should also include clearly defined penalties for unaffiliated individual drivers who fail to conform to the legal requirements. To complement the reforms process, minimum taxicab fleet size requirements must be set on the number of vehicles that are to form part of a full service taxicab company. This is crucial to validate the regulatory procedures in place and bring into the market taxicab operators who are efficient and consumer friendly.



What are the problems facing the U.S. taxicab industry?

The taxicab industry in the United States is comprised of several different regulatory structures unique to regions across the country. These regulations have evolved over many decades. The evolution of the taxicab industry goes back to the start of the twentieth century, pretty much tracking the growth in urban population and economic development. This was accompanied by a phenomenal increase in migrant population arriving to the United States, mainly from Europe.² Along with this exponential growth in population, the automobile was finding its unique place in the lives of people, revolutionizing transportation and time. Such changes transformed the taxicabs into a key component of the socio-economic lives of millions of people. From such an evolutionary stage, the taxicab industry has been subject to legal and regulatory interpretations that highlight the complexities involved in understanding the industry and its unique features.

In the present taxicab operating environment, the market is comprised of the taxicab drivers, consumers, taxicab firms, the regulatory administration, and in some communities, the airport. Key supply-side players in the industry are the taxicab drivers and taxicab companies who have direct interface with the customers providing the gamut of taxicab and related services. The vast majority of U.S. taxicab drivers can be divided into two categories, based on their different legal status. A driver may be an independent contractor (legally covered under independent contractor statutes), or an employee driver. Drivers are also organized according to different business orientations, which will be discussed later in this paper.

On the demand side, the customers are the key players. Again, the customers can be distinguished on the basis of usage -- from the

regular taxicab users to occasional taxicab users. The customers can be further distinguished based on income levels, age, and purpose of taxicab usage, among others. However, on occasion, such division of the passengers into different user categories becomes difficult due to their multiple taxicab usage patterns over time.

In an ever evolving taxicab market, the interaction of the demand and supply side players of the taxicab industry introduces several complexities. This is an indication of the problems faced by regulators when trying to interpret existing public policy or in drafting any new public policy for taxicab markets. This translates into structural inefficiencies and leads to many of the problems related to decreasing profitability levels, inefficient resource utilization, deteriorating service levels, and customer dissatisfaction, among others. This has spillover effects for all the various entities that engage in the market exchange process.

Consequently, it becomes very difficult for the regulatory and community officials and industry leaders to put in the time and effort necessary to determine an optimal economic environment that would maximize the benefits to both the consumers and the service providers. Consumers and taxicab drivers encounter the micro level problems at an individual level, whereas the taxicab firms and the regulatory and community officials face the macro level problems.

The above discussion on the present status of the regulatory environment in the taxicab industry leads into the next section of the paper, which provides a detailed introduction to the taxicab industry using a unique sloping curve diagram approach.

The Taxicab Industry Structure and Design

The taxicab industry structure in the United States is shown by utilizing a sloping diagram approach as shown below in Figure 1, the Continuum of Taxicab Firms.

