Tokyo JS

Websocket for bidirectional communication in an IoT project

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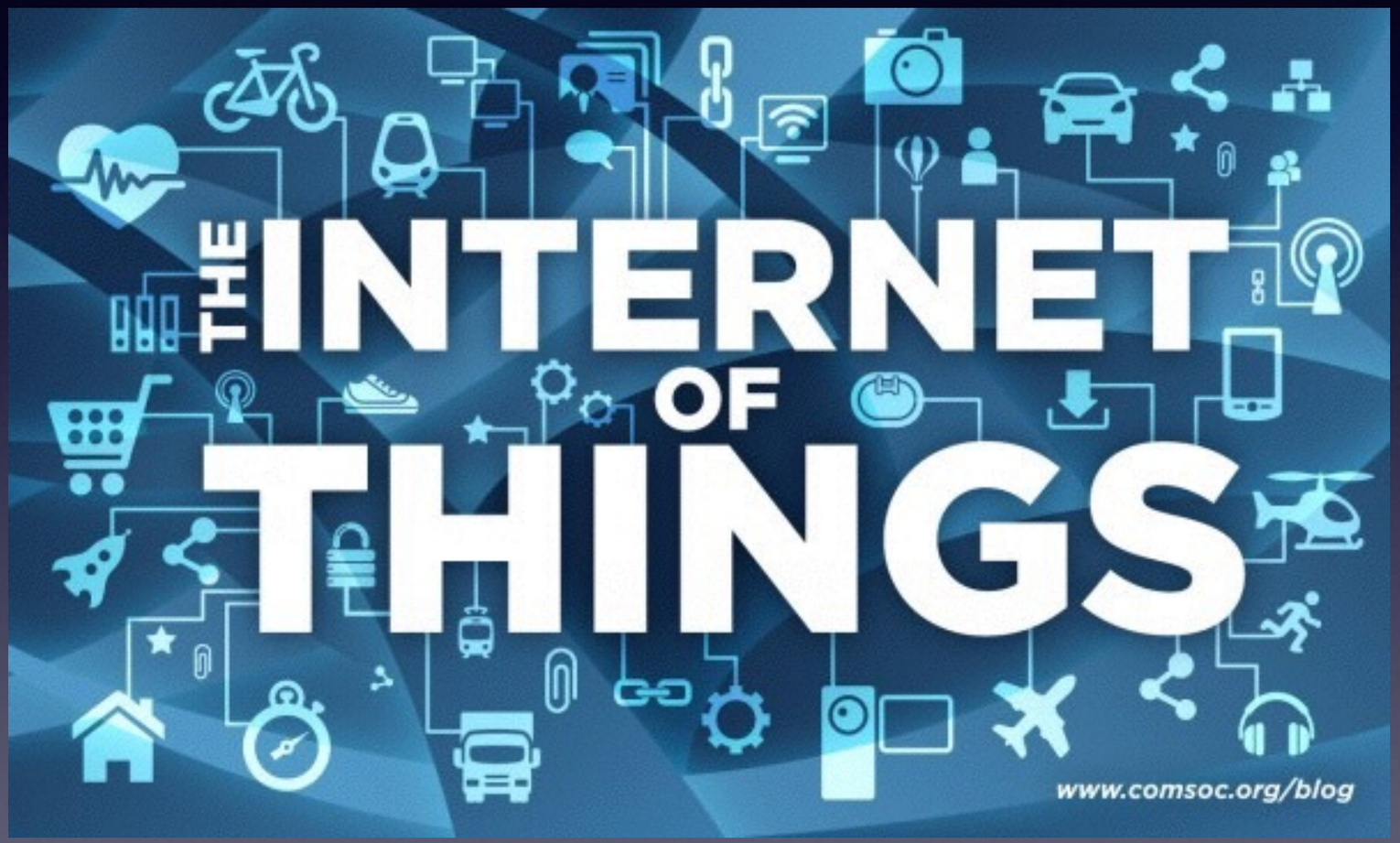
About me

- Name: Yohei Onishi
- Past: embedded software engineer
- Now: IoT “prototyping” engineer
  - develop everything (device, server, browser) for a prototype.
  - write JS code for an app on browser

Today's topic:

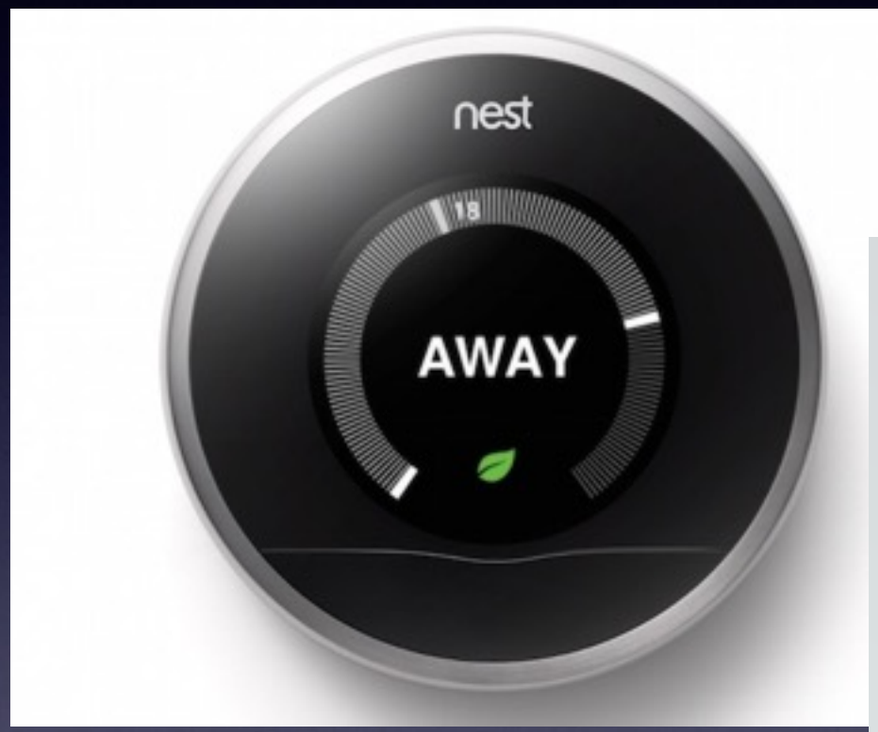
- Rise of IoT
- Websocket as key technology in IoT

