City of Seattle and King County
Taxi, For Hire Vehicle and Limousine Services Demand Study

Presentation
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Summary of Purpose

Better understand the demand for Taxis and Taxi-like services (including limousines, for-hire vehicles and ‘rideshare’ services) to help support policy formulation with information about market structure, patterns of use, and service quality.

Presentation outline:

- Background on market structure and current market dynamics,
- Review of data sources,
- Analysis of markets demand – City of Seattle and King County (excl. SeaTac),
- Analysis of service quality.
• There appears to be significant confusion in the market between Taxis and For-Hire-Vehicles (FHVs) arising from their similar appearance. This may have led to some understatement of FHV use in survey responses.
## Key Statistics on the Market

<table>
<thead>
<tr>
<th></th>
<th>Numbers of vehicles</th>
<th>Permitted to accept:</th>
<th>Quantity Controls</th>
<th>Safety Controls</th>
<th>Economic Controls</th>
</tr>
</thead>
</table>
| **TAXIS** | City only: 336
Dual Licensed: 352
County only: 240 | Dispatched / pre-arranged,
Hailed, Cabstand | Yes, License Caps set by city and county | Yes, Vehicle inspection | Yes, defined meter rate |
| **FHV** | City only: 1
Dual Licensed: 198
County only: 170 | Dispatched / pre-arranged
(Dual licensed and county vehicles can be hailed outside city) | Yes, License Cap (city) | Yes, Vehicle Inspection | Flat Fare |
| **LIMO** | 1102 | Pre-arranged | No | Yes, Vehicle inspection | Pre-set fare |
| **RIDESHARE** | Operate outside regulatory structure | | | | |
Trends in Market Supply in City of Seattle

Limo figures relate to Limos licensed by Washington State operating in King County, including Seattle
Trends in Market Supply in City of Seattle

• Market is very dynamic – evolving rapidly over the last 12 to 18 months

• Taxi supply increased slightly with the addition of Wheelchair Accessible cabs in 2010

• FHV licenses roughly doubled between 2010 and 2012

• Dramatic increase in limousines seen over last 12 - 18 months: ~600 (2011) ~1,100 (current)

• But through 2012 at least, total number of taxi trips per vehicle had remained relatively consistent (around 20 trips / day / vehicle in Seattle)

• Very new, and rapidly growing rideshare market
Data and Methodology

Quantitative data
- Public Survey by Tablet and online questionnaires, based on last trip
- Reported Operational data from odometer and vehicle inspection - city collected data
- Reported Dispatch data from larger company records

Qualitative data
- Perception of market, public surveys
- Perception of service levels, Institutional surveys
- Stakeholder Interviews
- Secret Shopper
Survey Overview

Surveys undertaken:

- Public Survey
  Tablet and online survey of Quantitative use and Qualitative views of services

- Institutional survey
  Invited online survey of Hotels, Restaurants and Medical Centers with a role in booking taxi transport for client. Quantifiable service levels and qualitative views of services

- Stakeholder survey
  Individual interviews and focus groups of taxi industry, taxi user and specialist facility providers

- Secret Shopper survey
  Covert in-vehicle observations, cross section of vehicle type and location.
Public Survey

Methodology
   Tablet based Intercept survey
   Online self completion survey

Sample selection:
   Spatial collection across city and county (Tablet)
   Responses weighted to population demographics (Census 2010)

<table>
<thead>
<tr>
<th>Respondent home address</th>
<th>Sample Size</th>
</tr>
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<tbody>
<tr>
<td>City of Seattle</td>
<td>1396 Responses</td>
</tr>
<tr>
<td>King County</td>
<td>281 Responses</td>
</tr>
<tr>
<td>Visitors</td>
<td>153 Responses</td>
</tr>
</tbody>
</table>
Institutional Surveys

Methodology:
Invited online self completion survey

Sample selection:
Institutions selected on basis of active role in booking taxis on behalf of customers / clients. Initial contacts made via trade and professional associations.

