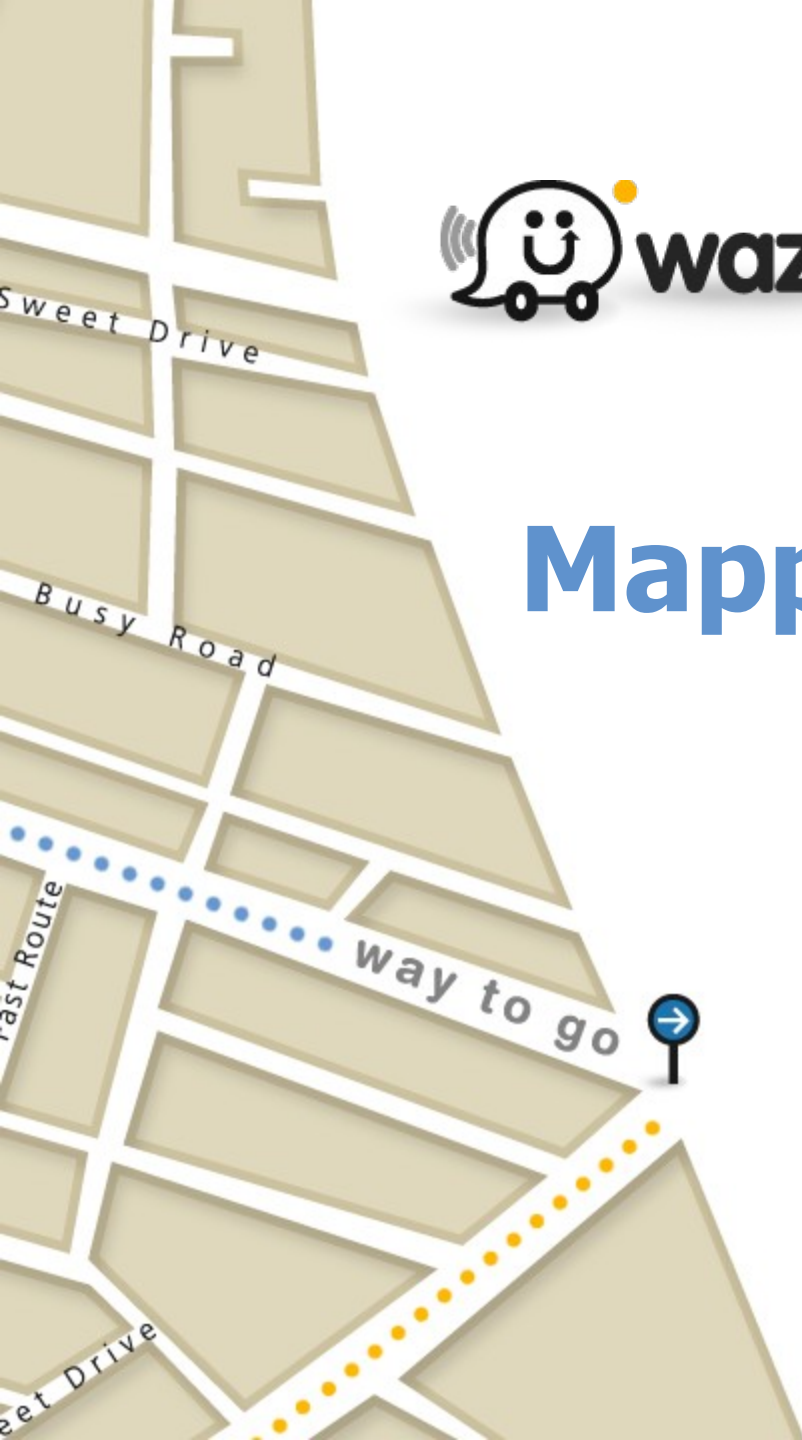




# Mapping Techniques

Fej Shmuelelevitz





## 3 basic facts

- Maps are the basis for all navigable data
- Making maps is **complex**
- Keeping maps **updated** is even more complex and **very expensive**



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# So how's it done ?

