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SAN FRANCISCO
MUNICIPAL TRANSPORTATION AGENCY
City and County of San Francisco

DIVISION: Finance & Information Technology

BRIEF DESCRIPTION: Presentation of the Nelson\Nygaard Study Regarding Credit Card Processing, Electronic Waybills and Back Seat Monitors in San Francisco Taxicabs.

SUMMARY:

- Nelson\Nygaard Consulting Associates was retained by the SFMTA in early August 2011 for a study of three issues facing the taxi industry: Credit Card Processing Fees; Back Seat Monitors; and Electronic Waybills.
- Attached is the report from Nelson\Nygaard for the SFMTA Board of Director's review.
- Taxi Services staff has reviewed the report submitted by Nelson\Nygaard on the referenced subject, and substantially agrees with the consultant's recommendations

ENCLOSURES:

1. Nelson Nygaard Taxi Study

APPROVALS:

DATE

DIRECTOR_____

11-28-11

SECRETARY_____

11-28-11

ASSIGNED SFMTAB CALENDAR DATE: December 6, 2011

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Purpose

Presentation of the Nelson\Nygaard Study Regarding Credit Card Processing, Electronic Waybills and Back Seat Monitors in San Francisco Taxicabs

Goal

This report supports:

Goal 1: Customer Focus: To provide safe, accessible, clean, environmentally sustainable service and encourage the use of auto-alternative modes through the Transit First Policy

Goal 3: External Affairs/Community Relations: To improve the customer experience, community value, and enhance the image of the SFMTA, as well as ensure SFMTA is a leader in the industry

Description

Taxi Services staff has reviewed the report submitted by Nelson\Nygaard on the referenced subject, and substantially agrees with the consultant's recommendations.

However, staff recommends that the Board take into consideration the following factors when considering whether to authorize use of the Square device, which is a card reader that plugs into the audio jack of a smart phone and allows the user to accept credit and debit card payments from anyone else.

1. The Square is not connected to the meter, and so those transactions would not be included in SFMTA or company reports of transactions.
2. Because there are no reports of these transactions at the taxi company, a passenger who questions a charge cannot get customer service support from the company or from Square, but must look to the driver.
3. The Square offers lower chargeback protection to drivers, at \$25 instead of \$75 for the systems that are connected to the meter.
4. The existing vendors float money to the drivers when they comply with the requirement of paying transactions within one business day. Square may withhold a payment until it actually clears if it has any reason to believe that it might not go through.
5. Some customers have expressed discomfort about paying a fare by allowing the driver to swipe the card through a driver's personal phone. Other customers have liked using the Square.

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With respect to the back seat monitors, staff would add to the report the anecdotal information that we have received from drivers that the prompts need to be very clear, large universal icons so that so that people with low vision and inebriated customers are more easily able to use them. We also strongly agree that the audio capacity should be disconnected in all units.

The City Attorney has reviewed this report.

Alternatives Considered

Continue the status quo on 5% credit card charges and implementation of back seat monitors and electronic waybills.

Funding Impact

None

Recommendation

Receive the Nelson\Nygaard Taxi Services Report.

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INTRODUCTION

Nelson\Nygaard Consulting Associates was retained by the SFMTA in early August 2011 for a quick study of three issues facing its Taxi Service staff and the taxi industry in general. The three issues are as follows:

- Credit Card Processing Fees
- Back Seat Monitors
- Electronic Waybills

After the summary of recommendations, each of these issues and the extent to which they intertwine are discussed in the following section. It is important to understand that many of the perceptions documented in this section are from the in-person interviews with drivers and taxi company management and from the town hall meeting notes, and may not be factually accurate. Their inclusion is meant to frame the issue and not to substantiate a perception and in some cases, a misconception. Where we have been able to obtain relevant data from other sources, we have attempted to shed light on some of these issues. The last section includes a detailed discussion of the recommendations and their justification.

The methodology used in this study primarily consisted of interviewing SFMTA Taxi Services staff, representatives from taxi companies, and drivers during the week of August 15. Follow-up calls for clarification purposes and to obtain additional data were also made. This included telephone interviews with representatives from the three credit card processing companies servicing the SF taxi companies. Additional research and phone calls to other cities' taxi regulatory staff and other industry representatives were also made in order to identify national industry trends associated with the three issues.

SUMMARY OF RECOMMENDATIONS

Credit Card Processing Fees

1. SFMTA should formally pre-qualify a credit card processing company or companies. Once the new company or companies are in place, SFMTA should end the waiver program.
2. SFMTA should adopt a policy allowing drivers to select bank accounts for the deposit of net income from credit card trips.
3. SFMTA should establish a minimum credit card amount.
4. SFMTA should not regulate Square or similar devices, but should require use of the secure in-vehicle credit card processing equipment.

Back Seat Monitors

5. SFMTA should require that companies that have cabs with back seat monitors either disable the audio component or enable drivers to control the volume and/or audio on/off switch from the driving position.
6. SFMTA should drop the waiver condition involving back seat monitors. The installation of back seat monitors should not be required by SFMTA, nor presented as a condition to the waiver. Whether or not a company installs back seat monitors should be a business decision.
7. SFMTA should conduct –or direct the conduct of – a comprehensive, statistically relevant “before–and–after” analysis on tip amounts to determine whether -- and to what extent -- back seat monitors prompt higher tip amounts.

Electronic Waybills

8. SFMTA should require all taxi companies (1) to collect waybill data electronically, (2) to periodically report to the SFMTA data related to planning purposes, and (3) to retain – and provide to the SFMTA upon request – other driver-specific information related to qualifying a driver for a medallion, revoking a medallion, criminal investigation, or studying industry statistics.
9. SFMTA should implement ways to improve the accuracy of electronic capture.

THE THREE ISSUES

Credit Card Processing Fees

Background

In 1997, the City of San Francisco enacted an ordinance, written by Supervisor Gavin Newsom, prohibiting taxi companies (also called color schemes) from charging drivers for the fees associated with credit card transactions. Prior to this ordinance coming into effect, the few taxi companies that had in-vehicle credit card processing capabilities passed along the fees to the drivers. It has been reported that the fees charged to the drivers at that time were in the range of 5% to 6% of the total fare, including tip. Once the ordinance became effective, the companies were supposed to absorb this cost.

However, as the use of credit cards for taxi trips became more prevalent, and more taxi companies added this capability, the cost associated with credit card processing fees became a financial burden for taxi companies that were complying with the law. One of the reasons that credit card usage has escalated

is due to all taxis being equipped with card readers over the last year. These card readers were installed in connection with the SFMTA's paratransit program, which utilizes taxis to a great extent, and were installed primarily to read the fare debit cards associated with the paratransit program, but they also able to read credit cards.

With the increase in credit card usage, the associated financial burden increased, and in some cases, threatened the financial solvency of some of the taxi companies, according to comments from some of the taxi company representatives interviewed. With this increased financial burden, taxi companies took alternative paths.

- Some taxi companies charged drivers for credit card fees in violation of the ordinance. Some drivers reported that the taxi companies retained this fee when drivers cashed in their credit card receipts.
- At least one company directed drivers to open their own merchant accounts and to be responsible for their own credit card processing fees. These companies would charge credit card processing fees (illegally) to the drivers who did not open merchant accounts.
- Some companies played by the rules and continued to absorb the credit card fees, but cried foul against the companies who were violating the statutes.

Thus for drivers, there was a hodgepodge of situations depending largely on the color scheme with which one was associated.

In October 2010, SFMTA introduced a "waiver" program whereby taxi companies promising to equip their cabs with back seat monitors and to upgrade their dispatch to provide electronically collected trip information (electronic waybill) could begin charging their drivers up to 5% on credit card tips. According to SFMTA Taxi Services staff, five of the taxi companies (DeSoto, Luxor, Metro, National, and Yellow) opted for this waiver program. As permitted by SFMTA, the charging of a 5% fee on credit card trips began in April 2011, noting that some of the companies have not completed the installation of back seat monitors, i.e., only a portion of their fleet is so equipped, and one company still has not equipped any of their cabs with back seat monitors. That said, SFMTA staff is under the impression that all five companies participating in the waiver program have developed the capability to electronically capture waybill information.

The 5% fee level on credit card transactions was in large part chosen by SFMTA given the national experience. (See National Industry Trends below.)

