



Figure 4: Variable Cost per Mile of On-Demand Autonomous Vehicles

variable cost (per mile)	
mapping and data services	0.01
fuel cost	0.11
maintenance	0.12
depreciation (straight line, no residual)	0.24
tires	0.01
operating cost per mile	0.48
fixed cost (per year)	
insurance	3,000
license, registration, taxes	718
taxi comission inspection	105
annual cost of operation	37,380
annual cost of operation per mile	0.53

Source: AAA, Census, NAIC, Wards, DB estimates

Importantly, this \$0.53 reflects operating costs for the network operator (e.g. GM's Maven). To determine pricing for this service, we assumed that the service provider would require a 20% return on invested capital (i.e. NOPAT should be \$10,000 on a \$50,000 vehicle investment), which corresponds to \$0.18 per mile for a vehicle generating 56,000 revenue miles per year. We then backed up through the income statement based on a 35% tax rate, \$0.11 per mile for SG&A and R&D (12% of revenue on a run-rate), \$0.53 per mile for cost of goods sold, to derive a \$0.91 per mile retail rate for the customer—very close to the ~\$0.93 average cost of driving a privately owned vehicle in the top 20 U.S. MSAs, and significantly lower than the average for the dense urban centers within these MSAs (average cost in NYC is \$3.35).

Figure 5: Based on our estimates of costs involved, we estimated that a mobility service provider should be able to generate a 20% ROIC by charging \$0.91/mile

per mile	nationwide	% of Revenue
revenue	0.91	
COGS	0.53	59%
gross margin	0.38	41%
SG&A/R&D @12% of revenue	0.11	12%
EBIT	0.27	30%
taxes, @35%	0.09	35%
NOPAT	0.18	20%

implied cost per mile to consumer	0.91
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Source: AAA, Census, NAIC, Wards, DB estimates

Based on our analysis, assuming a normal distribution for miles driven, and additional feedback from Industry participants (who have been conducting consumer research), we've estimated that approximately 60% of households in