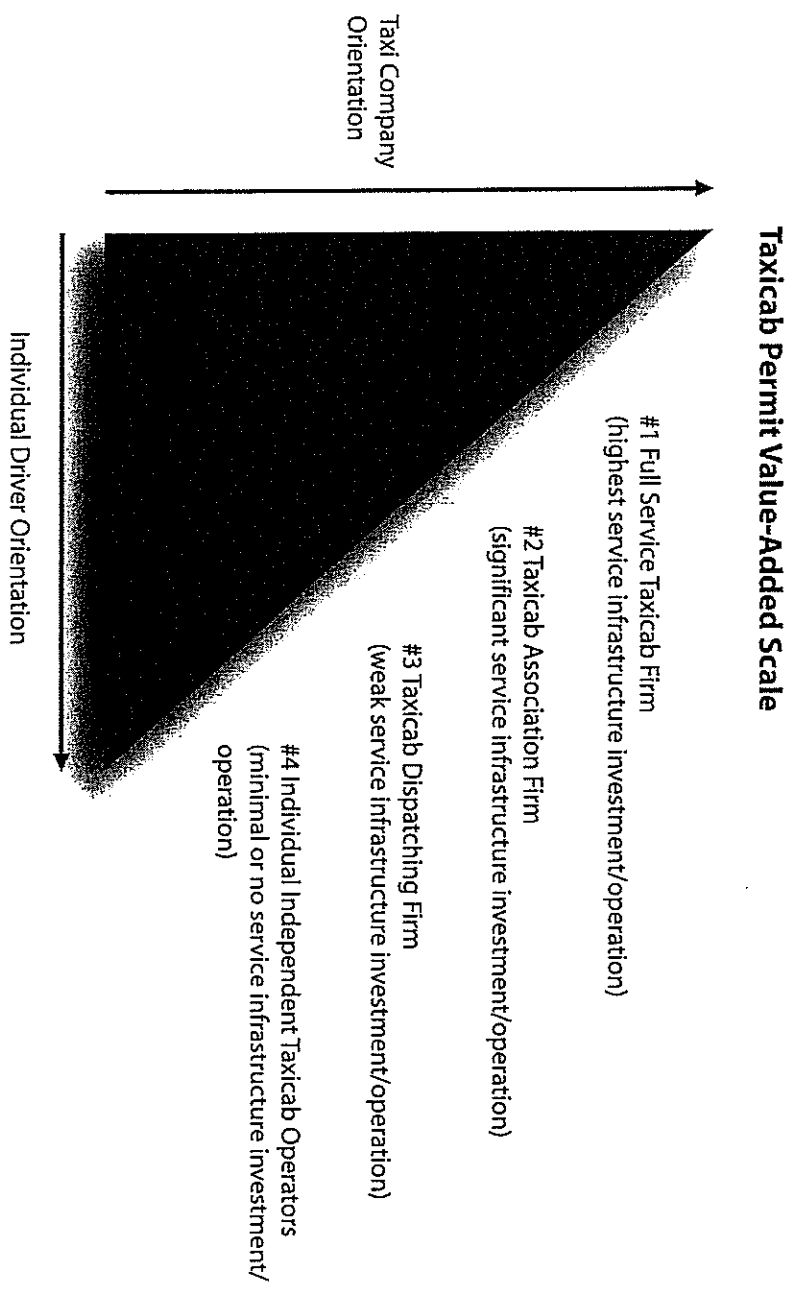


Figure 1: Continuum of Taxicab Firms



At the top of the slope in Figure 1, category #1 represents the full-service taxicab firm. In this category, a taxicab firm has strong central management and significant service infrastructure investment to provide comprehensive 24-hour radio/computer dispatching, insurance and accident investigation/claims management, fleet-owned and managed vehicles, marketing, and experienced independent contractor drivers. Moreover, this type of taxicab firm provides for collective agreements with private companies, public agencies and non-profit social service agencies, and represents a firm that stands behind its service - often trying to differentiate its service from the competition. These firms accept major credit cards, establish voucher systems, and typically offer contracted transportation services to private and public sector organizations. Most major cities currently have at least one full-service taxicab firm.

Category #2 in Figure 1 represents a taxicab association/cooperative or group of permit owners that form a management company. Some of the owners are also likely to be managers. In a category #2 firm, the drivers choose to join the association primarily to take advantage of the reasonably strong administrative office functions of dispatching, processing of credit cards and vouchers, marketing, etc., as well as the independent contractor driver having the option to lease a vehicle from the company or provide his/her own vehicle. The same is true of purchasing insurance and leasing an operating permit individually or through the company. A category #2 organization is similar to a category #1 organization except that it generally has less financial investment in the service infrastructure (property, vehicles, maintenance facility, etc.) and the ownership may be fragmented.

Another level of taxicab firm, the taxi-dispatching firm, is represented by category #3 in Figure 1. In this scenario, an independent contractor driver who owns his/her own vehicle and permit (owner-driver), and provides his/her own insurance would pay a monthly fee for dispatching, advertising, and processing of credit cards and vouchers. A category #3 organization has minimal infrastructure investment, typically limited to a small dispatch and administrative office.

Even a category #3 firm or association should be clearly distinguished from a category #4 taxicab operation, referred to as individual or independent unaffiliated taxicab drivers. Individual drivers, whether loosely affiliated in an informal cell phone network or not, provide almost no dispatching. They also provide no marketing, other than perhaps a listing in the Yellow Pages of their local phone company. Today, this is possible because almost all drivers have cell phones for use with regular patrons. In summary, this Category #4 taxicab firm would offer no real 24-hour radio service, advertising, or service contracts, credit card, or voucher support because there is virtually no administrative staff or service infrastructure support so there are few service options available to a driver under this scenario.

This category would also include single permit owner/operators. In this scenario, the holder of the permit is also the driver and the entire taxicab company. This driver typically does not have availability of radio dispatch and/or service contracts with hotels and is forced to work the public taxicab stands, primarily the airport, and any repeat business he/she may develop. Thus, the airport or the city becomes the de facto customer service department for these drivers. The city or airport's responsibility is to screen them (issue a permit), manage their conduct (require that they follow the taxicab ordinances), and discipline them when necessary (issue citations for violations).

Also included in category #4 is the firm or individual that leases individual taxicab permits but provides no other value to the user of the permit. In this scenario, the holder of a city or airport permit simply pays an annual fee for the permit privilege and then leases the permit to the independent taxicab driver who must provide his own vehicle, insurance, maintenance, etc. associated with operating a taxicab. Nothing else is provided. In essence, the permit holder provides no additional economic value to the permit other than to lease it at a markup to a city-licensed taxicab driver with an inspected vehicle. The category #4 taxicab firm management may have little or no contact with the drivers - only to resell (lease) the taxicab permit on a daily or weekly basis. In this scenario, the city or airport again assumes the role of being the customer service department for the



independent taxicab drivers. In addition, the airport or hotel also becomes the stand manager for these taxicabs when they operate there. Unfortunately, the loosening of regulations of local taxicab systems has resulted in a very large number of U.S. taxicabs falling into category #4.