Driver Perceptions and Concerns

Several drivers protested the 5% fee being charged. These protests led to the conduct of "town meetings" to better understand the drivers' concerns and to the

temporary hold on additional taxi companies wishing to participate in the waiver program (pending the findings and recommendations of this study).

Based on feedback from the town meetings and from the interviews, the primary concern of drivers was their questioning the appropriateness of the 5% relative to the actual cost of credit card processing, with several drivers interviewed believing that cost is much less. One of the unintentional and unfortunate misperceptions reached by some of the drivers was that the difference was going toward the installation and serving of the backseat monitors, stemming from the inclusion of the back seat monitor condition of the waiver program.

While other drivers interviewed mentioned that the 5% -- in of itself -- was not that onerous, they did suggest that the 5% level should be considered in the context of other charges and tips that drivers routinely pay on daily basis, including the following:

- Bank charges. These include ATM fee, transfer fee, and customer service call fee charges (and cash withdrawal limits) associated with some of the bank accounts that, for some drivers, are set up for them by the taxi company's credit card vendors so that drivers can cash out their credit card trips. Some of the drivers interviewed mentioned they would like to be able to designate their own account, so they could choose the bank that has lower fees and/or less limiting restrictions. [Note that some credit card processing companies such as Verifone do allow drivers to select a checking or savings account of their choice or a reloadable debit card.]
- Late fee. Two different drivers interviewed referred to a 5% late fee that one company charges (on top of the 5% charge) if credit card slips are not turned in within 24 hours.
- Supplies. One of the taxi companies charges drivers for "supplies" related to credit card expenses and even waybills.
- Internal tipping. Several drivers interviewed noted the institutionalized tipping of taxi company personnel that many drivers face each day. One driver reported that such tipping for him routinely includes \$10 to the dispatcher (\$5 in and \$5 out) to get a vehicle in good shape. A larger tip is required to get a newer vehicle. A \$7.50 "surcharge" is required for a hybrid. One driver reported paying the dispatcher \$20 to get a preferred shift. Airport trips usually go the best tippers. And, a \$2 tip to the gas man. Another driver reported mandatory tipping (of an unspecified amount) to taxi company cashiers. This practice adds up to a minimum of \$12 in tips per shift to potentially well over \$20 in tips to company personnel.
- External tipping. Drivers face external tipping in the case of hotel doormen. An airport ride generally requires a payment of \$10 to a doorman.

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By detailing these fees and charges, the interviewed drivers were pointing out that all these costs add up. One driver interviewed felt like he was getting “nickel and dimed to death” and that the 5% fee exacerbated this feeling. To put this in context, the 5% fee equates to the following amounts at different percentages of credit card trips, noting that estimates from Yellow Cab have credit card payments representing 30% to 35% of the total number of taxi trips, and that this percentage is growing by a difference of 2% to 3% per year.

Percent of Trips Paid with Credit Cards	Average Income on Credit Card Trips Based on \$300 Revenue/Day Total	Fee @ 5%
30%	\$90	\$4.50
40%	\$120	\$6.00
50%	\$150	\$7.50

Some of the drivers interviewed felt that they shouldn’t have to pay for the credit card processing fees, especially since the requirement for credit card capabilities in all cabs comes from the SFMTA. One driver suggested that customers should pay for the convenience of using a credit card, and not the driver. He further suggested that this could be done via a discount for cash fare or a surcharge for credit card use equal to the cost of the processing fee. Another driver suggested that a way to reduce the total cost to drivers that stems from the 5% was for SFMTA to implement a minimum charge for credit card use. Both of these ideas are explored later in this report.

IRS Form 1099-K

Several drivers interviewed and who participated in the town hall meetings also expressed some concerns about the 1099-K report that credit card processing companies will be generating for drivers. This reporting has stemmed from the introduction of *IRS Form 1099-K*. *According to gaebler.com, a resource of small businesses and entrepreneurs, the IRS instituted Form 1099-K expressly to “ensure that small business owners who don’t declare all of the revenues they receive via credit cards, debit cards, gift cards and services like Paypal will no longer be able to hide those revenues from the IRS.* Historically, the revenues that small businesses receive through these payment processors have not been readily visible to the IRS. Starting in 2011, the gross amount of payment card and third-party network transactions will be recorded on a new IRS form, form 1099-K. In rolling out the new 1099-K form, the IRS is attempting to improve voluntary tax compliance by business taxpayers.”¹

The 1099-K thus is an annual report that tracks each credit card transaction, and reports the transactions for the year. Taxi driving has traditionally been a cash business, and as such, the underreporting of revenue is almost institutionalized, as it is with many cash businesses. Some of the taxi company managers as well as some of the taxi drivers interviewed commented that there are likely taxi

¹ <http://www.gaebler.com/IRS-Form-1099-K.htm>

drivers who are not paying any taxes at all. It was mentioned that many taxi drivers and their families receive public assistance based on their low-income status. Thus, the 1099-K report could provide evidence that drivers are misreporting income and this could pose an additional threat to the continuation of public assistance.

It is our assessment that the prospect of having a report that documents a higher income and the additional cost associated with the 5% fee are two reasons why some drivers refuse (even lucrative) credit card trips in San Francisco. Indeed, the SFMTA Taxi Services staff reports an increased number of customer complaints about credit card refusal over the last six months.

Alternative Devices – The Square

Some drivers, in order to reduce their out-of-pocket expense associated with the 5% charge, have turned to other new technologies such as the Square device.

Square, Inc.² offers a credit card reader that attaches to Apple products such as the iPhone, iPod Touch, and iPad that run with 4.0 and up, and with Google Android phones that run 2.1 and up. The Square reader is plugged into the headphone plug on the smart phone or iPad. It consumes almost no power and can be attached or detached anytime from the device.

According to Square,³ service agreements include the following:

- A fee of 2.75% per swipe for all cards,
- If a credit card is entered manually, the cost is 3.5% + \$0.15 per transaction,
- No monthly minimums,
- No annual fee or activation fee,
- Next-day payout, including automatic direct deposits to a bank account of the owner's choosing,
- Free credit card reader and app (for iPhone, iPad, and Android), and
- No limits on transaction size or number of transactions.

Square's policy on chargebacks (limited to a maximum of \$25 per transaction vs. \$75 per transaction for the current credit card processing companies) is that if Square reasonably believes that a chargeback is likely, Square may withhold the amount of the potential chargeback from payments due to the merchant until such a time that:

- a chargeback is assessed due to a customer's complaint, in which case Square will retain the funds;
- the period of time under applicable law or regulation by which the customer may dispute that the transaction has expired;
- Square determines that a chargeback on the transaction will not occur.

² <https://squareup.com/security>, <https://squareup.com/legal/ua>

³ *ibid.*

If Square is unable to recover funds related to a chargeback for which the merchant is liable, the merchant will pay the full amount of the chargeback to Square, including all costs and expenses.

One of the drivers interviewed does have a Square and does use it on occasion, suggesting to the customer that it is an alternative way to pay for the trip with the credit card, and in doing so, lessening his out of pocket cost from 5% to 2.75%. The driver also mentioned that some his customers liked the way the Square device could be used to e-mail the receipt to the customer's e-mail address.

Some of the taxi managers interviewed and representatives from Creative Mobile Technologies, George Anderson Group, and Verifone, the three credit card processing companies that collectively serve the SF taxi industry at this time, are critical of driver use of the Square because they point out that the use of alternative devices (1) decentralizes data and puts a kink in customer support; and (2) jeopardizes the security of personal information.

On the first point, they contend that credit card charges that go through the Square are unauditable by the company, and there is no way to check the charge against meter data as the meter is not connected to the Square device. If a customer questions the taxi company about a credit card charge, processed through the Square Device, it poses a challenge for the taxi company because it has no record of the charge. Moreover, who would the customer then call to question a call? George Anderson of the George Anderson Group reports this is a daily occurrence at Yellow Cab. One of the managers of one of the smaller companies mentioned this happens but infrequently. In comparison, when a credit card is processed through the in-house equipment, a printed receipt shows, among other information, the meter amount and any other extra charges including the tip amount, the date, the time, the cab number, and a unique trip ID. If there is ever a question, taxi company management can research the details of the trip via the trip ID. And, with all data centralized, there is integrity to the information and reporting SFMTA will soon be requiring.