- The basic data is collected from various sources
  - Government offices (state DOTs/
  - Municipalities
  - Postal services
  - Aerial photography
  - Etc...
- Some are free, some are not
- But lacking navigable data information



# So how's made navigable ?

- Field Teams that collect and collect:
  - Many vehicles
  - Many miles
  - Many teams
  - Mapping tools and equipment
  - ... and then validating it all



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# And the results ?

- Layers of data composing the map:
  - Geometry
    - Nodes, connectivity, line shapes...
  - Navigation
    - Speed limit, turn restrictions, driving directions...
  - Road attributes
    - Road names, HW numbers, exits, addresses...
  - Administrative
    - Borders, counties, postal codes...
  - Cartographic data
    - Rivers, lakes, railroads...
  - Points of interest



# And the costs ?

- 100's of Millions of Dollars
- Estimated at 40% of revenues
- (Not including traffic data collection costs)

# 📍 Is there an alternative ?



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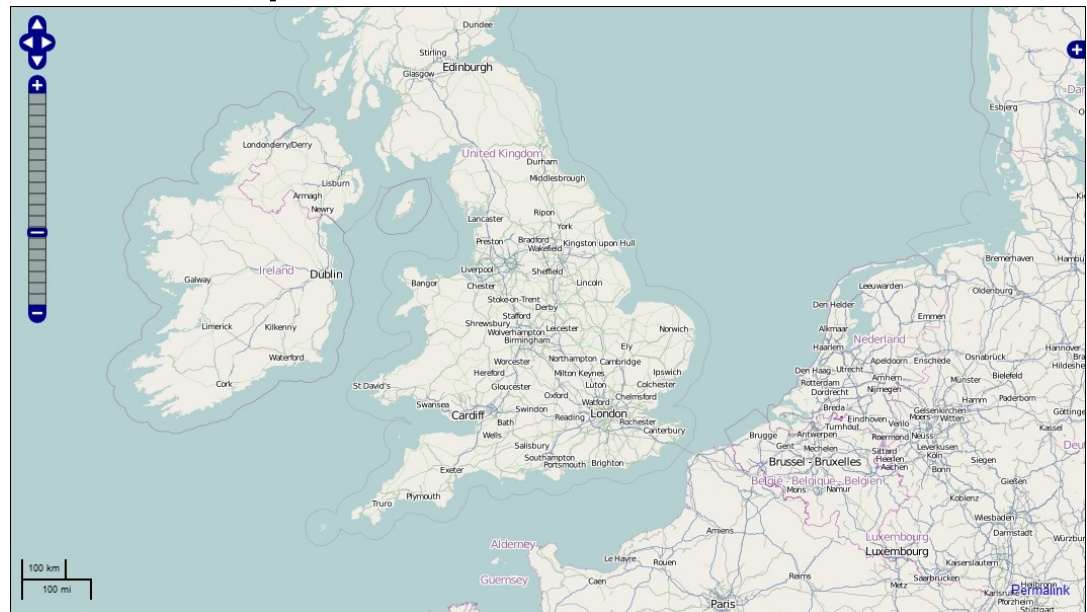




# OpenStreetMap



- Creates and provides free geographic data such as street maps to anyone
  - An collaborative cartographic mapping project
  - Relies on manual editing of maps
  - “Free Wiki World Map”