Thus, this continuum of taxicab firms ranges from the full service taxicab firm which invests in providing significant infrastructure support for taxicab service and makes an important contribution to solving the community's mobility problems, down to that of a simple permit holder who either operates a taxicab as an independent or

leases his taxicab permit to the highest bidder who then operates as an independent. At the high end of this continuum is the full service taxicab firm, which adds significant economic value to the city permit while using typically experienced independent contractor drivers' service managed by the company. At the low end one has a single vehicle owner-operator or lease driver who is unaffiliated with an established company and the city or airport inherits the day-to-day management role, supervising this driver. Table two below presents a tabular presentation of the different taxicab firm models discussed above.

Taxicab Firm Structure	Employee Driver or Independent Contractor	Collective Service Provision ⁴	Ownership of Vehicles	Insurance Coverage on Vehicles and Firm
Full Service Taxicab Firm	Independent Contractors/ Employee drivers		Fleet Ownership	
Taxicab Management Firm	Independent Contractors		Lease Vehicles	
Taxicab Dispatch Firm	Independent Contractors	Partly	Lease Vehicles	
Independent Taxicab Operators	Owner-operator	Very little	Lease Vehicles	Very little

Table 2:
Different taxicab firm models derived from the sloping curve diagram's market segmentation analysis



Most city regulatory systems are set up as if they still had only category #1 and #2 taxicab firms when they now have category #3 and #4 taxicab firms and, as such, they assume very little of the management role of taxicab drivers. As a result of regulatory choices made, local communities have become the customer service department for many of category #3 and #4 taxicab firms. The city processes the taxicab driver permit (interviews and processes the initial application of drivers), provides orientation in the form of mandated taxicab driver training, enforces discipline through giving citations to drivers

who do not follow the rules, and answers consumer questions about services, lost and found, and accident information among other inquiries.

With the new reality of minimal active management of drivers by many taxicab firms, the regulatory agencies (city/county/state) must either gear up to provide day-to-day management of taxicab drivers or structure their ordinances in such a way that taxicab firms manage their drivers. This requires a fundamental rethinking of the role of local ordinances.

Regulatory Structure of the Taxicab Industry

The taxicab regulations are in most cases under the purview of the local government officials. A few states, such as Connecticut and Colorado, maintain taxicab regulation at state levels, but they are clearly the exceptions. Typically, local ordinances define the various aspects related to the functioning of the taxicab industry. These ordinances might include policy frameworks such as fare setting, entry and exit regulations, vehicle requirements, adequate insurance levels, record keeping requirements, and hopefully full service taxicab attributes that this paper recommends.

One of the fundamental requirements before the start of taxicab operations is the requirement to obtain the Certificate of Public Convenience and Necessity.⁵ This certificate must be obtained by prospective taxicab firms/operators. The certificate signifies that there is a demand for more taxicabs in the specified area. Such demand estimations, in turn, form the basis for firms to apply for additional permits/licenses to the regulatory authority. This certificate requirement was found in all the taxicab models undertaken as part of this study.

Along with the certificate requirements, the community-specific regulations are also dependent on several other factors, including but not limited to population size, income levels, and availability of other transit services. Thus, as would be expected, the regulations vary significantly from region to region. For instance, there were very few market entry and exit conditions (i.e. little or no regulatory control) in many communities from 1970-1990, thus giving rise to an open-market oriented taxicab model. Most, if not all of these communities have returned to some form of cap on the number of taxicabs permitted because of the over-saturation of small taxicab firms that the open entry model encouraged. As a result, many cities now require setting a minimum number of taxicabs for new firms applying to operate in their respective service areas. The larger the geographic area or greater the population, the higher the minimum fleet size will need to be in order to foster full service taxicab firms that are capable of providing community-wide service.

Economics of the Taxicab Industry

Applying economic theory to the taxicab industry provides valuable insights into the prevalence of the different market models, such as perfectly competitive markets and natural monopolies.⁶

In a perfectly competitive economic model, information, including price and a knowledge of the differences in the products or services offered, is one of the key ingredients for the consumer to have in order to complete his/her evaluation and make a choice regarding taxicab service. However, in the taxicab industry, the comparison of services provided by different taxicab operations is not easily discernable or apparent to potential users.

For the driver, revenue maximization is the goal. When rates are set by the city, short trips which require the driver to spend as much time getting to the pick-up address as he spends taking the passenger to his destination, are revenue neutral or far less profitable than longer trips where the meter is running proportionally longer compared to the time required to pick up the fare. Drivers usually make the most money with all long trips, do reasonably well with a mix of long and short trips, and do poorly with only short trips. This is why

there are almost always long taxicab lines at hotels and airports where the longer trips are more prevalent.

In an open entry market (as illustrated by category #3 and category #4 in Figure 1) where there are too many taxicabs available, the drivers flock to the major traffic generators, hotels and airports, where there is a higher likelihood of acquiring a better trip. This in turn extends the wait for each driver for his next trip making for a less efficient, less profitable scenario. Shorter trips into neighborhoods for grocery, medical and other trips are shunned due to their unprofitability.

