GIS AND TRANSIT MARKET

GIS in Transit: The Route to Success in Transit GIS Conference
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Vinh Huu Nguyen, Ph.D.
Metropolitan Atlanta Rapid Transit Authority - MARTA

Thanks Project Team:
Carol Smith MARTA - Stacy Woods MARTA - Richard Fox, Ph.D. University of Georgia – Tracy Durham CLARITAS
MARTA FACTS

- Ninth largest transit system in the U.S. serving 550,000 passenger boardings per day
- Operating 609 buses with 131 bus routes
- Operating 338 rail cars in 38 stations
- Operating a fleet of 125 lift-vans for Mobility Service
- Offering 28,000 park and ride spaces
RESEARCH QUESTIONS

• Who are the targets?
• What are they like and how to reach them?
• Where to find them?
• Is there any underserved area?

POTENTIAL APPLICATIONS

• Develop improvements which fit lifestyles of users
• Target direct mail campaigns and advertising
• Find out why people in some areas don’t use MARTA
• Use profiles of current users to expand service and generate local support both within and outside the service area
METHODOLOGY

CLARITAS PRIZM SEGMENTATION

BUILD THE PROFILE OF MARTA CUSTOMERS

IDENTIFY TRANSIT MARKET POTENTIAL
IDENTIFY POSSIBLE UNDERSERVED AREAS

MARTA CUSTOMER SURVEY
CLARITAS PRIZM SEGMENTATION

The Early ‘70s:
• CLARITAS divided 254,000 U.S. census block groups into 40 types of neighborhoods by demographic and housing characteristics.

The Late ‘70s:
• CLARITAS launched PRIZM that refined the 40 rankings above.
• Cross-referencing with magazine subscriptions, car buyers lists, TV viewing diaries, voting records, and sale records for products and services.

The Early ‘90s:
• CLARITAS rebuilt PRIZM with new clustering techniques that shifted from ZIPs and block groups to the individual household level.
• Grouping households into 66 segments based on core demographic dimensions, consumer behavior, shopping patterns, and media preferences.
CLARITAS PRIZM SEGMENTATION

66 PRIZM SEGMENTS

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Upper Crust</td>
</tr>
<tr>
<td>2</td>
<td>Blue Blood Estates</td>
</tr>
<tr>
<td>3</td>
<td>Movers &amp; Shakers</td>
</tr>
<tr>
<td>...</td>
<td>..................</td>
</tr>
<tr>
<td>64</td>
<td>Bedrock America</td>
</tr>
<tr>
<td>65</td>
<td>Big City Blues</td>
</tr>
<tr>
<td>66</td>
<td>Low-Rise Living</td>
</tr>
</tbody>
</table>

DEMOGRAPHICS ATTRIBUTES
Income * Age * Family Composition * Homeownership * Employment * Education * Ethnicity

LIFESTYLE ATTRIBUTES
Shopping * Radio & TV * Magazines & Newspapers * Leisure Activities * Computers & Online

* There are 5 different ZIP+6 PRIZM assignments for the 6 households using PRIZM ZIP+6
* More differentiation from ZIP+6 segment assignment: Segment 1 Upper Crust, 2 Blue Blood Estates, 3 Movers & Shakers, 6 Winner’s Circle, and 17 Beltway Boomers

(The picture above retrieved from the Geographic Segment Guideline provided by CLARITAS)
MARTA CUSTOMER SURVEY

SURVEY METHODOLOGY

• Face-to-face interviews
• Both bus and rail
• Trips and customers randomly selected
• All time periods: weekday, Saturday, Sunday, AM, Midday, PM and Evening
• From June 01 to August 12, 2009

SURVEY RESULTS

• 3948 complete interviews
• 2708 valid addresses: 2376 within & 332 outside MARTA Service Area
<table>
<thead>
<tr>
<th>Code</th>
<th>Name</th>
<th>BASE HOUSEHOLDS</th>
<th>BASE RESPONDERS</th>
<th>PROFILE INDEX</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Count</td>
<td>% Comp</td>
<td>Count</td>
</tr>
<tr>
<td>1</td>
<td>Upper Crust</td>
<td>24696</td>
<td>3.68</td>
<td>11</td>
</tr>
<tr>
<td>2</td>
<td>Blue Blood Estates</td>
<td>14126</td>
<td>2.10</td>
<td>7</td>
</tr>
<tr>
<td>3</td>
<td>Movers &amp; Shakers</td>
<td>37577</td>
<td>5.59</td>
<td>77</td>
</tr>
<tr>
<td>4</td>
<td>Young Digerati</td>
<td>9602</td>
<td>1.43</td>
<td>28</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-----------------</td>
<td>-----------------</td>
<td>---------------</td>
</tr>
<tr>
<td>47</td>
<td>City Startups</td>
<td>7846</td>
<td>1.17</td>
<td>19</td>
</tr>
<tr>
<td>48</td>
<td>Young &amp; Rustic</td>
<td>2023</td>
<td>0.30</td>
<td>11</td>
</tr>
<tr>
<td>49</td>
<td>American Classics</td>
<td>9391</td>
<td>1.40</td>
<td>41</td>
</tr>
<tr>
<td>50</td>
<td>Kid Country, USA</td>
<td>3266</td>
<td>0.49</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-----------------</td>
<td>-----------------</td>
<td>---------------</td>
</tr>
<tr>
<td>63</td>
<td>Family Thrifts</td>
<td>10684</td>
<td>1.59</td>
<td>15</td>
</tr>
<tr>
<td>64</td>
<td>Bedrock America</td>
<td>1202</td>
<td>0.18</td>
<td>6</td>
</tr>
<tr>
<td>65</td>
<td>Big City Blues</td>
<td>3021</td>
<td>0.45</td>
<td>44</td>
</tr>
<tr>
<td>66</td>
<td>Low-Rise Living</td>
<td>12935</td>
<td>1.93</td>
<td>88</td>
</tr>
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<td></td>
<td></td>
<td>-----------------</td>
<td>-----------------</td>
<td>---------------</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>671888</td>
<td>100.00</td>
<td>2376</td>
</tr>
</tbody>
</table>
DISTRIBUTION OF SEGMENTS WITH HIGH INDEX IN USE OF MARTA

