

Whither Uber?: Competitive Dynamics in Transportation Networks

Benjamin Edelman — November 2015

Suppose Acme Widgets manufactured cheaper widgets by dumping toxic widget byproducts in the river behind its factory. By foregoing the anti-pollution efforts that competitors use and that, to be sure, the law requires, Acme would gain a cost advantage over its peers. Unaware of Acme's methods, consumers would favor its products, and its market share would predictably surge. But few would celebrate this outcome—pollution that ultimately harms everyone, requiring clean-up at the public's expense.

In the transportation sector, there are reasonable arguments that Uber, Lyft, and kin (collectively, transportation network companies or TNCs) have chosen a similar approach. To be sure the companies offer important technical and business model innovations, which I discuss momentarily. But in cutting corners on issues from insurance to inspections to background checks, they push costs from their customers to the general public—while also delivering a service that plausibly falls short of generally-applicable requirements duly established by law and, sometimes, by their own marketing promises. Despite excitement about the benefits they provide, it's far from clear that the companies have chosen the right approach.

The benefits of app-based transportation networks

Even the staunchest critics concede that TNCs bring important efficiencies to the markets they serve. Consider, for example, the task of assigning drivers to passengers. Historic telephone-based dispatch of traditional drivers today seems laughably inefficient. When a customer calls a dispatcher who then alerts drivers by radio, the sequential oral communications are quite literally a “game of telephone” with inevitable errors. But errors are only the tip of the iceberg. At best, a dispatcher could find the closest available driver. But dispatchers have limited information about driver availability and locations, and might end up matching a passenger with a far-away driver, thereby delaying the driver's arrival to the customer and simultaneously increasing the driver's unpaid “backhaul” with no passenger aboard. At least as worrisome is that dispatchers have been accused of demanding kickbacks for referring desirable passengers such as those headed to an airport—further distorting matching of passengers and drivers. TNCs remedy these mishaps by replacing phone calls with text entries and GPS, simultaneously eliminating dispatcher cost, delay, errors, and potential bias. It's shrewd, efficient, and by all indications highly effective. The TNC approach also dispenses with proprietary taxi meters, often surprisingly pricey, in favor of standardized mass-produced smartphones drivers can also use for other purposes.

In addition, TNCs add important levels of accountability for both drivers and passengers. Most passengers have had the experience of waiting for a driver who never comes. That could be an error, perhaps the result of double-dictation of a passenger's location. But consider a driver who is driving, unpaid, to a passenger pickup—only to see a roadside hail right along the way. With no further unpaid driving required, the hail will often be too good to refuse—even if it leaves the telephone booking unsatisfied. Meanwhile, if the passenger happens to see an available taxi, he too has every incentive to hop in—even if that's not the vehicle the dispatcher sent. Each party may regret shortchanging the

other. But anticipating that the other may in turn shortchange him, they're likely to do so anyway. TNCs fix this too, in part with real-time tracking of vehicle location (so a passenger can see the vehicle en route), plus accountability through reputations (penalties on both sides for no-shows) and as well as payment linked to traveling in the assigned vehicle.

Though controversial, the TNC approach to pricing also seems to reflect a step forward. There is no logical reason why urban transportation prices must be the same price at all times of day. To the contrary, if prices reflect both supply and demand, flexible passengers will shift journeys to off-peak times, and price spikes will inspire drivers to provide service at peak times. Of course there are losses, most notably to the lucky passengers who previously obtained vehicles at peak times at no additional charge. But if those benefits were previously assigned randomly, greater surplus is created through optimal matching of passengers to vehicles based on willingness to pay. In principle, TNCs on net should be able to make all customers better off, including through lower prices at off-peak times. All of this would be virtually impossible in an offline context—too difficult for passengers and drivers to identify the appropriate price in light of available information about changing conditions, plus inevitable disputes at the end of a journey. But in a mobile app, electronic contracting and automatic record-keeping make this easy.

Still other efficiencies come from the prospect of using a single vehicle for multiple purposes. It is tragic to see a taxi driver drive a personal vehicle to a depot to pick up a taxi—contributing to congestion and pollution along the way, yet failing to transport any passengers; wasting time on a drive with no direct benefit to anyone; and parking, buying, and maintaining two separate vehicles, only one of which is used at a time. TNCs handily eliminate these sources of waste by reusing the driver's personal vehicle, albeit simultaneously raising the problems discussed in the subsequent sections.