On the second point, the taxi managers and credit card processing companies question the security of the Square, and in particular, whether the Square is in compliance with security standards established by the Payment Card Industry (PCI), which established security standards for organizations that handle cardholder information for the major credit, debit, prepaid, and ATM cards, as well as other types of cards.

Defined by the PCI Security Standards Council, the standards were created to increase controls around cardholder data to reduce credit card fraud via exposure. Validation of compliance is done annually for organizations handling large volumes of transactions.

The representatives of the three credit card processing companies that service SF taxi companies all question the PCI compliance of the Square device itself, but are also quick to point out that the smart phone or iPad to which the Square device is connected is not under the purview of the PCI, and hence, it is possible that someone hacking into a driver's phone can access personal information.

In response to these comments, we tried to contact a Square representative but were unsuccessful. The Square webpage claims that all of their software and hardware meet, and in most cases exceed, PCI-Compliant Tier-1 regulations, that applications are developed and follow industry-standard secure coding guidelines that are recommended by Open Web Application Security Project (OWASP), and that card numbers, magnetic stripe data, and security codes are not stored on Square client devices. The information on the web page also states that, as part of Square's security policy, its network and servers are housed in a security facility monitored by dedicated security staff, its software is developed using industry-standard security best practices, and that employees act in accordance with security policies to keep data safe. Standards such as using SSL and PGP are used with transferring data. Square does not store credit card information on phones.

At the same time, there have been unsubstantiated claims that some apps are able to extract this information from a smart phone.

We do not have the technical background to validate these claims. That said, the benefit of using the in-vehicle equipment is that the entire system is PCI compliant, all the data is in one place (for better reporting), and the taxi companies can respond better to customer inquiries about credit charges. The benefit of the Square to the drivers is a lower credit card processing fee. Intuitively, we can only surmise that the Square solution may be less secure because the smart phones and iPads themselves do not come under PCI scrutiny, but we cannot claim that with certainty. As for the customers, there is no hard data as to what they think about Square, and their perception is something that a customer survey in the upcoming study might cover.

What is the Cost of Credit Card Processing?

Returning to the main concerns of the drivers – how much does credit card processing really cost and if it is truly less than 5%, as the Square experience might suggest, what is the difference going to? It has been a challenge to an answer to both questions.

However, at the recent 2011 conference of the International Association of Taxi Regulators in Toronto, there was one presentation that attempted to shed some light on the “5% debate.” A representative from Evo Platinum Services, in a presentation entitled “A Discussion on the Costs Associated with Accepting Credit Cards at the Point of Sale for Taxis and Limo Industry,” stated that credit card processing fees, in general, are fairly dynamic, varying...

- In response to rapidly changing and highly competitive market forces and are set to create the right economic balance between participants in the payment network;
- By the type of retailer, cost of the sale, payment product type, processing technology the merchant uses and region; and
- Based on the type of payment product used and how that product is used.

It was also pointed out that different rates are set to also encourage product and market development, data quality, and risk management programs and tools.

Later in the presentation, Evo reports that they estimate the cost of credit card processing for the taxi industry to be:

- Swiped Check/Debit Cards 0.95% plus \$0.20 per transaction
- Corporate Cards 2.25% to 2.95% plus \$0.10 per transaction
- Reward Cards 1.95% plus \$0.10 per transaction
- Small Ticket⁴ Cards 1.65% plus \$0.04 per transaction

The Evo presentation goes on to suggest that the “true” cost of the credit card processing percentage is approximately 2.35% to 2.50%, based on a review of the Nilson Report, a periodical reporting on the state of the industry of consumer payment systems, the average costs of the industry, and new changes to legislation by Senator Durbin that focus on reducing the interchange fee charged by retailers for a good or service paid by a debit card.

This is just one take on this, but it is perhaps the first time that a credit card processing company has publicly stated estimates of this cost relative to the taxi industry.

We also spoke with representatives from Verifone, who participated in this IATR conference session in Toronto. They stated in the interview that the cost of credit card processing is approximately 3%, also noting that there are additional costs that they incur such as the cost items listed below:

- Equipment costs and their installation
- Air time (the cost of which can be substantial)
- 24/7 tech support
- Customer service support
- Chargeback service
- Warranty services

They further pointed out that it is these costs, plus profit, that round out the 5% fee on credit cards currently charged to SF drivers.

Back Seat Monitors

Background

Back seat monitors are touch screens mounted on the back of the front seat, and are readily accessible to customers in the back seat who are able to use a touch screen. Also called Passenger Information Monitors (or PIMs), they provide:

- A way for customers to pay for credit card trips without surrendering the credit card to the driver.

⁴ Under \$15.00.

- Key information to the customer about the trip and service: this can include the medallion/cab number; driver number, and rate information, as well as wayfinding and other information of interest to taxi customers and tourists.
- Entertainment along the ride, sometimes including clips from TV news items and talk shows, trivia questions, and written news items from different categories (national news, sports, entertainment, etc.). Volume control is provided through the touch screen.
- Advertising which can range from commercials to ads in margins; some units will bring up ads for restaurants and taverns based on the GPS coordinates; so as a taxi enters a street, an advertisement for a nearby restaurant will appear on the screen.

Of all these functions above, the most relevant to this study is that the back seat monitors enable customers (who are able to use a touch screen) to pay for his/her trip with a credit card while retaining the credit card and not surrendering it to the driver for processing in the front seat. It works like this:

At the end of a trip, a fare and any surcharges appear on the screen and the customer is prompted to enter a tip. Tips are calculated based on all charges, including extra fees and bridge tolls. For low fares, tips of varying amounts are suggested. Beyond a certain fare amount, the tip suggestions typically switch to percentages (typically 10%, 15%, and 20%, but they can be programmed to prompt for higher or lower amounts). A customer can also enter an amount of his or her choosing. When this selection has been made, the customer is prompted to swipe his/her credit card. After the transaction has been completed, the driver can provide a printed receipt from the front-seat printer.

In the industry, some units, like the ones in San Francisco, include a card swipe as part of the unit, while in some other cities, the card swipe is a separate unit also mounted where it can be accessed by a customer. It is also important to point out that some of the SF back seat monitors also have the capability to process a credit card in a contact-less manner, for example, through a smart phone app and a user inputting his/her password.

Back seat monitors are connected, by way of a cable, to an on-board computer's central processing unit (CPU) and from there to the meter and the dispatch and GPS units. With those attributes common to all back seat systems, there are two different types of back seat monitors which have two important differences:

- The back seat monitors installed by the George Anderson Group (Yellow) and Verifone (DeSoto, National) connect to the same CPU as the other in-vehicle equipment. This means credit cards can be swiped from either the card reader in front or from the card reader that is part back seat monitor. And, in these cabs, drivers cannot see what is on the back seat monitor from the front seat. Note also that card readers in the Verifone back set monitors have the built-in capability to accept the paratransit program debit cards. (They would first have to be enabled though.)

- The back seat monitors installed by Creative Mobile Technology (in Luxor cabs) attach to a separate in-vehicle CPU (there are two). Our understanding is that this solution was required for this configuration and monitors used, but that the general approach was undertaken to minimize the cost of implementation. Regardless, the configuration also requires the disabling of the front seat card reader from reading credit cards, noting that they can still read the paratransit debit cards. Another important difference is that the driver has a front seat mounted screen that replicates what is on the back seat monitor.

So, in the Luxor cabs, the driver is able to better assist a customer who is struggling to use the back seat monitor because the driver can see what's on the screen. On the other hand, if the customer is unable to use the card reader, or the card reader is malfunctioning, the driver – and customer – is out of luck as that is the only credit card reader that is tied into the system. The only alternatives at that point would be to generate a manual imprint of the card using what is often referred to as a “knuckle-buster” or to use an alternative device like the Square. From the driver interviews, we understand that both are used in such instances.

In the other cabs equipped with back seat monitors, the drivers interviewed report that they have a more difficult time with assisting customers who are struggling with the back seat monitors because they cannot see first-hand what is on the screen, BUT, they can offer a struggling customer an alternative: the use the front seat card reader to process a credit card payment, noting that the passenger would have to surrender the credit card to the driver (as they do in cabs that currently do not have back seat monitors).

Among those cities reviewed and documented later in this report under National Industry Trends, back seat monitors that are required only in Boston and New York have been installed by some companies in Dallas/Ft. Worth, Las Vegas, Los Angeles, Philadelphia, and Seattle.