Municipal regulators want all requests for service met, long or short. Often, a regulators response is to add more taxicabs in service, which continues the reverse economic push to polarize the service. Thus, it follows that in the open entry market model (taxicab permits issued to all who meet minimum standards), several inconsistencies arise which negatively impact the industry functioning and performance.

Problems in the Regulatory Structure of the Taxicab Industry



Several problems in the taxicab industry's regulatory framework arise due to the "fractionalization" of the taxicab market. This comprises the gamut of different business models shown in Figure 1. This fractionalization refers to scenarios wherein there is minimal control over market entry and exit (open entry), leading to the devolution of the taxicab industry into several smaller firms trying to make a profitable venture. To each of these prospective new taxicab firms, the economic model may seem profitable. Driven by such expectations and the relatively low cost of entry, they start taxicab-related business activities by either acquiring taxicabs (in a deregulated market) or obtaining permits purchased from existing taxicab firms. As previously discussed, such a process, unless checked, creates far more taxicabs than are needed to service the demand, with the result that all drivers and consumers suffer as service levels decline and driver incomes shrink. Predictably, equipment deteriorates, drivers don't want to take short trips and lose their place in line, and therefore better drivers leave the industry for other jobs.

A good example highlighting the depth of this problem is in Dallas, Texas and the Dallas/Fort Worth International Airport. The D/FW Airport, which dispatches 2,000 taxicab trips each day, is home to nearly 2,000 taxicabs. At many times throughout the day, as many as 500 taxicabs line up in the holding area to service the airport, waiting for fares for as long as three or more hours. Those left waiting must get a long trip to justify the wait or they have lost money. This also results in short trip refusals. Such a system drives the more experienced independent contractor drivers from the airports, who would rather work their radios and personal clients. Due to the large taxicab lines at the airport, these good independent contractor drivers will typically drop off their airport bound customers and deadhead back (make a return trip without a customer) to the city or take another radio call rather than get into a long airport taxicab line.

The deregulation and subsequent re-regulation of taxicabs in the city of Seattle is another example indicative of the taxicab deregulation experienced by many major U.S. 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."

"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 on the street, tension and animosity among drivers with the potential for violence, etc. Pleas for reviews were frequent."⁷

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

The above examples further reflect the problems that arise due to the deregulation of the taxicab industry. The incentive structure for taxicab service providers in such a deregulated environment does not permit optimal exchanges between the service providers and the taxicab users. Thus, the regulators are under growing pressure to revise the regulatory structure. To further illustrate problems that arise due to the deregulatory environment, the next section provides a comparative analysis of the two dominant taxicab firm models in the United States, i.e. the full service taxicab firm and the unaffiliated independent owner-operators.

Comparison of the Full Service Taxicab Company Model and the Independent Owner-Operators Model



At the macro level, the taxicab market primarily distinguishes between two market models that define the U.S. taxicab industry: the full service taxicab company operators on the one end, and the unaffiliated independent one-vehicle owner-operator taxicab driver on the other. For comparison of the two business models of the taxicab industry, it is essential to put them in the perspective of the deregulatory process of the industry and its impact on the overall service levels. Along with that, it must also be stressed that several structural problems arise due to the deregulation of the taxicab industry. Thus, it is essential to critically evaluate each factor that impacts the functioning of such market processes. An understanding of the different taxicab models in the light of the various dimensions defining the scope and functioning of the taxicab industry, (including insurance coverage, access to technology, vehicle maintenance and replacement, fares/price levels, service and safety level, communications problems, additional customer services, short trip coverage, and community-wide area coverage), would allow for a better assessment of the problems and provide solutions for the same.

The following is a comparison of the two primary taxicab market models that are part of the U.S. taxicab industry. This analysis is based on the various services/features that cover the gamut of service and usage dimensions of the taxicab service providers and users.

1. Insurance Coverage: In the case of individual owner-operators and permit-only-lessor firms, there is usually very little insurance coverage, as the driver may be able to afford only a minimal level of security against any form of damage to property and personal injury. If for example, an unaffiliated owner-operator driver is sued for negligence, the most that could be recovered would be the value of the vehicle. On the other hand, the full service taxicab company with a large taxicab fleet size, providing community-wide operations, has a group insurance package on not only its vehicles, but the firm as well. It has been found, that most full service taxicab companies have insurance coverage that exceeds what is required by local ordinances and state law. This is indicative of the full service taxicab firm's commitment and ability to provide high levels of service and their need to protect their significant capital investment.

2. Access to New Technology: In the taxicab industry, performance and profitability are measured to a large extent by the number of trips an independent contractor driver is able to provide on a daily basis. Such performance is significantly impacted by the driver's access to technologically advanced tools such as Global Positioning Satellite systems (GPS), and/or a radio/computer dispatching system. From a large full service taxicab company's perspective, access to such technologies provides huge economies of scale allowing for more efficient operations. For instance, in a full service taxicab firm, using GPS and computerized dispatching, once a driver completes a one-way trip, the likelihood of finding a return passenger is higher as the firm's dispatcher is aware of the driver's presence in that part of the community. This allows the dispatcher to assign any passenger requesting a taxicab service to the closest available taxicab at that time and place. Thus, the possibility of making a return trip without a customer (known as "deadheading") is drastically reduced and the driver is much more productive and earns more income.