Ultimately, the TNC electronic dispatch model facilitates numerous further efficiencies. In developing countries, jitneys have long provided multi-passenger hop-on-hop-off service, often a fixed price to travel as far as you want on a single main road or route. Despite low prices, jitneys tend to have limited appeal; consider an origin or destination off the preset route. In contrast, TNCs can facilitate on-demand multi-passenger routing, including limited detours for pick-ups and drop-offs so long as inconvenience to others falls within the given parameters. Centralized algorithms and routing are crucial for these improvements; such flexibility would be difficult or impossible without strong IT support. Meanwhile, TNC drivers can also transport packages, restaurant meals, and almost anything else—perhaps even in spare time when passenger demand is light. One wonders about the distinctive benefits of purpose-specific vehicles, but perhaps efficiencies from shared usage can outweigh any capabilities not available. To its credit, TNCs stand ready to try.

Cutting corners and worse

While the widespread adoption of TNCs plainly results in part from the innovations just discussed, usage is also follows TNC use of regulatory shortcuts – less than strict compliance with applicable rules.

A first potential concern is that TNC drivers lack medallions or taxi permits. Many cities require such permission to accept roadside hails, and in major cities, buying a medallion entails considerable expense. That said, the TNC approach seems not to require a medallion: In most jurisdictions, the defining characteristic of a taxi is permission to accept an ad hoc roadside hail, whereas TNC passengers request rides via a mobile app, making this “prearranged” transportation rather than “taxi” as a matter of law. This one, at least, TNCs seem to get right—a clever hack to escape a regulatory scheme that TNCs (and many passengers) consider ill-advised.

But what about the myriad other requirements the legal system imposes on commercial drivers? Consider: In most jurisdictions, a “for hire” livery driver needs a commercial driver’s license, a background check and criminal records check, and a vehicle with commercial plates, which often means a more detailed and/or more frequent inspection. Using ordinary drivers in noncommercial vehicles, TNCs skip most of these requirements, and where they take such steps (such as some efforts towards a background check), they do importantly less than what is required for other commercial drivers (as discussed further below). One might reasonably ask whether the standard commercial requirements in fact increase safety or advance other important policy objectives. On one hand, detailed and frequent vehicle inspections seem bound to help, and seem reasonable for vehicles in more frequent use. TNCs typically counter that such requirements are unduly burdensome, especially for casual drivers who may provide just a few hours of commercial activity per month. Nonetheless, applicable legal rules offer no “de minimis” exception and little support for TNCs’ position.

Differing standards for background checks raise similar questions. TNCs typically use standard commercial background check services which suffer from predictable weaknesses. For one, TNC verifications are predicated on a prospective driver submitting his correct name and verification details, but drivers with poor records have every incentive to use a friend’s information. (Online instructions tell drivers how to do it.¹) In contrast, other commercial drivers are typically subject to fingerprint verification. Furthermore, TNC verifications typically only check for recent violations—a technique far less comprehensive than the law allows. (For example, Uber admits checking only convictions within the last seven years,² which the company claims is the maximum duration permitted by law. But federal law has no such limitation, and California law allows reporting of any crime for which *release or parole* was at most seven years earlier.³) In *People of the State of California v. Uber*, these concerns were revealed to be more than speculative, including 25 different Uber drivers who passed Uber’s verifications but would have failed the more comprehensive checks permitted by law.⁴

Relatedly, TNC representations to consumers at best gloss over potential risks, but in some areas appear to misstate what the company does and what assurances it can provide. For example, Uber claimed its service offered “best in class safety and accountability” and “the safest rides on the road” which “far exceed... what’s expected of taxis”—but taxis, with fingerprint verification of driver identity, offer improved assurances that the person being verified is the same person whose information is checked. Moreover, Uber has claimed to be “working diligently to ensure we’re doing everything we can to make Uber the safest experience on the road” at the same time that the company lobbies against legislation requiring greater verifications and higher safety standards.

A separate set of concerns comes from insurance. For one, TNCs encourage drivers to carry personal insurance rather than commercial insurance⁵—anticipating, no doubt correctly, that drivers might be put off by the higher cost of commercial coverage. But TNC drivers are likely to have more frequent and more costly accidents than ordinary drivers: they drive more often, longer distances, with passengers, in unfamiliar locations, primarily in congested areas, and while using mobile apps. To the extent that drivers make claims on their personal insurance, they distort the market in two different ways: First, they push up premiums for other drivers. Second, the cost of their TNC accidents are not borne by TNC customers; by pushing the cost to drivers in general, TNCs appear to be cheaper than they really are.

