C2C Communication: No Routing Required

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Throughput & Connectivity

- Per-node throughput in wireless multi-hop networks decreases:
  - At least linearly with the average source-destination distance
  - At least like $\frac{1}{\sqrt{n}}$ with node density

- The probability for connectivity on a single road decreases exponentially with the distance between source and destination
What if we still want to do routing?
It gets worse ...

Cars are not evenly distributed!
... and worse.

100% market penetration is unlikely!
I still want to do routing!

Source

Destination
I still want to do routing!

Flooding in this direction

Source

Destination

Living in a 1D world!
Any more problems?

• Strong competitor: mobile Internet access
Classes of C2C Communication

- Single-hop broadcast and limited flooding
  - safety applications

- DTN/Beaconing + Aggregation
  - Traffic information systems
  - Automated parking guidance system

- Routed messages
  - Short distance, low bandwidth
  - Limited connectivity
  - Competition with mobile Internet access
  - Any applications?