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# Who are we

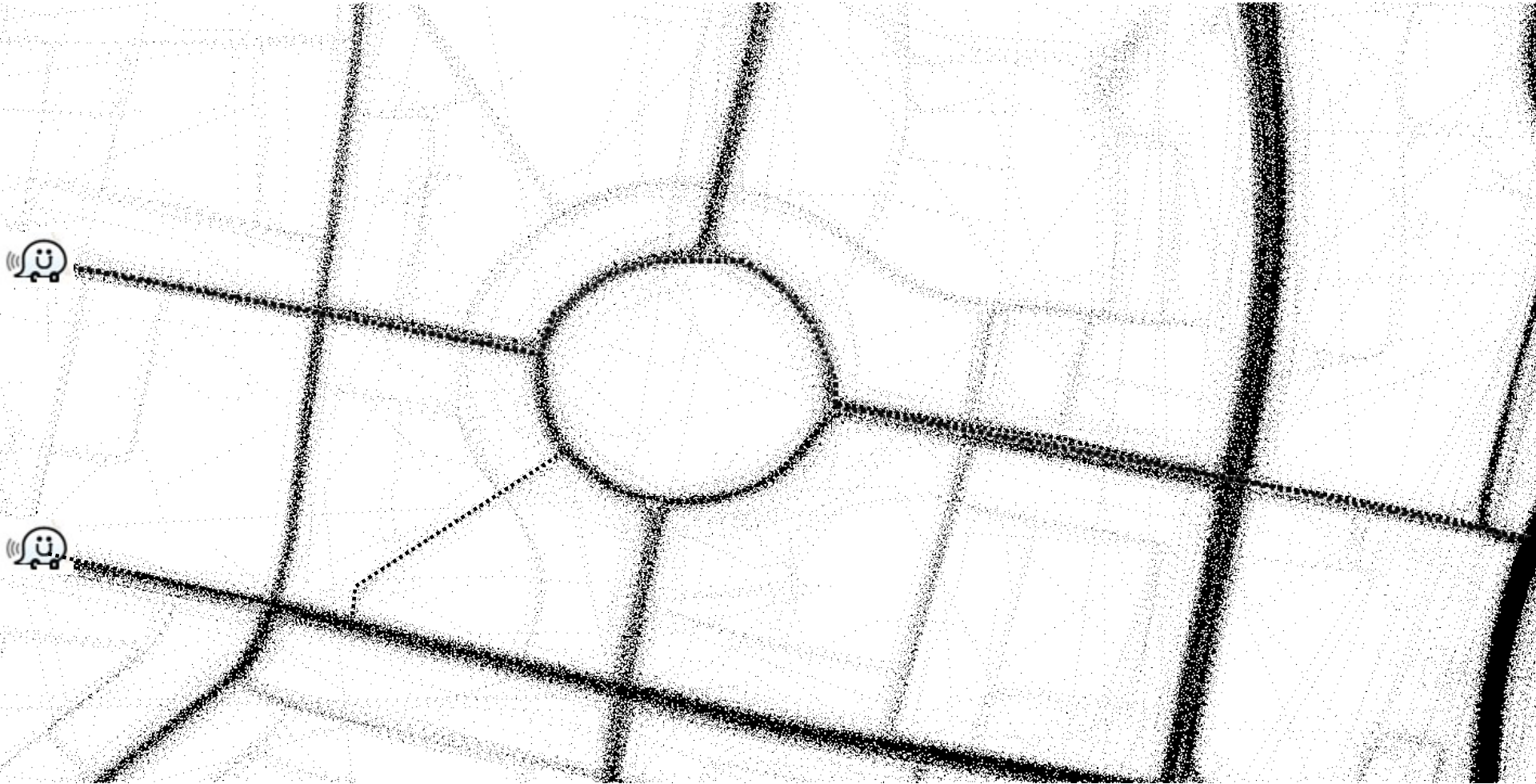
- The problem
  - Maps today are static and do not reflect the events that affect the daily driver
- The waze solution
  - A mass of drivers that automatically and constantly update other drivers, actively and passively in real time about the roads and driving conditions
- How
  - Create a live map
  - Free mobile application