In a notable twist, certain TNC policies not only encourage drivers to make claims on their personal policies, but further encourage drivers to commit insurance fraud. Consider a driver who has an accident during the so-called “period 1” in which the driver is running a TNC app, but no passenger has yet requested a ride from the driver. If the driver gets into an accident in this period, TNCs historically would deny both liability and collision coverage, claiming the driver was not yet providing service through the TNC. An affected driver might instead claim from his personal insurance, but if the driver admits that he was acting as a TNC driver—he had left home only to provide TNC services; he had transported several passengers already; he was planning more—the insurer will deny his claim. In fact, in all likelihood, an insurer in that situation would drop the driver’s coverage, and the driver would also be unable to get replacement coverage since any new insurer would learn the reason for the drop. As a practical matter, the driver’s only choices are to forego insurance coverage (a possibility in case of a collision claim, though more difficult after injuring others or damaging others’ property) or, more likely, lie to his insurance issuer. California law AB 2293, effective July 1, 2015, ended this problem as to collision claims in that state, requiring TNCs to provide liability coverage during period 1, but offering nothing elsewhere, nor any assistance on collision claims.

Passengers with disabilities offer additional complaints about TNCs. Under the Americans with Disabilities Act (ADA) and many state laws, passengers with disabilities are broadly entitled to use transportation services, and passengers cannot be denied transport on the basis of disability. Yet myriad disabled passengers report being denied transport by TNCs. Blind passengers traveling with guide dogs repeatedly report that TNC drivers sometimes reject them. In litigation Uber argued that its service falls beyond the scope of the ADA and thus need not serve passengers with disabilities, an argument that a federal court promptly rejected.⁶ Nonetheless, as of November 2015, Uber’s “Drivers” page continues to tell drivers they can “choose who you pick up,”⁷ with no mention of ADA obligations, nor of prohibitions on discrimination on the basis of race, gender, or other prohibited factors.

For these reasons and others, numerous regulators have concluded that Uber cannot operate within their jurisdictions. But such findings are not self-effectuating, even when backed up with cease and desist letters, notices of violation, or the like. In fact, Uber’s standard response to such notices is to continue operation. Pennsylvania Public Utility Commission prosecutor Michael Swindler summarized his surprise at Uber’s approach: “In my two-plus decades in practice, I have never seen this level of blatant defiance,” noting that Uber continued to operate in despite an unambiguous cease-and-desist order.⁸ Pennsylvania Administrative Law Judges were convinced, in November 2015 imposing \$49 million of civil penalties, electing to impose “the maximum penalty” because Uber flouted the cease-

and-desist order in a “deliberate and calculated” “business decision.”⁹ Nor was this defiance limited to Pennsylvania. Uber similarly continued to provide service at San Francisco International Airport, and affirmatively told passengers “you can request” an Uber at SFO, even after signing a 2013 agreement with the California Public Utilities Commission disallowing transport onto airport property unless the airport granted permission and even after San Francisco International Airport served Uber with a cease-and-desist letter noting the lack of such permission.¹⁰ In some instances, cities ultimately force Uber to cease or suspend operations. But experience in Paris is instructive. There, Uber continued operation despite a series of judicial and police interventions. Only the arrest of two Uber executives compelled the company to suspend its casual driving service in Paris.

Competitive dynamics under incomplete enforcement

Looking at TNC operations, it is striking to see the incompleteness of regulation or, more precisely, enforcement. In this environment, competition reflects unusual incentives: Rather than competing on lawful activities permitted under the applicable regulatory environment, TNC operators compete in part to defy the law—to provide a service that, to be sure, passengers want to receive and buyers want to provide, notwithstanding the legal requirements to the contrary.

The brief history of TNCs is instructive. Though Uber today leads the casual driving platforms, it was competing transportation platform Lyft that first invited drivers to provide transportation through their personal vehicles. Initially, Uber only provided service via black cars that were properly licensed, insured, and permitted for that purpose. In an April 2013 posting by CEO Travis Kalanick, Uber summarized the situation, effectively recognizing that competitors’ casual drivers are largely unlawful, calling competitors’ approach “quite aggressive” and “non-licensed.”¹¹

Suppose, as Travis’s post indicates and as subsequent regulatory disputes seem to confirm, that casual driving services are and have been largely unlawful. Uber leaders clearly believe that such services are, on the whole, desirable and should be permitted, and any survey of consumers would likely agree. Assuming strict compliance with the law, how might Uber have tried to get its service off the ground? One possibility: Uber could have sought some jurisdiction willing to let the company demonstrate its approach. Consider a municipality with little taxi service or deeply unsatisfactory service, where regulators and legislators would be so desperate for the improvements Uber promised that they would be willing to amend laws to match Uber’s request. Uber need not have sought permanent permission; with great confidence in its offering, even a temporary waiver might have sufficed, as Uber would have anticipated the change becoming permanent once its model took off. Perhaps Uber’s service would have been a huge hit—inspiring other cities to copy the regulatory changes to attract Uber. Indeed, Uber could have flipped the story to make municipalities *want* its offering, just as cities today vie for Google Fiber and, indeed, make far-reaching commitments to attract that service.