Back Seat Monitors and the Waiver Program

As mentioned previously, five taxi companies opted to participate in the waiver program, of which four have begun installing back seat monitors and have varying levels of penetration of the monitors throughout their fleets.

From the interviews with taxi company representatives, we learned that DeSoto, Luxor, Metro, National, and Yellow were the five companies that are participating in the waiver program, and that as of mid-August 2011, these cabs companies had the following number of cabs so equipped:

- | | | |
|------------|----------|---|
| • DeSoto | 110 cabs | virtually their entire fleet |
| • Luxor | 60 cabs | out of their fleet of 229 |
| • Metro | 0 cabs | out of 24 cabs |
| • National | 76 cabs | virtually their entire fleet |
| • Yellow | 50 cabs | out of 500+ cabs; and 100 as of mid-October |

Thus, from this information, we can say that, as of mid-October 2011, approximately 350 cabs (23%) of SF's 1500 cabs have been equipped with back seat monitors.

The primary reason why back seat monitors became part of the waiver program was that SFMTA Taxi Services staff viewed back seat monitors as something that would enhance the customer's experience, as itemized in their features above. The waiver program thus included an element to incentivize the proliferation of back seat monitors (as opposed to mandating their installation).

Another supportive reason was that anecdotal information from some SF taxi companies and other cities also indicated that back seat monitors would result in increases in tip amounts – because of the tip amount/percentage prompting described above -- and hence would be a boon to drivers. New information obtained from two cab companies (see below) would seem to support this contention.

In addition, with the capability for advertising comes the potential of advertising revenue, although it is not clear at this writing who is financially benefiting from advertising and to what extent.

Do Back Seat Monitors Enhance the Experience of SF Taxi Customers?

No one knows for sure whether or not SF customers like back seat monitors. Moreover, it is a complicated question because there are several aspects to back seat monitors, listed previously, that may generate different responses.

For example, a hypothetical customer might like the fact that she can use the monitor to pay for her trip with a credit card without surrendering it to the driver. That same customer also might appreciate the monitor's display of information relating to the medallion/cab number; driver number, and rate information vs. how that information is posted in cabs that do not have back seat monitors. As she is visiting SF for the first time, she also might like the wayfinding information. At the same time, she might dislike the advertising, TV clips, volume and

brightness of the monitor, and have difficulty figuring out how to control the volume.

Several of the drivers, when asked in the interviews, whether or not their customers liked the back seat monitors, had both positive and negative responses, as follows:

Positive perceptions

- My customers like them.
- My customers like the information on rates and tourist information.

Negative perceptions

- Some of my customers have difficulty using the monitor and find it much easier and quicker to hand me the credit card for processing.
- My customers find the noise, commercials, and the brightness of the monitor annoying.
- When the system is down, my customers find it annoying that I have to utilize the imprint machine.

Weighing in on this topic were the managers of two of the taxi companies which have installed back seat monitors in their cabs. From the interview responses, we gathered both a positive and neutral comment:

- Back seat monitors bring convenience and consistency to customers, and if all cabs were so equipped, it would provide a way for customers to readily distinguish between legal and illegal cabs.
- Back seat monitors are a non-issue for the customers; customers do not seem to have a problem using them.

The above collection of observations presents a mixed bag of positives and negatives, further emphasizing the need for hard data by way of a customer satisfaction survey.

The only hard data that we were able to find resulted from a February 2011 “Taxi of Tomorrow Survey,” a customer satisfaction survey undertaken by the NYC Taxi and Limousine Commission. While the survey did not ask specific questions about the different characteristics of back seat monitors, or even about the back seat monitor as a unit, the survey did ask: What do you dislike most about cabs today? After “Too expensive,” (36.8%), the number two answer was “Taxi TV is annoying (31.3%).” From this result, we can conclude that there is at least one aspect of the back seat monitor that is not appreciated by a significant number (but still a minority) of NYC taxi customers. The result re-emphasizes the need in future customer surveys to ask more specific questions about the different

characteristics of the back seat monitor because there may be aspects about it that customers like.

Driver Perceptions and Concerns about Back Seat Monitors

From the driver interviews and town hall meetings, it is clear that SF drivers do not like the back seat monitors. To be fair, back seat monitors are relatively new, and there is anecdotal information (as opposed to hard data) that taxi drivers in other cities also didn't like them at first, with protests ensuing, but have since "gotten' used to them."

But, at this point in time, SF driver perceptions about back seat monitors were mostly negative. Their specific perceptions and concerns, as noted from the driver interviews, are summarized as follows:

Positive comments

- Two drivers have heard that back seat monitors increase tip amounts, and would be interested in seeing the data that supports this. (See discussion below.) One of these drivers has heard that two companies (DeSoto and Green) are supposedly running a "contest" to see which drivers get bigger tips (DeSoto has back seat monitors; Green does not) but noted this may not be conclusive.

Negative comments

- Most of the drivers interviewed stated that the noise – and hearing the same thing over and over -- is annoying and distracting to the point of being a safety issue. If a customer exits the cab with the volume set too loud, a driver would have to physically move to the rear seat if he/she wished to turn down the volume of the unit.
- Several of the drivers interviewed also commented that customers' use of the back seat monitor (for credit card trips) is more time-consuming than giving the credit card to the driver for processing in the front seat. Some customers have difficulty using back seat monitors for credit card trips, and this situation sometimes results in drivers losing a potential customer to another cab. This additional time can also present a traffic hazard and obstacle to Muni buses.
- One of the interviewed drivers mentioned that with front seat card readers, a driver can check or "test" the credit cards, and added that drivers cannot do this with the customer maintaining possession.
- One driver interviewed stated that when the system is "down," the only back up is the manual imprint machine, which has an inherent risk.

- One of the drivers observed that, depending on where it is mounted, the back seat monitor can provide an obstacle for the driver, from filling out a receipt to checking the back seat for left/lost items.
- A few drivers mentioned that back seat monitors destroy the interaction/relationship between driver and customer (i.e., takes away from play lists / ambiance), and believe that positive interaction generates a higher tip than a back seat monitor would.
- Two drivers listed among their concerns that back seat monitors add to the in-vehicle equipment that may be exposing them to harmful radio frequency exposure. (See discussion below.)

Perceptions of Taxi Company Representatives on Drivers and Back Seat Monitors

From the taxi company managers interviewed, we also heard both positive and negative perceptions voiced on driver attitudes toward back seat monitors. The comments below are specific to the companies that have experience with them.

Positive perceptions

- One manager believed their drivers like them, noting that the initial break-in period was rocky.

Negative perceptions

- More than one company representative acknowledged that the sound was a distraction for the drivers and would not mind if the audio was disabled.
- One company representative also acknowledged that it takes much less time for a driver to use the front-seat card reader than for customers to work their way through the back seat monitor, and that they have heard drivers complaining that they lose trips as a result.
- That same company representative qualified his remarks about drivers not liking back seat monitors by stating that drivers were always free to re-align with a company that doesn't have back seat monitors.

Other Related Comments from Taxi Company Representatives

The following comments about back seat monitors in general and in some case, their linkage with the waiver program, come from the interviews with representatives from taxi companies which are participating and not participating in the waiver program.

- A representative from one company which has installed back seat monitors commented that the decision to install a backseat monitor should be based on a business decision and not tied in with a requirement or an incentive program; he also stated that he would not mind if they were removed.
- A representative from a company not participating in the waiver program agreed, stating that back seat monitors should not be required, i.e., regulated by SFMTA; or even a part of an incentive program. He felt strongly that whether or not a company installs back seat monitors should be a business decision.
- Another representative from a company that has installed back seat monitors was not strongly in favor or opposed to back seat monitors; this company opted to participate in the waiver program (and install the monitors) solely to be able to charge the 5% fee.
- A representative from another company participating in the waiver program interestingly admitted charging the 5% fee to drivers since April 2011, but has no immediate plans to install any back seat monitors.
- A representative from other company that has installed back seat monitors is concerned about the lack of consistency in the SFMTA enforcing the conditions of the waiver. This same representative also agreed that linking the back seat monitors (and electronic waybills) with the 5% fee via the waiver program was a mistake, further commenting that these things should be treated separately.
- Representatives from several of the companies that have installed back seat monitors stated that they have seen no advertising revenue to date.
- A representative from one company which is not participating in the waiver program and has not installed back seat monitors has no interest in equipping their cabs with back seat monitors because he feels they are they are noisy and intrusive for the drivers. He also mentioned that if the company were required to install them, he would be in favor of disabling the audio component.