<table>
<thead>
<tr>
<th>Respondent type</th>
<th>Sample Size</th>
<th>Examples of institutions surveys and locations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medical Centers / Medical transportation providers</td>
<td>22 Responses</td>
<td>Harborview, UW, Virginia Mason, Overlake, Children’s, Seattle Cancer Care Alliance, Hopelink, etc.</td>
</tr>
<tr>
<td>Hotels</td>
<td>20 Responses</td>
<td>Downtown, South Lake Union, SeaTac, University, First Hill, Kirkland, Issaquah, etc.</td>
</tr>
<tr>
<td>Restaurants / Bars / Nightclubs</td>
<td>48 Responses</td>
<td>Downtown, Belltown, Queen Anne, Ballard, Columbia City, Bellevue, etc.</td>
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</tbody>
</table>
Secret Shopper Surveys

Methodology
SECRET SHOPPERS TAKING COVERT TRIPS TO IDENTIFY SERVICE LEVELS AND STANDARDS

Responses
55 Trips made

Sample selection:
CROSS SECTION OF TRIPS BY MODES, LOCATIONS AND TIMES OF DAY TO COVER ALL AREAS OF CITY AND COUNTY TRIPS.
Stakeholders Interviews

Approach:
In person structured interviews and focus group meetings

Sample:
Cross section of trade, primary engagement locations, such as SeaTac airport, and interest groups including elderly, health care and commerce associations

Responses
13 separate meetings with individual stakeholders and small groups of interested parties

<table>
<thead>
<tr>
<th>Respondent type</th>
<th>Examples of institutions surveys</th>
</tr>
</thead>
<tbody>
<tr>
<td>Taxi Industry</td>
<td>Companies: Yellowcab, Farwest, Orange, STITA Operators, Drivers focus groups, For-Hire Industry representatives</td>
</tr>
<tr>
<td>Specialist Interests</td>
<td>Metro Access, Ageing / Disability</td>
</tr>
<tr>
<td>Commerce and Visitor</td>
<td>Seattle First, SEATAC, Seattle Hotel Association</td>
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</tbody>
</table>
Analysis: Market Demand
Estimating the Demand for Taxi and Taxi-like services

Taxi trips and trips by taxi-like vehicles calculated using:

- Reported vehicle operational data from odometer miles / taximeter fare, using data collected by City as part of current regulatory requirements
- Dispatch Records from larger taxi companies
  Responses not available from all companies
- Reported mode choice from public surveys

Operational data requested but not provided by FHV or Limo operating companies
Market Overview
City of Seattle residents: reported use of available services

- FHV use may be understated due to confusion between FHVs and taxis
- Rideshare may be overstated as individuals are actively exploring/testing newly available services and projections are based on most recent trip taken
Market Overview
King County residents: reported use of available services

- FHV use may be understated due to confusion between FHVs and Taxis, particularly in the County where FHV’s can be hailed for rides.
- Rideshare results may reflect individuals actively exploring/testing newly available service.
Market Overview

Visitors: reported use of available services

- Taxi use highest amongst visitors
- Rideshare and Limousine use may reflect familiarity with national apps
- FHVs are not common across many cities, which may contribute to lower use
Mode Split by time of day based on Public Survey data
Results for the City of Seattle

Source: Public Survey responses
Average taxi vehicle utilisation, trips per hour per vehicle
Results for the City of Seattle

- Taxis appear relatively under-utilized on an average basis across week
- Mean utilization - 1.03 trips/hr (public survey) compares to 1.07/hr (dispatch data)
- However, analysis of peak demand reveals more subtle market dynamics

Source: Public Survey. Fleet data: Department of Finance and Administrative Services, City of Seattle
Demand for Taxi and Taxi-like services
Demand patterns by time of day and day of week

- Significant peak demand during evenings, particularly on weekends.