Different as this may be from Uber’s actual strategy, it is far from unprecedented. In fact, it is probably the right strategy, and maybe the only strategy, if a company concludes that breaking the law is highly likely to provoke substantial penalties. Consider the experience of Southwest Airlines as it planned early low-fare operations in 1967. Southwest leaders realized that the comprehensive regulatory scheme,

imposed by the federal Civil Aeronautics Board, required unduly high prices, while simultaneously limiting routes and service in ways that, in Southwest's view, harmed consumers. Envisioning a world of low-fare transport, Southwest sought to serve routes and schedules CAB would never approve, at prices well below what regulation required. Had Southwest simply begun its desired service at its desired price, it would have faced immediate company-ending sanctions; though CAB's rules were increasingly seen as overbearing and ill-advised, CAB would not have allowed an airline to brazenly defy the law. Instead, Southwest managers had to find a way to square its approach with CAB rules—and, to the company's credit, they were able to do so. In particular, by providing solely intra-state transport within Texas, Southwest was not subject to CAB rules, letting the company serve whatever routes it chose, at the prices it thought best. Moreover, these advantages predictably lasted beyond the impending end of regulation: After honing its operations in the intra-state Texas market, Southwest was well positioned for future expansion.

Southwest's strategy was compelled by fear of regulators—knowing that breaching legal duties would guarantee severe penalties. But as Uber CEO Kalanick looked at Lyft in his revealing 2013 post, we see no such fear. Kalanick explains: Regulators “have chosen not to” bring enforcement actions “against non-licensed transportation providers,” yielding “one-sided competition” to competitors' advantage and Uber's disadvantage. Uber laid out regulators' weakness: “Regulators for the most part will be unable to act or enforce in time to stop them before they have a critical mass of consumer support.” Of course Uber might have moved to assist regulators, for example in gathering and organizing information about competitors' infractions, by proposing model regulations to adjust requirements in the way Uber considered wise, and by explaining the need for diligent enforcement to maintain fair competition. Uber could even have sued competitors whose methods competed unfairly—unlawfully!—with Uber's offering. Predictably, Uber did none of those things.

Uber's ultimate decision, to recognize Lyft's approach as unlawful but nonetheless to follow that same approach, is hard to praise on either substantive or procedural grounds. On substance, it ignores the important externalities discussed above—including safety concerns that sometimes culminate in grave physical injury and, indeed, death. On procedure, it defies the democratic process, ignoring the authority of democratic institutions to impose the will of the majority.¹² Uber has all but styled itself as a modern Rosa Parks defying unjust laws for everyone's benefit. But Uber challenges purely commercial regulation of business activity, a context where civil disobedience is less likely to resonate. And in a world where anyone dissatisfied with a law can simply ignore it, who's to say that Uber is on the side of the angels? One might equally remember former Arkansas governor Orville Faubus' 1957 refusal to desegregate public schools despite a court order.

Notably, Uber's approach puts other transportation platforms in a position that's at least as untenable. Consider Hailo's 2013-2014 attempt to provide taxi-dispatch service in New York City. On paper, Hailo had every advantage: \$100 million of funding from A-list investors, a strong track record in the UK, licensed and insured vehicles, and full compliance with every applicable law and regulation. But Uber's “casual driver” model offered a perpetual cost advantage, and in October 2014 Hailo abandoned the U.S. market. Uber's lesson to Hailo: Complying with the law is bad business if your competitor doesn't have to. Facing Uber's assault in numerous markets in Southeast Asia, transportation app GrabTaxi

abandoned its roots providing only lawful commercial vehicles, and began “GrabCar” with casual drivers whose legality is disputed. One can hardly blame them—the alternative is Hailo-style irrelevance. When Uber ignores applicable laws and regulators stand by the wayside, competitors are effectively compelled to follow.