Back Seat Monitors and Tip Amounts

One of the contentions about back seat monitors is that they lead to higher tip amounts. As mentioned above, this assertion is based on the following:

- The prompted tip amounts/percentages are calculated based on all charges, including extra fees and bridge tolls.
- With lower fares, tips of varying amounts are suggested.

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- With higher fare, percentages of 10%, 15%, and 20% are suggested.
- These can be programmed to suggest any amount or percentage.
- While a customer can also enter an amount of his or her choosing, evidence in other cities suggest that the pre-programmed selections are chosen 70% of the time, as estimated by the industry.⁵

Various related newspaper articles from other cities suggest that back seat monitors have lead to huge increases in tips, and to averages above 20%; however, we were unable to obtain the supporting data for these claims. In addition, circumstances were different. For example, in New York City, and unlike SF, taxi customers were unable to use credit cards prior to back seat monitors being installed.

Accordingly, we asked some of the SF taxi companies to supply “before and after” data of the same cabs to determine whether or not increased tip amounts could be traced to back seat monitors. George Anderson Group (servicing Yellow) and DeSoto responded. Luxor stated they were unable to undertake such an analysis, owing to the state of their “before” data.

The results of these analyses *preliminarily* confirm that the back seat monitors do result in higher tips, on average.

- According to Mr. Anderson, the Yellow Cab analysis included all of its cabs with back seat monitors as of the end of September (about 100) with “after” data of credit card tips spanning the months from mid-April 2011 through September 2011. The “before” data reflected the average tips from credit cards in these same cabs, going back a year. The results were that the average difference in tip amounts was approximately 2.5% higher for credit card transactions originated from the back seat equipment. Note that an earlier analysis, as discussed in an e-mail from Mr. Anderson to Ms. Hayashi of Taxi Services indicated a 3.4% difference.
- DeSoto selected three cabs at random and analyzed the Verifone data on tip amounts for the months of September 2010 (no back seat monitors but with credit card charging capabilities) and September 2011 (back seat monitors installed). The chart below shows that the average tip amounts for these three cabs was 3.2% higher in September 2011.

	Sept 2010	Sept 2011	Difference
Total Credit Card Fares	\$8,878.00	\$15,434.50	
Total Credit Card Tips	\$1,413.75	\$2,952.51	
Tip Percentage	15.9%	19.1%	3.2%

⁵ Grynbaum, Michael M., "New York's Cabbies Like Credit Cards? Go Figure," New York Times: Nov. 7, 2009, Accessed Oct. 17, 2011
<<http://www.nytimes.com/2009/11/08/nyregion/08taxi.html>>.

There are some shortcomings to these analyses. The Yellow Cab analysis, while fairly comprehensive, reflects different months (and we were not sent the raw data). Conversely, the DeSoto mini-analysis, sent to us with the raw data, used the same month in different years (good) for the before and after analysis but reflected only three cabs. Nevertheless, these preliminary results are encouraging and do point for the need to undertake a more comprehensive and statistically relevant analysis to confirm that the back seat monitors do result in higher tip amounts.

Another interesting point to the chart above: DeSoto's total amount of credit card fares shows a huge increase from September 2010 to September 2011. This change seems to indicate that either the number of credit card transactions and/or the amount per transaction has increased dramatically. Regardless, both total fare and tip income have increased dramatically, and if this can be traced to the back seat monitor (as opposed to just an increase in credit card use in general), this increase would be an important finding.

Mr. Anderson reports that credit card trips currently reflect about 30% to 35% of the taxi trips (and can be as high as 40% on weeks when conventions and major events are in town) and that credit card usage has been increasing by a difference of 2% to 3% year over year. Mr. Anderson believes that back seat monitors play a contributing role to that increase, and will play an even greater role as more and more contact-less payments become more widespread and EMV2 is adopted in the US.⁶

Back Seat Monitors and Radio Frequency Exposure

Two of the drivers interviewed expressed a concern about back seat monitors adding to the in-vehicle equipment's linkage with radio frequency (RF) exposure. Our understanding is that RF exposure can be associated with wireless equipment, and that the back seat monitors are not wireless but are connected to a CPU with a cable. Thus, if there is radio exposure, the back seat monitor should not be a contributing factor.

That said, it is appropriate to address this concern in this study by summarizing the results of an RF exposure test undertaken at the direction of SFMTA specifically to respond to this general comment as voiced at the town hall meetings. In particular, a specific request was made to conduct radio frequency sampling in cabs in order to assess taxi drivers' RF exposure in the vehicles.

Based on a summary report provide to us by SFMTA taxi services, three cabs were sampled at various locations in and around the vehicles on July 29, 2011. RF readings were taken at various locations outside and within the cab. These locations included:

- the driver's seat: abdomen, chest and head areas;
- flush against the driver's side door panel, adjacent to the window motor;

⁶ Email and Phone Conversation between George Anderson and Will Rodman.

- outside the vehicle, centered on top of the engine hood;
- under the driver's side dash;
- flush against the radio microphone, driver's mobile data terminal (MDT), taxi meter, the passenger information monitor (PIM) and vehicle computer, modem, and router; and
- outside the vehicle, near the driver's side rear wheel well.

Real time direct reading RF measurements were made using a Holaday Industries HI-4433-STE isotropic electric field probe S/N: 101041 with a measurement range of 0.5 MHz – 6 GHz., and a Holaday digital system readout HI-4416 S/N: 100482. The sample probe was positioned at various locations, with the reading recorded per sample location. The probe was placed in a general area, or directly adjacent to equipment.

According to the report, all recorded data was zero for all samples, noting that the meter used for the sample collection encompassed most – but not all -- of the necessary frequency region needed for collection (0.5MHz – 6GHz). The report further noted that a small part of the UHF RF region -- from 0.3 to 0.5MHz -- of was unfortunately missing, and that for a complete assessment, the missing region should be sampled to confirm the absence, or presence of RF exposure.

Thus, the preliminary results of this test are encouraging, but more sampling to include this missing region, should probably be undertaken by SFMTA.

Electronic Waybills

Background

The concept of a waybill is fairly straight-forward. For years, drivers have completed paper manifests or waybills as a way of documenting each trip, including pick-up and drop-off addresses and fares and tips collected. Drivers then turn in the waybills to their taxi companies. As the only source of hard data, waybills are then used by the SFMTA to substantiate the driving history of medallion applicants and holders (so as to grant medallions and allow medallion holders to retain their medallions).

Beyond being a challenge for the taxi companies to store (SFMTA regulations require that waybill information be kept for at least 6 years), it is not reasonable for SFMTA staff to use paper waybills for planning purposes. This is because paper waybills are unreliable, with some reflecting an under-reporting of service rendered, and documented cases of “manufactured” waybills unveiled by Taxi Services staff. One of the taxi company representatives interviewed acknowledged that some drivers do not fill out paper waybills.

In contrast, the electronic capture of trip data directly from the in-vehicle equipment (e.g., meter and GPS) provides a more accurate account.

There still can be improvements to this accuracy. For example, some of the drivers interviewed noted that the accuracy of the electronic data can be skewed as a result of:

- drivers forgetting to turn the meter on/off;
- drivers not indicating the correct number of passengers on a given trip;
- a driver high flagging (e.g., on a negotiated fare);
- a driver with an empty cab turning the meter on to indicate via the top light that the driver is busy (a driver might do this on the way to a pick-up or at the end of a shift); and/or
- incomplete data resulting from when the system is down or when there is a hole in the GPS system.

Notwithstanding these shortcomings (and there are things that can be done to address some of these), company representatives and drivers interviewed alike agree that the data collected electronically is more accurate than that recorded manually on paper waybills.

What is also not in dispute among those interviewed is the universal recognition that more accurate reporting of service and statistical data will result in better planning. Based on the interviews and other documentation provided to us, there is common agreement among the SFMTA, the taxi companies, and the drivers that the electronic capture of data and the submission of certain data that will help the SFMTA with certain planning functions, and that is a good thing, as long as the electronic data transmitted to the SFMTA is done in such a way that minimizes theft/hacking.