Source: Public Survey responses
Taxi, Limo and FHV utilisation: trips per hour per vehicle
Results for the City of Seattle

- Rideshare ‘fleet’ not defined or regulated to the same extent as other services
- At weekend peak, taxis are reaching maximum utilization. Limousines and other services help meet increased demand

Source: Department of Finance and Administrative Services, City of Seattle; Washington State; Public Survey
Demand for Taxi and Taxi-like services
Mode Split demographics - Age (City of Seattle)

Source: Public Survey
Demand for Taxi and Taxi-like services
Mode Split demographics - Income (City of Seattle)

Source: Public Survey
Market Demand - Key Observations about the City of Seattle

• Taxis serve largest share of the market but other types of services are growing rapidly.

• Friday and Saturday nights show the highest levels of demand.

• Demand for taxis is consistent (and relatively low) throughout data. However, at peak times, during weekend evenings, taxis are fully utilized.

• Limos provide a higher relative share of weekend evening services, helping to serve Peak demand.

• Rideshare experience peaks in evening demand but low levels of daytime use through week.

• FHV data does not show significant increase in utilization during evening peaks. This may be a result of pre-arrangement requirement not serving customer needs during this time period, or customer confusion between FHVs and Taxis.
Market Demand - Key Observations about the City of Seattle (Cont.)

Demographics – Age

• Taxis are used evenly across all age groups.

• Limos and rideshares are more heavily used by younger populations.

• FHVs popular among young and old, potentially due to price sensitivity.

Demographics – Income

• Taxi use spread more evenly across income groups than other modes.

• Limos, FHVs and rideshares somewhat more popular among higher income groups.
Mode split by time of day based on public survey data
Results for King County

Source: Public Survey responses
County shows relatively more constant demand over the course of the day, but similar weekend peaks as the City of Seattle. Relative size of weekend peaks is actually larger than the City of Seattle.
Demographics of Market Demand – age
Results for King County

Source: Public Survey
Demand for Taxi and Taxi-like services
Mode Split demographics - Income (King County)

Source: Public Survey
Market Demand – Key Observations from King County

Overall demand and demand by Time of Day and Week

• Mode split in King County follows a similar pattern to that seen in the city of Seattle, with more distinct user segments and peaking, including:
  - Weekend peaks are more pronounced when compared to city
  - Distinct early morning peak for Limos

• FHV use reported in survey is relatively low given number of vehicles, but may be explained by ability to hail in county, and confusion between Taxi and FHV modes

• Small peak in rideshare use midday, not seen in comparable use in city. Rideshare also peaks at night, in common with city use.
Market Demand – Key Observations from King County (Cont.)

Demographics - Age

- Taxis used evenly across most age groups,
- Limos and rideshare more heavily used by a younger population,
- Rideshare use drops rapidly with age, more than with Limos

Demographics - Income

- Distinct income differences between Taxis and Limos, and more polarized than in the city.
- Taxis used by lower income groups
- FHV use displays a single peak and otherwise consistent use.
- Rideshare also peaks in one income bracket with more affluent use and limited low income use.
What do you consider a reasonable waiting time for a vehicle when traveling at night?

- Higher expectations of Limousine and rideshare service times than of taxis or FHVs
- Rideshare expectations may be allied to booking technology
Service Quality – Response Time Experiences
Results for Seattle and King County

- Limousines, FHVs and Rideshare felt to out-perform taxis for promptness of arrival
Analysis: Response Times

Key Observations

• Public expectations of Limos higher than of taxis. Similar expectations of Rideshare may indicate an expectation allied to the booking technology (app).

• Taxis perform badly in response time experiences, with Limos felt to perform the best.

• A number of very bad response time experiences are reported for taxis, with no similar findings for other modes

• Rideshares appear to share many characteristics associated with Limos such as high expectations of response times.