Relatedly, when the competitive environment rewards lawbreaking, the victor may struggle to comply both with applicable law and with social norms. Notice Uber’s recent scandals: Threatening to hire researchers to “dig up dirt” on reporters who were critical of the company.¹³ A “God view” that let Uber staff see any rider’s activity at any time without a bona fide purpose.¹⁴ Analyzing passengers’ rides to and from unfamiliar overnight locations to chronicle and tabulate one-night-stands.¹⁵ Charging passengers a “Logan Massport Surcharge & Toll” for a journey where no such fee was paid, or was even required.¹⁶ A promotion promising service by scantily-clad female drivers.¹⁷ The CEO bragging about his business success yielding frequent sexual exploits.¹⁸ “Knowing and intentional” “obstructive” “recalcitrance” in its “blatant,” “egregious,” “defiant refusal” to produce documents and records when so ordered by administrative law judges.¹⁹ On one view, these are the unfortunate mishaps of a fast-growing company. But arguably it’s actually something more than that. Rare is the company that can pull off Uber’s strategy—fighting regulators and regulation in scores of markets in parallel, flouting decades of regulation and managing to push past so many legal impediments. Any company attempting this strategy necessarily establishes a corporate culture grounded in a certain disdain for the law. Perhaps some laws are ill-advised and should be revisited. But it may be unrealistic to expect a company to train employees to recognize which laws should be ignored versus which must be followed. Once a company establishes a corporate culture premised on ignoring the law, its employees may feel empowered to ignore many or most laws, not just the (perhaps) outdated laws genuinely impeding its launch. That is the beast we create when we admit a corporate culture grounded in, to put it generously, regulatory arbitrage.

Looking back and looking ahead

Take a walk down memory lane for a game of “name that company.” At an entrepreneurial California startup, modern electronic communication systems brought speed and cost savings to a sector that had been slow to adopt new technology. Consumers quickly embraced the company’s new approach, particularly thanks to a major price advantage compared to incumbents’ offerings, as well as higher quality service, faster service, and the avoidance of unwanted impediments and frictions. Incumbents complained that the entrant cut corners and didn’t comply with applicable legal requirements. The entrant knew about the problems but wanted to proceed at full speed in order to serve as many customers as possible, as quickly as possible, both to expand the market and to defend against potential competition. When challenged, the entrant styled its behavior as “sharing” and said this was the new world order.

You might think I’m talking about Uber, and indeed these statements all apply squarely to Uber. But the statements fit just as well with Napster, the “music sharing” service that, during brief operation from 1999 to 2001, transformed the music business like nothing before or since. And we must not understate the benefits Napster brought: It offered convenient music with no need to drive to the record store, a

celestial jukebox unconstrained by retail inventory, track-by-track choice unencumbered by any requirement to buy the rest of the album, and mobile-friendly MP3's without slow "ripping" from a CD.

Ultimately, Napster faced major copyright litigation, culminating in an injunction compelling the company to cease operations. Napster then entered Chapter 7 bankruptcy, and investors got nothing. One might worry that Napster's demise could set society back a decade in technological progress. But subsequent offerings quickly found legal ways to implement Napster's advances. Consider iTunes, Amazon Music, and Spotify, among so many others.

In fact, the main impact of Napster's cessation was to clear the way for *legal* competitors—to increase the likelihood that consumers might pay a negotiated price for music rather than take it for free. When Napster offered easy free music with a major price advantage from foregoing payments to rights-holders, no competitor had a chance. Only the end of Napster let legitimate services take hold.

And what of Napster's investors? We all now benefit from the company's innovations, yet investors got nothing for the risk they took. But perhaps that's the right result: Napster's major innovations were arguably insufficient to outweigh the obvious and intentional illegalities.

Uber CEO Travis Kalanick knows the Napster story all too well. Beginning in 1998, he ran a file-sharing service soon sued by the MPAA and RIAA on claims of copyright infringement. Scour entered bankruptcy in response, giving Travis a first-hand view of the impact of flouting the law. Uber today has its share of fans, including many who would never have dared to run Napster. Yet the parallels are deep.

It is inconceivable that the taxis of 2025 will look like taxis of 2005. Uber has capably demonstrated the benefits of electronic dispatch and electronic record-keeping, and society would be crazy to reject these valuable innovations. But Uber's efforts don't guarantee the \$50+ billion valuation the company now anticipates—and indeed, the company's aggressive methods seem to create massive liability for intentional violations in most jurisdictions where Uber operates. If applicable regulators, competitors, and consumers succeed in litigation efforts, they could well bankrupt Uber, arguably rightly so. But as with Napster's indisputable effect on the music industry, Uber's core contributions are unstoppable and irreversible. Consumers in the coming decades will no more telephone a taxi dispatcher than buy a \$16.99 compact disc at Tower Records. And that much is surely for the best.

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