During the course of 2011, the SFMTA was moving toward requiring the electronic capture and reporting of electronic waybills. In an attempt to incentivize the electronic capture of data (as opposed to requiring such), the SFMTA included the electronic capture of data as a condition to participating in the waiver program. However, these efforts brought the electronic capture of data to the forefront of drivers' issues -- specifically that, either way, the amount of electronic data capture would likely increase, and there were still some general concerns about it.

Driver Perceptions and Concerns about Electronic Waybills

Some of the interviewed drivers who represented (or claimed to represent) groups of other drivers stated that many drivers are wary of the electronic capture of data for some of the same reasons discussed previously in connection with the 1099-K report: specifically that electronic data capture may show that a higher income has been earned, which has potential implications upon taxes to be paid and possibly on eligibility for public assistance.

Drivers interviewed also were concerned about:

- Personal information captured electronically being susceptible to theft through hacking; and

- Electronic data being used to prove drivers were violating excessive hour thresholds.⁷

The “Compromise” Approach

In the course of this topic being discussed at the Town Meetings, the Taxi Services staff and industry stakeholders developed a compromise approach to the electronic collection of data. This approach had three key elements:

- The electronic capture of waybill information would not be required. The internal position of Taxi Services staff was that since the larger companies already had this capability and reflected 65% of the fleet, this amount would likely be sufficient for planning purposes.
- The periodic reporting of electronic information would not include personal information about income, but would include number of passengers, aggregate number of paid vs. unpaid miles, and locations, dates and times of pick-ups and drop-offs.
- To the extent that the SFMTA needs data for any other purpose (such as qualifying a driver for a medallion, revoking a medallion, criminal investigation, or studying industry statistics), it continues to have the authority to go to the companies and collect specific information based on the need.

Official adoption of this approach is still pending, awaiting the recommendations of this study.

And while the drivers interviewed seemed to be in agreement with the approach, some of the drivers still had some additional questions, which they hope the SFMTA will address – and make known to the drivers -- in fine-tuning the approach and in the spirit of transparency:

⁷ California Vehicle Code, Section 21702, prescribes limitation on driving hours. Subsection (a) states that “No person shall drive upon any highway any vehicle designed or used for transporting persons for compensation for more than 10 consecutive hours nor for more than 10 hours spread over a total of 15 consecutive hours. Thereafter, such person shall not drive any such vehicle until eight consecutive hours have elapsed. Regardless of aggregate driving time, no driver shall drive for more than 10 hours in any 24-hour period unless eight consecutive hours off duty have elapsed.” Subsection (e) proscribes the penalty for non-compliance as follows: “Any person who violates any provision of this section is guilty of a misdemeanor and is punishable by a fine of not less than one hundred dollars (\$100) nor more than one thousand dollars (\$1,000) for each offense.”

- What data is going to be used to verify driving history of medallion applicants and holders?
- How is this data going to be transferred to the SFMTA and what steps will the SFMTA and taxi companies take to prevent the theft of personal information?
- How long will the data be retained?
- What organizations—besides the SFMTA—would have access to the data? For example, some of the drivers indicated that they would not be in favor of the SFMTA sharing this information with SFO officials or the IRS.

Even without these additional points, it is our impression that most of the interviewees that drivers in general would support the compromise approach. Moreover, one driver interviewed welcomed the electronic capture of data, commenting that filling out a waybill is a waste of time, something that gets in the way of picking up the next customer, and potentially a safety hazard.

NATIONAL INDUSTRY TRENDS

Taxi regulators and taxi company owners in several cities and others in the industry (some previously contacted by or on behalf of SFMTA staff) were contacted in order to identify national industry trends with respect to the three issues. Details for these 11 cities are presented in this section and displayed in Figure 1.

The findings from this review indicate that:

- **Fees charged on credit card transactions are usually between 5% and 6%.** With one exception (Las Vegas), companies in every city charge drivers a fee on credit card trips. However, no cities are explicit in specifying what the fee actually covers, i.e., what other costs besides credit card processing fees, if any, are actually covered by this fee. In Las Vegas, customers are charged a flat fee of \$3 by way of a pass they must pre-purchase, to cover the cost of credit card processing.
- **More often than not, the fees charged to drivers on credit card transactions are determined by taxi companies.** While some of the selected cities set a maximum processing fee (e.g. Boston at 6%, New York City and Philadelphia at a maximum of 5%, and Las Vegas with a \$3 user fee), most of the other cities allow taxi companies to determine their

own fee. Incidentally, we are of the understanding that the New York City Taxi and Limousine Commission is considering reducing this fee to 4%.⁸

- **Most of the selected cities require that drivers accept credit cards.** Eight of 11 cities mandate that each taxi accepts credit cards. Only some cities regulate the mechanism by which the transaction is processed, e.g., via card readers in the rear or in the front of the vehicle. Boston requires readers in the rear so customers can complete the transaction themselves; New York requires that yellow medallion taxis have back seat monitors that have credit card capabilities, noting that NYC cabs have a partition between the front and back seat, and credit card capabilities were added in NYC with the advent of these back seat monitors. Other cities do not regulate the transaction mechanism.
- **Most of the selected cities do not have a regulated credit card minimum.** Most cities do not specify a fare minimum to use a credit card. The exception is in Los Angeles where a \$7 minimum charge has been instituted by LADOT.
- **Most of the selected cities do not require back seat monitors.** Only Boston and New York require back seat monitors. Some companies in the Dallas/Ft. Worth area, Las Vegas, and Philadelphia have equipped their cabs with back seat monitors. In Los Angeles, two of nine companies have installed them, and more companies are expected to install them soon. Seattle requires companies to request permission to install the monitors, as Seattle "isn't a big ad market for taxicabs."
- **About half of the selected cities require electronic reporting.** The following cities require monthly or annual electronic reporting: Boston, Ft. Worth, Las Vegas, Los Angeles, New York City, and Seattle. Other cities have access to achieved trip logs and other records, but they are not required to be electronic. Of the cities that require the reporting of electronic data, the particular data reported includes statistical information such as dispatch information, trip counts, revenue miles, etc.

⁸ In a telephone conversation with Gary Roth of the NYC TLC, Mr. Roth indicated that the TLC is discussing ways in which the 5% can be reduced to 4%. In the telephone conversation, he indicated that the TLC believes the actual cost of credit card processing to be approximately 2.75% and the cost of associated administrative and support services to be approximately 1%, and that 4% would offer a "fair medium."

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Figure 1 Summary of Industry Trends by City

City	Atlanta	Austin	Boston	Cleveland	Dallas/ Ft. Worth	Las Vegas	Los Angeles	NYC	Philadelphi a	Seattle	West Hollywood
Credit Card Fee	7-10%	5%	4%-6%	6%	5%-7%	\$3 fee (Taxi Pass) Paid by customer	5-10% (most are 5-6%)	5%	5%	3-5%	5%
Fee regulated or by company?	by company	by company	6% max regulated; fees set by company	by company	by company	Regulated	by company	Regulated (TLC considering 4%); drivers must be paid minimum 95 cents for every dollar charged	Regulated	by company	by company
Charge breakdown?	No	No	No	No	No	No	No	No	No	No	No
CC capabilities required?	No	No	Yes	Yes	Yes	No	Yes (regulated \$7 min.)	Yes	Yes	No	Yes
Transaction process	Mostly imprint; some computer equipment	Unregulated	Card reader require in rear	Varied, including drivers that call into call center for processing	Rear or MDT	Unregulate d	Card reader in front seat	Card reader a part of back-seat monitor	Card reader mostly rear; some in front	Card reader in rear	Unregulated (up to companies and equipment in vehicle)
Back seat monitors required?	No	No	Yes	No	No;very few (about 5%) have installed them	No;some have opted to install	No; 2/9 companies have installed them	Yellow medallion taxis yes; FHV's no	No; some have opted to install	no; company must request permission to install	No

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City	Atlanta	Austin	Boston	Cleveland	Dallas/ Ft. Worth	Las Vegas	Los Angeles	NYC	Philadelphi a	Seattle	West Hollywood
Ad revenue to drivers?	n/a	n/a	Agreements vary	n/a	No regulation	No regulation	Drivers-no; owners-may receive some	Drivers-no; owners – may receive some	n/a	No;goes from company that installed LCD screens to cab owners	No regulation
Electronic reporting required?	No	No	Yes	No	No(dallas) , yes(Ft. Worth)	Yes	Yes; requires dispatch trip request info and vehicle trip counts.	Yes	Some; mostly archived data	Yes	no

RECOMMENDATIONS

We have developed several recommended actions or policies designed to address the above issues. Prior to identifying these recommendations, we urge the SFMTA to “de-link” the connections between the three issues, which were connected via the waiver program. Each of these issues should be dealt with separately.