On the other hand, the smaller firms and the unaffiliated individual owner-operators with little access to the technology, unaware of the prospective passengers, would engage in cost inefficient transactions most times, or worse yet, would avoid a trip that would appear to lead the driver to an area where a return trip is unlikely. Resorting to cell phones and pagers may provide short-term business for such small firms, but in the long run, the technology handicap would eventually prevent optimal business operations for these drivers.

According to the 2004 Taxicab Division Fact Book,⁸ the adoption of computer technology by the various taxicab firms is evidenced by 100% usage of computers for billing and payroll functions, along with approximately 93% usage of computers for dispatching functions, in firms with more than 100 taxicab in their fleet (full service taxicab companies). Markedly, this dependence on technology falls to 77% for billing purposes, and to a low of only 24% usage for dispatching function, in the case of small taxicab firms (employing anywhere between 1 to 24 taxicabs).

3. Vehicle Maintenance and Replacement: The taxicab users in general also voice concern about poor service levels that they perceive

as being inferior relative to the fares that they are charged. From a legal standpoint, many local ordinances contain vehicle replacement clauses. Under a full service taxicab company model, it is usually easier for the local regulators to pass laws requiring vehicle replacement after a certain number of years. And since most full service taxicab companies operate large fleets, decreases in maintenance costs that are associated with the addition of newer taxicabs and the establishing of a good preventive maintenance program, are economic incentives to update a company's fleet. They would not only face legal consequences of not adhering to the law, but such actions would also negatively impact their market standing/brand image. The costs of such an action would be too high to undertake, thus replacing taxicabs in the fleet as required by the ordinance is an incentive for the full service taxicab companies.

On the other hand, for the smaller taxicab firms and unaffiliated individual owner-operators, vehicle replacement and brand image is typically not a priority, nor does the economic benefit of lower maintenance costs for one vehicle provide an incentive for an owner-operator to upgrade to a newer vehicle. They are prone to adopting a "cost-avoidance" approach to this issue making every effort to avoid legal requirements that should be met. Thus, it turns out that since no tangible incentives exist in such a market structure for such small-scale operators, they continue operations with the same vehicles for long periods of time. This is simply because the cost of purchasing newer vehicles, coupled with unforeseen risks of financial loss due to uninsured accidents, outweighs the cost of paying fines and avoiding the legal requirements. Also, their vehicle purchase decisions usually involve buying used vehicles since they typically only carry the mandated liability coverage. And the longer the markets and regulators permit such individuals to sustain such an unregulated behavior, the better for the drivers, but not for the consumers.

Such market behavior is elaborated further by the findings from the 2004 TLPA Taxicab Fact Book.⁹ The study finds that for small fleet firms (ranging from 1-24 taxicabs), the average taxicab was 8



years old. This decreases by half to approximately 4 years old for firms with taxicab fleet size greater than 100. Also, the study finds that 88.6% of the individual owners and the smaller firms (in the fleet range 1-24) stated that there were no age limits on taxicabs, whereas this number went down to 23.1% for the large full service taxicab firms (fleet size of 100 and more). Such statistics clearly indicate that full service taxicab companies are more responsive to ordinances related to vehicle replacement and maintenance, as compared to the unaffiliated independent owner-operators and small sized taxicab firms.

4. Fares/Price Levels: Another reason for persistent consumer discontent towards unregulated taxicab services providers is the varying, and in many cases, higher taxicab fares. Such issues arise from the lack of the consumer's knowledge about the fares and service charges in a taxicab market, or when overpaying is the only way for consumers to get short trip service.

Price Watchhouse's Office of Government Services prepared one of the most comprehensive analyses of taxicab deregulation and regulation, and examines the impact of deregulation on price structures in the taxicab industry.¹⁰ Six U.S. cities that had deregulated their taxicab previously through open entry were examined in depth (Berkeley, Oakland, Phoenix, Portland, San Diego, and Seattle).

"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."

Professor Gorman Gilbert, one of the country's foremost writers on taxicabs and a former commissioner of the New York City Limousine and Taxi Authority, writes 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 neighborhoods.... 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 clearly more affluent businesspersons, vacationers, and conventioners 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.'¹¹

Such problems arise most often in the case of unmanaged independent owner/driver operating environment. This is expected, as these drivers are not under any fleet management structure and may at times modify the fare meter in their own vehicles resulting in unauthorized higher fares for the consumers. The consumers on the other hand, limited by time and knowledge of the industry, often fall prey to such corrupt practices, or pay the higher fares because they are happy to get service.