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# The Live Maps



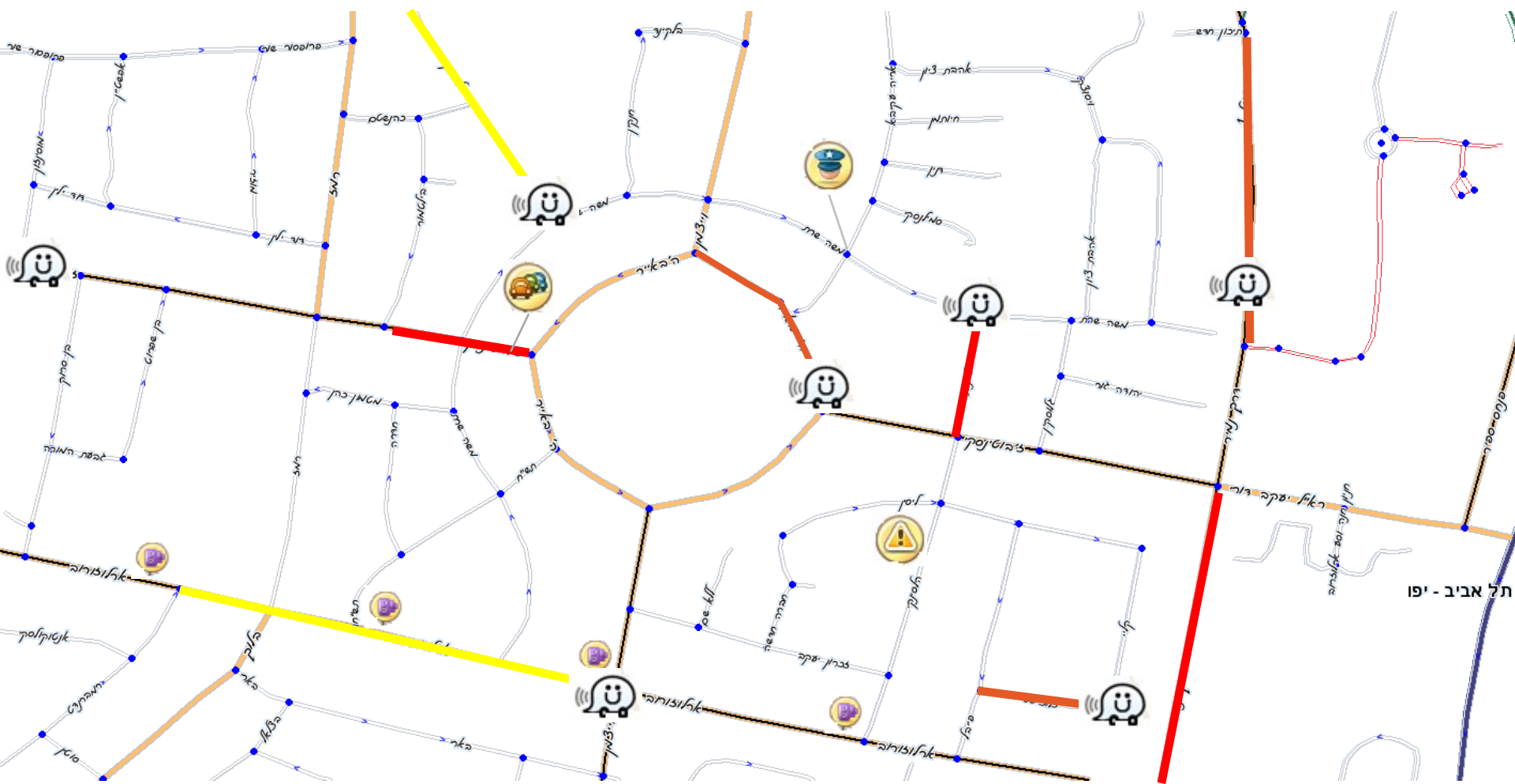


# The Live Maps





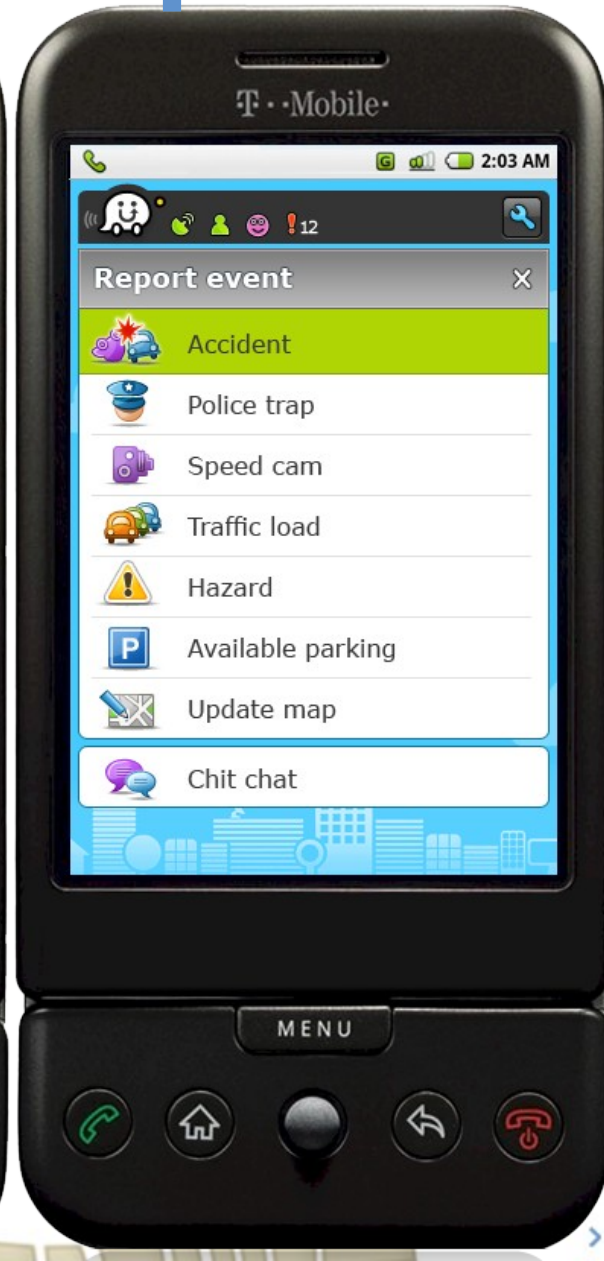
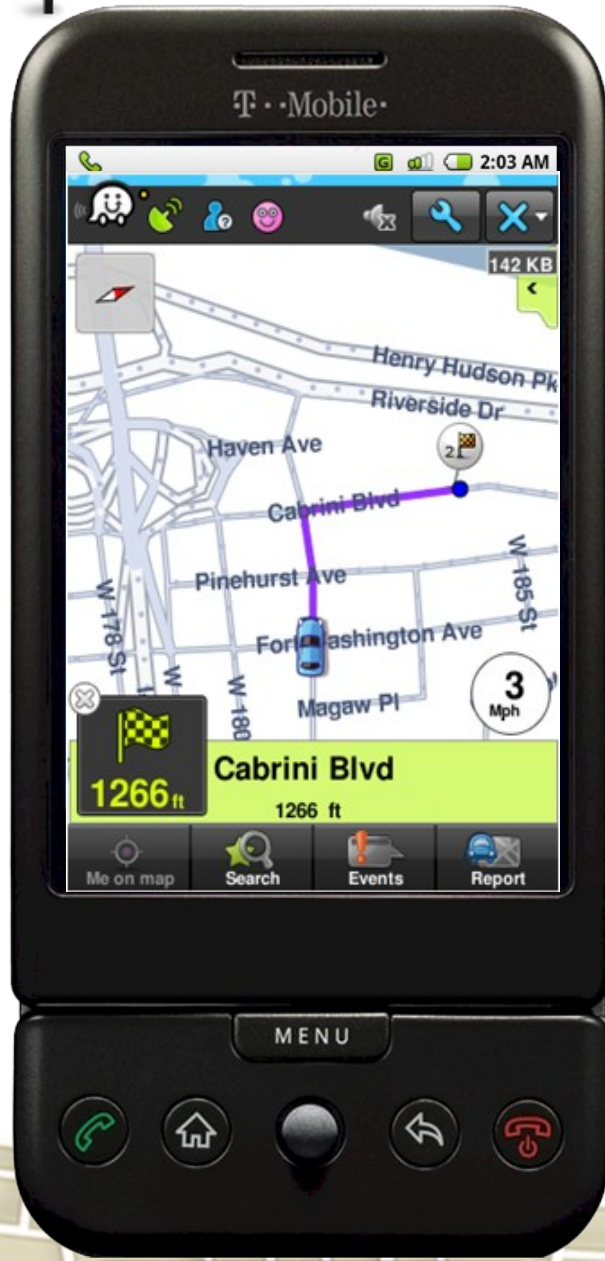
# The Live Maps







# Free Daily Driving Companion





# Success in Israel

- Officially launched in Jan. 2009
  - Initial one-man project began in 2006 and reached 17,000 users
  - Launch introduced the real-time connectivity concept
- Reached over 80,000 users in 4 months
  - ~15% penetration of GPS enabled phones
  - Over 90% road coverage (where it matters)
- The result is the best traffic information reporting in Israel

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**Thank You**