What this separation effectively means is modifying – or putting a temporary stop or an end to – the waiver program. However, given that taxi companies have entered into contracts with vendors based on their waiver program participation, SFMTA may leave itself open to legal challenges if the program is modified, temporarily stopped, or ended. This issue should be reviewed by SFMTA legal counsel before a decision is made. Also, as a practical matter, SFMTA should continue not accepting additional new waiver applications from taxi companies.

One of the immediate benefits of de-linking the three issues – and a stated goal of the Taxi Services staff -- is to reduce credit card processing fee assessments for drivers to reflect the actual cost of credit card processing fees.

Credit Card Processing Fees

1. SFMTA should formally pre-qualify a credit card processing company or companies.

Summary: Given that SFMTA has required taxi companies to provide credit card capabilities in all cabs, SFMTA should do what it can to ensure that the cost of credit card processing as covered by the drivers is minimized. We recommend that SFMTA pre-qualify one or multiple credit card processing companies largely based on their stated rate structure for credit card transactions but also based on support services and their fees, experience, and track record.

The first question to discuss with respect to the cost of credit card processing is who should cover this cost. Consideration was given to passing along the credit card processing fee to customers, similar to Las Vegas, as discussed previously. Indeed, in our research, California Civil Code 1748.1 does prohibit surcharges but does allow cash discounts.⁹ Based on our understanding, the code would allow a meter rate that includes the cost of credit card processing, with the meter

⁹ A discount for paying cash fare is legal in California per California Civil Code Section 1748.1: "(a) No retailer in any sales, service or lease transaction with a consumer may impose a surcharge on a cardholder who elects to use a credit card in lieu of payment by cash, check, or similar means. A retailer may, however, offer discounts for the purpose of inducing payment by cash, check, or other means not involving the use of a credit card, provided that the discount is offered to all prospective buyers", "(d) Charges for third-party credit card guarantee services, when added to the price charged by the retailer if cash were to be paid, shall be deemed surcharges for purposes of this section even if they are payable directly to the third party or are charged separately", and "(f) This section does not apply to charges for payment by credit card or debit card that are made by an electrical, gas, or water corporation and approved by the Public Utilities Commission pursuant to Section 755 of the Public Utilities Code."

programmed to include a flat or percentage discount applied to the fare if the customer is paying in cash. This would alleviate the company vs. driver battle over who pays for the credit card processing cost, while also alleviating one of the reasons why some drivers refuse credit card trips. Such a scheme might also prompt customers to use cash for lower fares instead of a credit card, which the drivers would prefer. However, it may also prompt lower tipping, and probably result in fewer trips which is counter to one of SFMTA's goals, that being to induce more taxi usage.

As previously discussed, such a scheme might generate a legal challenge, however, and thus it would be helpful for the SFMTA legal counsel to weigh in on such a strategy. Note though that there was such a legal challenge in Nevada where a customer convenience fee for credit card trips was similarly in place, and this ultimately resulted in that law being changed to permit the \$3.00 charge to customers.

Thus, the only entities left to cover the cost of the credit card processing fees are the drivers and taxi companies. We have seen a situation in which taxi companies have been expected to absorb the cost, but because of limited revenue sources, the financial solvency of some of the taxi companies was threatened. The only way for the taxi companies to cover such costs would be to request a gate increase. Thus, either way, the drivers would end up covering this cost. Thus, it behooves the SFMTA to try to minimize these costs as much as possible because the drivers will likely end up paying for it one way or the other, either directly or via the next increase in gate fees. We think it is cleaner – and in the end, probably less expensive – if these fees are paid for by the drivers directly but with the SFMTA doing what it can to minimize these fees.

These arguments have led to the recommendation to de-link the fees charged on credit card transactions and to pre-qualify one or more credit card processing companies to do business with SF taxi companies. One way to do this is for SFMTA to develop a Request for Information (RFI) or a Request for Qualifications (RFQ) or a Request for Proposals (RFP), depending on guidance from SFMTA's Contract Compliance unit, that would seek credit card processing companies wishing to be pre-qualified by SFMTA to do business with SF's taxi companies. The solicitation document should ask respondents to specify the equipment and software to be used, PCI compliance, experience and track record, among other criteria. At that point, there are two different approaches SFMTA could pursue.

In the first approach, SFMTA would establish a maximum rate and set of associate services related to credit card processing and see who wishes to "play." Respondents would then have to propose a rate that was at or below the rate, and would also specify ancillary fees for related services. A second alternative approach would be to leave it more open ended, see what the proposed rates (and rate structures) and ancillary fees are from the proposers and select one or more taxi companies to undergo a pre-qualification process (see below) where the selection is based on their stated rate structure for credit card transactions but also based on support services and their fees, experience, and track record. As a practical matter, it would facilitate the evaluation if one

rate structure (e.g., a straight percentage) was to be elicited, whereas more complex rate structures would be more difficult to compare.

Of the two approaches, it is possible that the first approach could lead to either fees that are not minimal and/or a dearth of respondents (if any), whereas the more open ended approach should garner more respondents with competitive rates. It is for these reasons that we lean towards the second approach, noting that both approaches are viable, and both approaches would allow current and new vendors to participate in the process.

Regardless of the approach, the SFMTA can then adopt a pre-qualification process that is now in use in Chicago to pre-qualify the credit card processing company or companies who are willing to be a vendor at the prescribed maximum rate (in the case of the first approach) or who have been selected in the second approach. This process would involve the SFMTA indicating to the proposers that they have been selected for pre-qualification, and may now contact one of the taxi companies to begin pilot program testing. As part of the pilot program, the selected credit card processing company would provide equipment free of charge during the pilot program phase. The taxi company participating in the pilot program would be responsible for any associated airtime/service fees. Once the equipment successfully passes pilot program phase, the credit card processing company would be qualified to begin selling its wireless credit card solution to any taxi company in SF.

Once the selection and pre-qualification phases have been completed, taxi companies would be given a set period of time to align with a vendor or vendors. At that point, the new rate structure would begin, and the 5% fee associated with the waiver program would formally end.

There is one important caveat to following either approach: the SFMTA could open itself up to legal challenges, given that there are current contracts entered into by companies are based on their participation in the current waiver program.

2. SFMTA should adopt a policy allowing drivers to select bank accounts for the deposit of net income from credit card trips.

One of the issues connected with some credit card processing companies are the additional bank fees on accounts established by the credit card processing companies (in conjunction with the taxi companies) for “their” drivers for depositing net income due drivers on credit card trips. Drivers are therefore “stuck” with these accounts and more importantly onerous fees such as those for ATM cash withdrawals, transfers and customer service calls, not to mention cash withdrawal limits, which, if low, effectively multiply the service fees.

SFMTA should establish a policy that specifically allows permits drivers to designate the bank account which they would like to receive deposits. Note that one of the credit card processing companies, Verifone, already has such a policy whereby drivers may choose a checking or savings account, or for those drivers who eschew banks, re-loadable debit cards. Note too that Verifone has available a smart phone app and internet access to a list of that driver’s credit card transactions and net income.

3. SFMTA should establish a minimum credit card amount.

One additional way to further decrease the total cost of fees on credit cards would be to eliminate credit card fees on shorter trips. This could be done by establishing a minimum fare for credit cards, similar to the \$7 minimum established by LADOT in Los Angeles.

This would likely result in more cash trips, which the drivers would prefer, and should be only a minor inconvenience to customers.

On the other hand, it may also dissuade customers from using taxis for short trips. Therefore, we suggest that such a policy be tried on a pilot basis. If the number of short taxi trips reduces dramatically as a result of the policy, the pilot should be discontinued. If the difference in the number of short trips is insignificant, the SFMTA should consider making this policy permanent.