This problem gets drastically reduced (and is almost nonexistent) in a full service taxicab company-operating environment. This is because of their adherence to the local ordinances that ensure that such firms' taxicab operations are fair. The large size of full service taxicab companies also means that any complaint from consumers could jeopardize business operations (or market position) for the whole firm. Their drivers are less inclined to overcharge consumers primarily because they have access to many more trips and do not want to jeopardize their relationship with the full service company. To maintain the brand image and high levels of quality, the company would also undertake steps necessary to ensure that they inform consumers about the existing fare levels. They may do this by explicitly advertising their fares on the vehicle, complementing it by using other marketing channels such as radio, newspaper and/or TV commercials. Thus, the regulatory procedure, supported by a full service taxicab company model creates a self-correcting mechanism, which ensures that consumers' interests are protected.

5. Service and Safety Level: Another key issue that has been raised in several consumer studies is the feeling of insecurity felt by some consumers while utilizing the taxicab services. This problem also finds its roots in the deregulated structure of the taxicab industry. This takes the form of an externality of the deregulation procedures that has translated into an unsafe and poor service environment for the users of the taxicab.

In continuation with the six-city study on the impact of deregulation in taxicab industry, the Price Waterhouse's report stated that:

"Service quality declined. Trips refusals, a decline in vehicles age and condition, and aggressive passenger solicitation associated with an over-supply of taxis are characteristic of a worsening in service quality following deregulation."¹²

Certain technical aspects relating to vehicle maintenance and vehicular pollution control checks have often been cited as a problem that goes unnoticed in the context of small firms/individual owner-operators. Evidence suggests that absence of any constraints and

indifference towards possibility of the loss of brand image leads to such behavior from the independent owner operators and small firms. On the other hand, the sheer market image that full service taxicab companies command and draw competitive mileage from, translates into a self-correcting mechanism that ensures adherence to meeting technical standards and maintaining high standards of quality and service. Larger, full service taxicab firms are more likely to have, or to require, regular maintenance programs which lessen their overall vehicle operating costs and significantly decrease breakdowns.

6. Communication Problems: Another problem is the presence of drivers who do not have a suitable command over English, and fail to understand the destination route requirements along with the other needs and requests of taxicab users. Such inappropriate exchanges between driver and consumers are significantly reduced under the case of a full service taxicab company. Due to the large size of operations and established market positions, such firms take necessary steps to ensure that drivers are better trained to meet consumer requirements. Even if problems with understanding the customer's destination arise, in-cab data terminals and GPS technology permits the company dispatcher to virtually guide the driver to the destination in the shortest time or shortest distance given current traffic conditions. This is not possible with the unaffiliated owner-operator taxicab driver model using only hand radios or cell phones.

7. Additional Customer Services: As previously shown, the taxicabs operating under the unaffiliated owner-operator model provide considerably fewer services as compared to the services offered by taxicabs in a fleet of a full service taxicab company. In contrast, in the full service taxicab company, services such as electronic credit card processing machines and computerized dispatching systems supplement the rest of the customer services package.

To further illustrate this aspect, the 2004 TLPA Fact Book finds that only 52% of the taxicab companies with fleet sizes of 1-24 vehi-

cles reported acceptance of credit cards towards payment of fees. On the other hand, this number goes up to 85% in the case of large taxicab firms with fleet size of 100 and above. The study also reports that only 11.4% of the cities had dress code enforcements for drivers in taxicab firms with fleet size between 1-24, which significantly went up to 53.8% in the case of fleet size of 100 and more. ¹³

8. Short Trip Coverage: Another concern voiced by consumers are the problems they encounter when the taxicab drivers find out that a customer needs to go to a nearby place -- the proverbial "short trip". Such situations usually arise at the airports, where the airline passengers are serviced by an independent owner-operator driver, who may routinely act rudely and at times even reject to the short trips -- preferring to get back in line at the airport stands. Airline passengers also report being unnecessarily taken over longer routes across the community before reaching their final destination, imposing an unjustified cost on them. This is due to the fact that the driver has to meet a certain revenue goal. Long waits and small fares make drivers contemplate going the "long way" to help them meet this revenue goal.

However, in a full service taxicab company, the management requires the taxicab drivers to undertake any trips, irrespective of the distance. The shorter trips are mixed with the longer trips the company offers so the driver takes each trip and generally will meet his revenue requirements. On the other hand, unaffiliated independent owner/drivers, with no such restrictions, and only guided by the short term (single trip) profit motive would not willingly undertake such trips and thus create all the problems related to short trip travel. Short trip refusal is also true for out of the way trips to and from low density suburban neighborhoods. Owner operators working at airports also put pressure on the city and airports to implement a minimum fare rule which results in significantly higher costs for the consumer -- up to \$5 per mile for short trips from the airport -- hardly a positive image for the visitor.



9. **Community-wide Area Coverage:** Local regulators are faced with the task of providing a taxicab environment wherein all neighborhoods are covered in the service area. In such a scenario, deregulated taxicab environments do not provide the incentive structure that would ensure adequate coverage of all such neighborhoods. This is because independent owner-operator drivers have no obligation to cover all areas, especially when their profits are not maximized. At the same time, since they have little quality and brand image concerns, they may even refuse to drive to many neighborhoods. And with no effective means to determine if they are responding to calls from these undesirable areas, there is little to no pressure brought to bear on their compliance with the requirements to service all calls for service.

