Have You Noticed???
Google/Waymo’s Buying Spree

by

Alain L. Kornhauser, PhD

Professor, ORFE
(Operations Research & Financial Engineering)
Director, CARTS
(Consortium for Automated Road Transportation Safety)
Faculty Chair, PAVE
(Princeton Autonomous Vehicle Engineering)

Princeton University

Presented at

ITS America 2018
June 5, 2018
Detroit, MI
Dynamics of Google/Waymo’s Deployment of Driverless

Google/Waymo Purchase of Driverless Cars

Cars “Purchased”

2009

Year


10M 1M 100K 10K 1K 100 10 1
Dynamics of Google/Waymo’s Deployment of Driverless

Google/Waymo Purchase of Driverless Cars

Cars “Purchased”

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>100</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1M</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10M</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2009

2012
Dynamics of Google/Waymo’s Deployment of Driverless Cars

Google/Waymo Purchase of Driverless Cars

<table>
<thead>
<tr>
<th>Year</th>
<th>Cars &quot;Purchased&quot;</th>
</tr>
</thead>
</table>


Graph showing the number of driverless cars purchased by Google/Waymo from 2009 to 2025.
Dynamics of Google/Waymo’s Deployment of Driverless

Google/Waymo Purchase of Driverless Cars

Cars “Purchased”

Year


2009 2012 2015 2017
Dynamics of Google/Waymo’s Deployment of Driverless Cars

Google/Waymo Purchase of Driverless Cars

Year

Cars "Purchased"

2009 2012 2015 2017 2018.2
Dynamics of Google/Waymo’s Deployment of Driverless

Google/Waymo Purchase of Driverless Cars

Cars “Purchased”


Year

10M 1M 100K 10K 1K 100 10

> 10X every 2 years (Waymo’s Kornhauser Law)

What will Waymo do with 20,000 Jaguars?

Waymo

Jaguars

+ 60,000 Chrysler Minivans

HHMMM! ... Waymo Hungry!

You can't eat them!
WHAT WILL WAYMO DO WITH 20,000 JAGUARS?

Welcome to my studio apartment!

+ 60,000
Chrysler Minivans

PROVIDE HOUSING FOR THE HOMELESS IN SAN FRANCISCO?
Where will Waymo Deploy 20,000 + 60,000 autonomous Taxis

• Maybe they’ll “Spread the Mobility Experience”
  – Start by operating 1K in 20 different “cities”
    • Geo-fenced “communities of ~ 300,000” (serve 5% of personTrips)
  – Add 2K to 1st 20 (grow to 15% personTrip share) + 1K in 20 more “Communities of 300k...
Where will Waymo Deploy 20,000 autonomous Taxis

• Maybe they’ll “Spread the Mobility Experience”
  – operate 1K in 20 different “cities”
• How about “Central New Jersey”?
  – Microcosm of USA
• Pop: ~300K
• Intra-area Trips/day: ~ 1.0M/day
• 1K aTaxis would serve ~ 5% personTrips
  – Numerous Mobility Disadvantaged
    • whose quality-of-life would be improved substantially!
Discussion!

Thank You

alaink@princeton.edu

www.SmartDrivingCar.com