Note that there were repercussions from Visa when this test was tried before in San Francisco by certain taxi companies. Since then, however, a new federal law was passed that allows minimum credit card charges, but no more than \$10.¹⁰

4. SFMTA should not regulate the Square device and other similar devices at this time, but should require use of the secure in-vehicle credit card processing equipment.

¹⁰ Dodd-Frank Wall Street Reform and Consumer Protection Act.
<http://consumerist.com/2010/09/amex-visa-mastercard-all-give-thumbs-up-to-10-credit-card-minimums.html>

If Recommendation #1 is implemented, and the driver fee applied to credit card fees is reduced (possibly to 3% or below), the main attraction of the Square and similar devices (low fee) will no longer be the case. Thus, it may happen that the use of alternative devices will diminish.

To us though, there appear to be enough reasons, not to ban alternative devices, but to require use of the in-vehicle equipment. Three benefits that resonate with us:

- Enhancing the customer experience by providing a printed receipt showing the data and time, the cab number the trip ID number, as well as the fare, additional fees, and the tip; this also enables the taxi companies to be more responsive to customers with questions;
- Ensuring the security of personal information; and
- Centralizing data (within each company) ensures data integrity and more accurate reporting

One reason not to ban alternative devices altogether is that they can serve in a back-up role, as an alternative to the imprint machine (“knuckle-buster”). However, it must be made clear – by way of policy -- that this is the only time that these would be allowed.

Back Seat Monitors

5. SFMTA should require that companies that have cabs with back seat monitors either disable the audio component or enable drivers to control the volume and/or audio on/off switch from the driving position.

The noise factor associated with the back seat monitor and especially the repetitive noise associated with advertisements, news and TV clips, etc. is more than an annoyance; it presents a distraction that could affect driving safety. Safely driving a cab is a difficult enough job without impairing the driver further.

We recommend a technological fix to the problem that either results in no audio, or installing a way for the driver to control the audio when there is no customer in the cab. The second approach may make the most sense as it does not preclude the customer from listening to the advertisement or clip if they wish, assuming that the installation of a driver volume control is not that costly. Such a cost should not be borne by the driver. If the cost is viewed as prohibitively expensive, there is always the option to disable the audio, which is a relatively straight-forward task.

6. SFMTA should drop the waiver condition involving back seat monitors. The installation of back seat monitors should not be required by SFMTA, nor presented as a condition to the waiver. Whether or not a company installs back seat monitors should be a business decision.

It is unclear at this point what SF taxi customers think of the backseat monitors that have been installed because there is no data on this. Customer data on this

topic would be useful though; hence, the recommendation for a specific question on back seat monitor offerings and characteristics to be included in any customer satisfaction surveys in the upcoming study. Moreover, it would similarly be a good thing to get statistically relevant attitudinal data on what drivers think of back seat monitors, as it is possible that the negative perceptions about them are stemming from a more vocal minority of drivers.

In the meantime, the implementation of Recommendation #5 should help mitigate the annoying aspects of the unit for drivers, noting that there are other characteristics of the monitors' mounting that still may present some convenience and safety issues, as described above by various drivers. This should be looked at by the SFMTA. Once the customer and driver attitudinal data has been assessed, SFMTA can then plot a course of action depending on whether customers really do think it enhances their experience... or not, and if so, what aspects they like about it, and what aspects they don't like.

Until then, we recommend that the conditions of the waiver with respect to the back seat monitor be dropped, and to pass along to the taxi companies that this is no longer a requirement. It would then be up to taxi companies, regardless of whether they are waiver program participants or not, to decide whether they (continue to) install them or not. In other words, this decision should not be connected with an SFMTA regulation or incentive; rather, taxi companies would make the business decision as to whether they want to install back seat monitors, with two qualifying conditions: (1) Recommendation #5 is followed for existing – and new – monitors installed; and (2) because this is a company business decision, it follows that the drivers should not be the ones to pay for their maintenance, installation, servicing, or replacement.

7. SFMTA should conduct –or direct the conduct of – a comprehensive, statistically relevant “before–and–after” analysis on tip amounts to determine whether -- and to what extent -- back seat monitors prompt higher tip amounts.

As discussed previously, the contention that the back seat monitor prompts higher tip amounts has been confirmed by some preliminary analyses. Because these analyses have limitations with respect to their conclusiveness, we recommend that SFMTA conduct –or direct the conduct of – a comprehensive, statistically relevant “before–and–after” analysis on tip amounts to determine whether -- and to what extent -- back seat monitors prompt higher tip amounts, and that the results be shared with taxi companies and drivers.

It is quite possible that the negative perceptions of some drivers may change with the implementation of Recommendation #5, and any conclusive analyses showing significantly higher tips – and more trips.

Electronic Waybills

8. SFMTA should require all taxi companies (1) to collect waybill data electronically, (2) to periodically report to the SFMTA data related to

planning purposes, and (3) to retain – and provide to the SFMTA upon request – other driver-specific information related to qualifying a driver for a medallion, revoking a medallion, criminal investigation, or studying industry statistics.

The electronic capture of data directly from the meter and GPS installed in cabs is more accurate than the information documented -- and in some cases, manufactured -- on paper waybills. It also reduces fraud and the labor required to combat fraud. These facts alone prompt the above recommendation, which is strongly urged. Without accurate data, any conclusions associated with SFMTA planning efforts are highly suspect. The more accurate the data, the more effective SFMTA's planning efforts will be.

The two largest taxi companies (Yellow and Luxor), reflecting 65% of the cabs in SF, currently have this capability. By requiring 100% electronic capture of information not only presents a more accurate picture, but it increases the efficiency and effectiveness of the Taxi Services staff. In addition, the practices at these two cab companies may differ from those at the smaller companies, thus affecting the representativeness of the results for all companies.

As part of this recommendation, all information currently reported on paper waybills should be collected (but not necessarily reported) electronically, and that paper waybills be used by drivers as a backup data collection tool – i.e., only to be used when the system is down.

SFMTA has not indicated to the taxi companies what electronic data needs to be reported periodically, noting that we have been privy to internal documents with preliminary list of data to be requested. At a minimum, data to be initially reported (electronically) should include number of passengers, number of trips, aggregate number of paid vs. unpaid miles, and locations, dates and times of all trip pick-ups and drop-offs. As part of this requirement, SFMTA should specify the required format. SFMTA should pursue development of this list and provide it to the taxi companies as soon as possible, with the caveat that the list could change as a result of the additional input needed for any new processes that arise from the upcoming study relating to relating to PC&N, fares, and gate fees.

With this reported data, SFMTA should begin to require basic statistical information as soon as possible for those taxi companies that already have this capability. It would also make sense to set a realistic date of compliance for those companies that do not have the capability.

To address and ease industry concerns, SFMTA as a “good-will” gesture should also (1) indicate that no individual’s personal income information will be reported to the SFMTA; and (2) provide a fact sheet specifying how this data will be maintained and transferred to the SFMTA to minimize theft opportunities, what purposes each data set will be used for, how long the data will be retained, and what other entities (if any) will be given access to the data.

We also agree with Taxi Services staff that it may be necessary to look at other data electronically captured from time to time and for various reasons including those specified in the fact sheet, and that this is not subject to qualification. For

example, one concern voiced by some drivers interviewed was that the electronic data could be used to check on excessive driving. The California Vehicle Code regulation, however, is clear and there for a purpose: the safety of not only the customers but the drivers themselves. So, it is likely that is something that the SFMTA will be monitoring, most likely based on randomly selected drivers. SFMTA is charged in part to help preserve public safety in connection with taxi services, as well as look out for the safety of cab drivers. This effort is in line with that obligation.

9. SFMTA should implement ways to improve the accuracy of electronic capture.

Several of the drivers mentioned that the electronic capture of data may not be as accurate as it could be because of the top light issue. In order to circumvent drivers having to invoke the meter to indicate they are “busy” when there is no customer in the cab, SFMTA should look into the replacement of top lights with ones that include a “busy” designation, such as the ones in Boston and New York City. In fact, this is something that SFMTA Taxi Services is already addressing. The staff is planning to develop an RFI for standardized top lights with this capability.

SFMTA should also issue policy statements on driver practices that are counter to data accuracy, such as how to properly record the number of passengers. SFMTA should ensure that taxi companies properly train (and re-train) drivers on proper use of the meter and in-vehicle equipment to thwart bad practices.