On the other hand, full service taxicab service providers are most often legally bound by city ordinances to provide taxicab service to all parts of the community. Furthermore, computerized dispatcher records of the large full service taxicab firms indicate whether or not these calls are being serviced. Their decision to not provide complete community-wide coverage would also harm their brand image and inversely affect their future demand levels. The following is a tabular comparison of the independent owner-operator driver and the full service taxicab firm models on the basis of the various dimensions of the taxicab industry that have been previously discussed.

Table 1:
Comparison of
Structural,
Operational and
Functional Features of
the Unaffiliated
Independent Owner
Operators and Full
Service Taxicab Firm
Models

Features	Unaffiliated Independent Owner Operator	Full Service Taxicab Company
Insurance Coverage	Little general liability coverage due to individual (small scale) operations	Group insurance package on all vehicles and firm
Technology Access	Very little incentive to adopt GPS, electronic billing and other technologies	Large scale operations ensure adoption of GPS, computer dispatching, and automated billing facility
Vehicle Maintenance	Low priority to maintain vehicle due to lack of any supervision at the firm level and minimal enforcement at the regulatory level	Priority to ensure market image and service levels drives large firms to keep vehicles in good running condition and minimize breakdowns
Fares/Price Levels	Fares tend to vary -- driver's discretion on fare levels can raise passenger costs	Fixed price structures are followed to meet regulatory requirements and ensure repeat customer usage
Service and Safety Levels	Very poor as there is no regard for brand image	Highly responsive service and safety to retain market image
Language and Communication	Little training of English for immigrant drivers running independent taxicab operations, who have little or no incentive to improve it	Drivers (including immigrants) are usually trained in English or not retained; computer dispatch gives the driver written details for improved customer service
Additional Customer Service	Very little additional service due to small size of operations	Usually provide extensive services such as radio dispatch, credit card processing, 24-hour service, lost and found service
Short Trip Coverage	May refuse short trip if the driver finds route unprofitable	Abiding to the ordinance requires the companies to undertake any trip requested by passenger
Community-wide Area Coverage	Small scale operations of independent owner operators by nature limits their coverage to major traffic generators -- such as airports and hotels	In most cases, coverage includes all neighborhoods due to large scale taxicab operations providing a greater volume of calls in the neighborhoods

Components of a Modern Regulatory System

The modern taxicab industry technology that includes computer dispatching, GPS monitoring of vehicle location, quick and secure credit card processing, and greater driver security is possible only if it can be supported through the overhead generated by a substantial number of vehicles. However, this new technology, especially computerized dispatching, is critical to the management of independent contractor drivers if greater productivity and revenue per vehicle are to be achieved in the taxicab industry. This increased productivity reduces the pressure for rate increases, and assists taxicab firms to maintain, or in some cases, adequately provide services to the elderly and transit dependent as well.

In some U.S. cities, absent specific regulatory requirements, some independent contractor drivers may decide whether or not to accept each radio or dispatched trip. The taxicab firm dispatcher offers the passenger trip to the driver. Usually the dispatched offer for business is taken, but not always. This poses a problem for the typical taxicab firm, which is required by its original Certificate of Convenience and Necessity to accept all requests for service. This is particularly relevant to out-of-the-way locations and/or high-crime areas, which are often undesirable trips for obvious reasons. On the other hand, if the city taxicab driver permit requires that drivers do not turn down offered fares, then management can be maintained with new tech-

nologies. This is especially true when GPS computer dispatching systems are utilized. Thus, city officials can manage individual driver behavior through licensed taxicab firms if the proper ordinances are developed and the exclusion of such driver behavior is a requirement of city code.

In most cases, city/county/state government regulators need not completely change their form of local passenger transportation regulations in order to reverse the decline in local services. Steps may be taken in the typical regulatory structure to reverse the trend toward unsupervised independent contractor drivers.

The first step is the recognition that management of the driver workforce must be through the individual firms vested with permits. In the case of taxicabs, it is up to the taxicab firms to add value to their taxicab permits, and that value includes managing the drivers in compliance with local regulations. In order to do this, however, firms must be of sufficient size in a balanced market (proper number of taxicabs to serve taxicab passengers) to afford modern taxicab technology, and ordinances need to be written to require the use of such technology to manage the independent contractor driver. If the supply of taxicabs is in balance with the taxicab market demand, everyone wins: the driver, the firms, the community, and most of all, the customer.

An Alternative Approach to the Allocation of Future Taxicab Permits

Modern regulatory systems must improve on their abilities to set the appropriate number of taxicab permits for their communities. A recent survey by this author, of North American cities and the methodologies these communities utilized to determine the number of taxicab permits within their jurisdictions, revealed that population and/or some combination of population and other factor(s) were used by the majority of cities responding to the survey.

Community officials have rationalized that there is a relationship between the number of people and the need for taxicab service within their communities. Often the number of taxicabs permitted is fixed to a population ratio. For example, city ordinances will affix the number of taxicab permits as "one permit per 1,500 population". Thus, a city of 150,000 would authorize up to 100 taxicab permits. Such a methodology, while common, bears only a slight relationship to the actual taxicab demand in many communities. In most communities, taxicab demand is driven much more by the various market segments of taxicab demand and their presence or lack of presence.