Legend
- MARTA Service Area
- High Index Blocks from MARTA Profiles
  - 1 - 250 Households
  - 251 - 500 Households
  - 501 - 1000 Households
  - 1001 - 3750 Households

Legend
- MARTA Service Area
- MARTA Bus Routes
- High Index Blocks from MARTA Profiles
  - 1 - 250 Households
  - 251 - 500 Households
  - 501 - 1000 Households
  - 1001 - 3750 Households
POSSIBLE UNDERSERVED AREAS - A COMPARISON BETWEEN NATIONAL AND MARTA PROFILES

High Indexing Segments from NATIONAL Profiles (Not Available from MARTA High Indexing List)

Legend
- MARTA Service Area
- Service Area Block
  - 1 - 250 Households
  - 251 - 500 Households
  - 501 - 1000 Households
  - 1001 - 2600 Households

Relative Distribution of MARTA Riders within the Service Area - FY08 Quality of Service Survey

Legend
- MARTA Service Area
- FY08 % Riders by ZIP
  - 0.1% - 0.5%
  - 0.6% - 2.0%
  - 2.1% - 3.0%
  - 3.1% - 4.0%
  - 4.1% - 7.5%
POSSIBLE UNDERSERVED AREAS - A COMPARISON BETWEEN NATIONAL AND MARTA PROFILES
## TRANSIT MARKET POTENTIAL DISTRIBUTION

<table>
<thead>
<tr>
<th>Clusters Present in the Market</th>
<th>% HH per Cluster</th>
<th>Regional Profile Index</th>
<th>Cluster’s Contribution to MPI (*)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upper Crust</td>
<td>0.4%</td>
<td>13</td>
<td>0.05</td>
</tr>
<tr>
<td>Blue Blood Estates</td>
<td>2.1%</td>
<td>14</td>
<td>0.29</td>
</tr>
<tr>
<td>Movers &amp; Shakers</td>
<td>7.3%</td>
<td>58</td>
<td>4.23</td>
</tr>
<tr>
<td>......And so forth for each cluster present</td>
<td>..................</td>
<td>..........................</td>
<td>..........................</td>
</tr>
<tr>
<td>Total</td>
<td>100.0%</td>
<td>120.00</td>
<td></td>
</tr>
</tbody>
</table>

“*” Method used by CLARITAS to compute Market Potential Index MPI

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### Conversion Expansion Core Target

- **CORE**: Clusters with high MPI Index and high percentage of base households
- **EXPANSION**: High MPI Index but small percentage of base households
- **CONVERSION**: High proportion of base households but low MPI index. However, these clusters do have potential because they represent a large portion of the base population
- **LOW TARGET**: Small proportion of base households and they are less likely to become transit customers
TRANSIT MARKET POTENTIAL MAP
BASED ON MARTA ACTUAL PROFILES

<table>
<thead>
<tr>
<th></th>
<th>HH</th>
<th>%HH</th>
<th>Blocks</th>
<th>Area</th>
<th>MPI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Core</td>
<td>128,942</td>
<td>19%</td>
<td>13%</td>
<td>13%</td>
<td>173</td>
</tr>
<tr>
<td>Expansion</td>
<td>121,737</td>
<td>18%</td>
<td>33%</td>
<td>13%</td>
<td>174</td>
</tr>
<tr>
<td>Conversion</td>
<td>306,403</td>
<td>46%</td>
<td>25%</td>
<td>55%</td>
<td>58</td>
</tr>
<tr>
<td>Low Target</td>
<td>114,806</td>
<td>17%</td>
<td>29%</td>
<td>19%</td>
<td>53</td>
</tr>
</tbody>
</table>
HIGH TRANSIT USE INDEXING BLOCKS OUTSIDE MARTA SERVICE AREA
CONCLUSIONS

• CLARITAS PRIZM model provides a promising way to better understand the market and customers.

• This clustering model does not replace the effectiveness of other traditional segmentation methods, but instead complements them.

• Beware of too much emphasis on exact value of indexes, rather than as a relative ranking measure.