• Correlation to vehicle utilization figures may suggest that taxi experiences, particularly late at night, may relate to taxis operating at capacity, while other modes show spare capacity.
### Market Performance
Results from Institutional Survey

<table>
<thead>
<tr>
<th>Service Aspect</th>
<th>Limousines</th>
<th>For Hire</th>
<th>Taxis</th>
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<tbody>
<tr>
<td>Appearance &amp; cleanliness of vehicles</td>
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<tr>
<td>Willingness to accept credit cards</td>
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<tr>
<td>Willingness to pick up passengers at your facility</td>
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<tr>
<td>Safety &amp; mechanical condition of vehicles</td>
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<td>Promptness of arrival</td>
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<tr>
<td>Courtesy of drivers</td>
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<td>Ease of booking a ride</td>
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<td>Driver's knowledge of area</td>
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<td>Handling of complaints</td>
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<tr>
<td>Affordability</td>
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Source: Institutional Survey
Service Quality – Key Observations
Perspective from the Institutional users

• Taxis generated a majority of neutral and negative responses related to service quality.

• Of 105 negative comments, 102 were related to taxis. Of 16 positive comments, only 1 was related to taxis.

• A small but apparently significant proportion of taxi drivers deliver poor and discourteous service characterized by frequent users as “rude” service.

• Delays in response times were reported in late afternoons by medical facilities. Hotels emphasized slower response times coinciding with large events.

• Limousines have a majority of positive comments and score consistently highly in quality measures.

• FHV$s have few complaints and score well across quality measures.
Secret Shopper Surveys
Further evidence regarding service quality

Which type of service were you testing?

- Taxi: 58%
- For Hire Vehicle: 22%
- Limousine: 11%
- Ridesharing: 9%

Source: Secret Shopper Survey
Secret Shopper Surveys

What type of trip were you testing?

- Going out at night (Late night): 31%
- Home to/from Medical Appointment: 18%
- Shopping to Home: 16%
- Home to Airport: 15%
- Hotel to/from Cruise Ship: 7%
- Commute (Evening): 5%
- Sightseeing: 4%
- Going out at night (Ticketed event): 4%
- Other: 0%
- Commute (Morning): 0%

Source: Secret Shopper Survey
Secret Shopper Surveys

How would you rate the service you received?

- Willingness to accept credit cards
- Courtesy of driver
- Route knowledge of driver
- Appearance of vehicle
- Promptness of arrival
- Ease of booking/hailing a ride

Source: Secret Shopper Survey
Key Findings Regarding Quality of Service

- Taxi drivers should provide quality courteous service at all times. Drivers should be provided appropriate training in these areas to satisfy the minimum levels felt lacking in responses in the public surveys and views expressed by hotels, restaurants, and medical facilities.

- Evidence from Institutional Surveys suggests that short trips are seen to be a problem for some taxi drivers and may increase hostility / lack of basic customer service.

- Institutional and Secret Shopper surveys suggest that taxi booking telephone lines appear to present a number of issues including poor levels of customer service, discourteous agents.

- Limousines are noted, in particular, as providing high levels of customer assistance, clean vehicles, ease of payment and electronic tracking.

- For Hire vehicles appear to offer a similar level of service compared to taxis, but lack confirmed metered fares that might create confusion for passengers.
Conclusions

• A large part of the local market is now been served by limousines, FHVs and “rideshare” services. The market for these services is growing rapidly and vehicles in service are growing to meet it. Several hundred new limousines have been licensed in the past two years.

• Users who are aware of the array of services available do not face a shortage of supply.

• Demand for new services is driven by availability at peak times, but service quality is also an important factor. Customers express a preference for service quality provided by services other than taxis.

• Concerns about quality of taxi service are reflected in public surveys and reinforced by findings from institutional surveys and Secret Shopper trips.

• Nonetheless, tourists and certain demographic groups, including less affluent and older populations, still rely on taxi services.

• From a regulatory perspective, response times are not a sufficient metric for judging the need for additional vehicles as customers appear to seek out additional services when response times become unsatisfactory.