A more market-based formula for a city to use in determining the appropriate number of taxicabs to permit would be to take the actual demand for taxicab service within the city as measured by driver trip sheets to the permitted taxicab companies. In this manner, if there is a 5% increase in trips over a year ago (and the prior year was normal), there would be a reasonable assumption that the market could absorb up to a 5 % increase in the number of taxicab permits. If all taxicab drivers were required to keep accurate trip sheets and turn them in, this analysis would be a simple calculation, but an expensive one to develop, since all trips would have to be posted and totaled. Questions of honesty, and reliability of the data (what taxicab drivers want more taxicabs on the streets?) plus cost, render success of this approach as highly unlikely. Thus, surrogate measures for demand can and should be used.

The most easily accessible data available on taxicab trips outside of prepared driver trip sheets would be the dispatch information from the individual taxicab firms and the trips dispatched from the airports. Missing, of course, would be trips picked up on the street or at public taxicab stands where there would be no record of the service. Using computerized dispatch data from the individual taxicab firms might also be questioned since there is obviously a potential conflict of interest. Taxicab firms want to lease additional cars or sell independent operators their colors, insurance, and radio calls. In order to do this they need additional permits and therefore may be tempted to expand their actual numbers of radio calls if it were to result in increasing the number of permits available to them. However, such data is difficult to forge. Thus, communities should incorporate this data whenever possible. For local trips, computerized dispatch records could be used if care was taken to verify a sample of their data to ensure officials that the information being supplied was accurate. With large full service taxicab firms, there should not be a problem and such measures should be utilized in the allocation of additional permits when the need can be effectively demonstrated through verifiable electronic data methods.

In such a scenario, it becomes essential that the data on actual number of taxicabs dispatched from the city airports be used as one of the primary sources for determining the number of taxicab permits to be issued by the city administrators. The actual number of hotel rooms and any percentage increase in hotel room should also be part of a more demand-based formula for estimating future taxicab permit requirements. While not perfect, the use of computerized dispatch records, airport taxicab trips, hotel rooms, convention business, general community use of taxicabs, and population shifts, as a formula generator for taxicab permits is very practical and far more accurate than population alone.

Conclusion

Every industry is affected by the regulatory environment that is provided by city, state and federal agencies. Such regulations can vary significantly, especially when the industry structure is highly fragmented, as in the taxicab industry. The administration of the taxicab markets by local regulators varies significantly from region to region and is, in most cases, very unique to each region.

As evidenced by the findings of this paper, the deregulation or fragmentation of the taxicab service providers has led to several structural problems that have severely impacted the successful working of the industry. Users are not happy, drivers' earnings are below expected norms, firms are unable to function profitably, and there is a significant decrease in customer service on the whole. This has led to a significantly negative impact on the industry's image. In such a scenario, it is essential that in the public's interest, the markets be guided by a regulated approach to make the entities involved in this process benefit from the market reforms (in this case, returning to a managed market structure).

Such a shift to a managed market structure, supported by a full service taxicab company environment would also allow communities to benefit from various specialized services that only large taxicab firms provide as part of their service offerings. For instance, in several cities, taxicab companies offer transportation equivalent to serve the needs of citizens with disabilities (covered under the American with Disabilities Act) – services that can only be provided by large taxicab companies that provide community-wide service.

On occasion in policy formulation at the city level, the taxicab permit has been seen as a means to achieve the social aims of local politicians – this is thought to be achieved through a systematic allocation of the taxicab permits to certain under-represented economically disadvantaged groups in the society. This measure as a social policy is often instituted to provide individuals in such minor-

ity groups a chance to participate in the taxicab industry as owners. However, such initiatives create an uncompetitive and often oversupplied market (due to the preferential allocation of permits) and only results in harming the interests of other taxicab firms, drivers, and consumers in the industry.

Utilizing policy reform measures, such as those discussed in Section I of this paper, "Components of a Modern Regulatory System," city administrators should write ordinances that clearly define operational requirements for prospective taxicab firms. While supporting full service taxicab operations, the ordinances should also include clearly defined penalties for unaffiliated individual drivers who fail to conform to the legal requirements.

To complement the reforms process, minimum taxicab fleet size requirements must be set on the number of vehicles that are to form part of a full service taxicab company. This is crucial to validate the regulatory procedures in place and bring into the market efficient and consumer friendly businesses in the taxicab industry. Some clauses may also emphasize the service capabilities of the full service taxicab firms. This may include specific information on additional service provisions such as radio dispatching, GPS technology, and credit card processing, among others. The goal of such ordinances would be to inform prospective and existing full service taxicab companies on the requirements for operating a taxicab service. By doing so, the regulators must also try to move unaffiliated individual owner-operators into a full service taxicab-oriented operational environment.

Finally, at the community level, the city administrators must draft ordinances that support the full service taxicab company-operating model. This is vital because only in the case of full service taxicab firms is it functionally possible for the city administrators to monitor the firm's operations and ensure that the consumer interests are being enhanced by adherence to legal requirements.

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