IoT?



http://www.comsoc.org/blog

Not like these consumer products for my case



Nest: https://nest.com/

Qrio Smart Lock:
https://www.makuake.com/project/qrio-smart-lock/

my case: remote control and monitoring devices for B2B

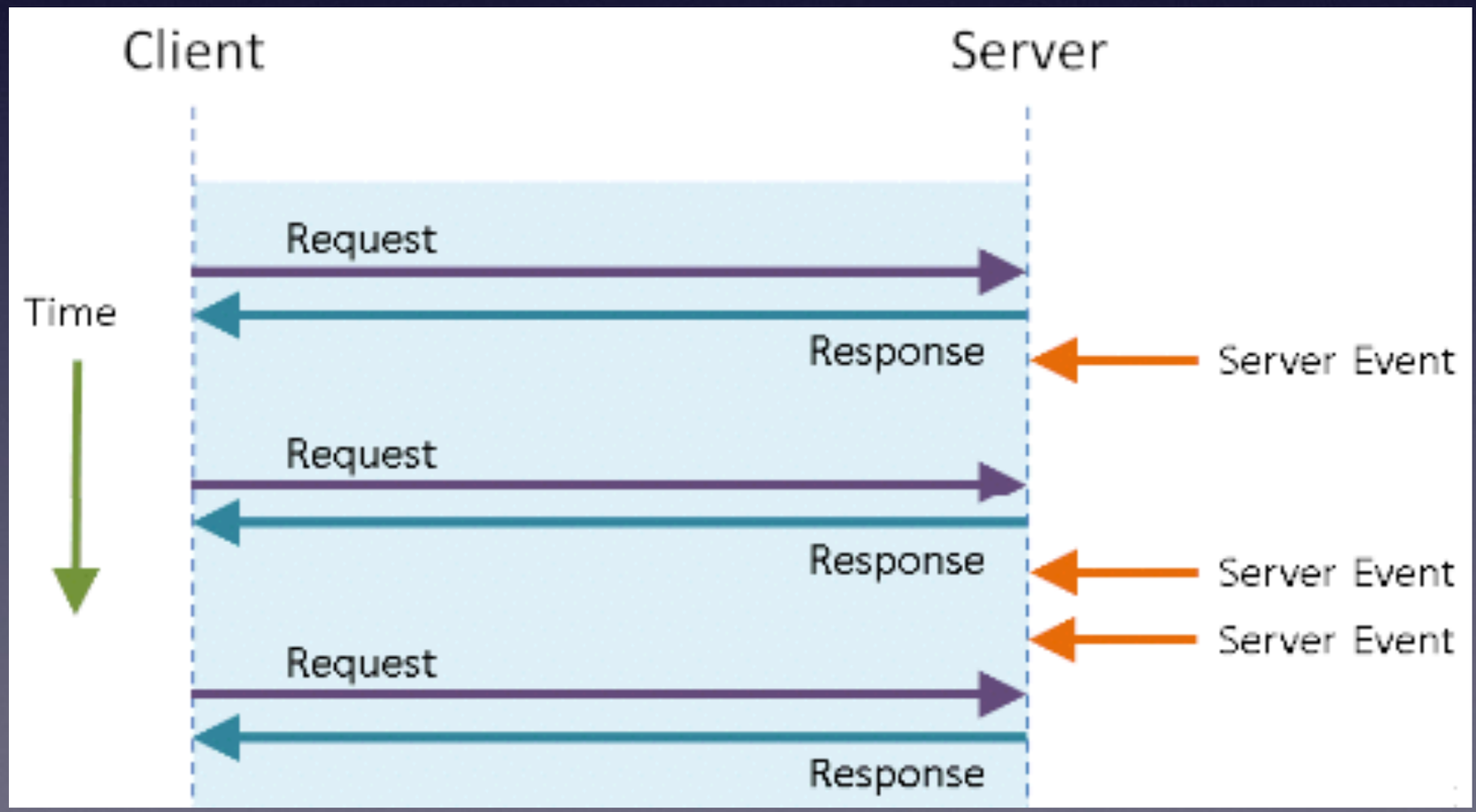
- security camera

Why we connect those devices to the Internet?

- Industrial machine
  - reading a sign of emergency situation
    - avoid any troubles and cost saving
- Security camera
  - detection of entry to a no-entry area

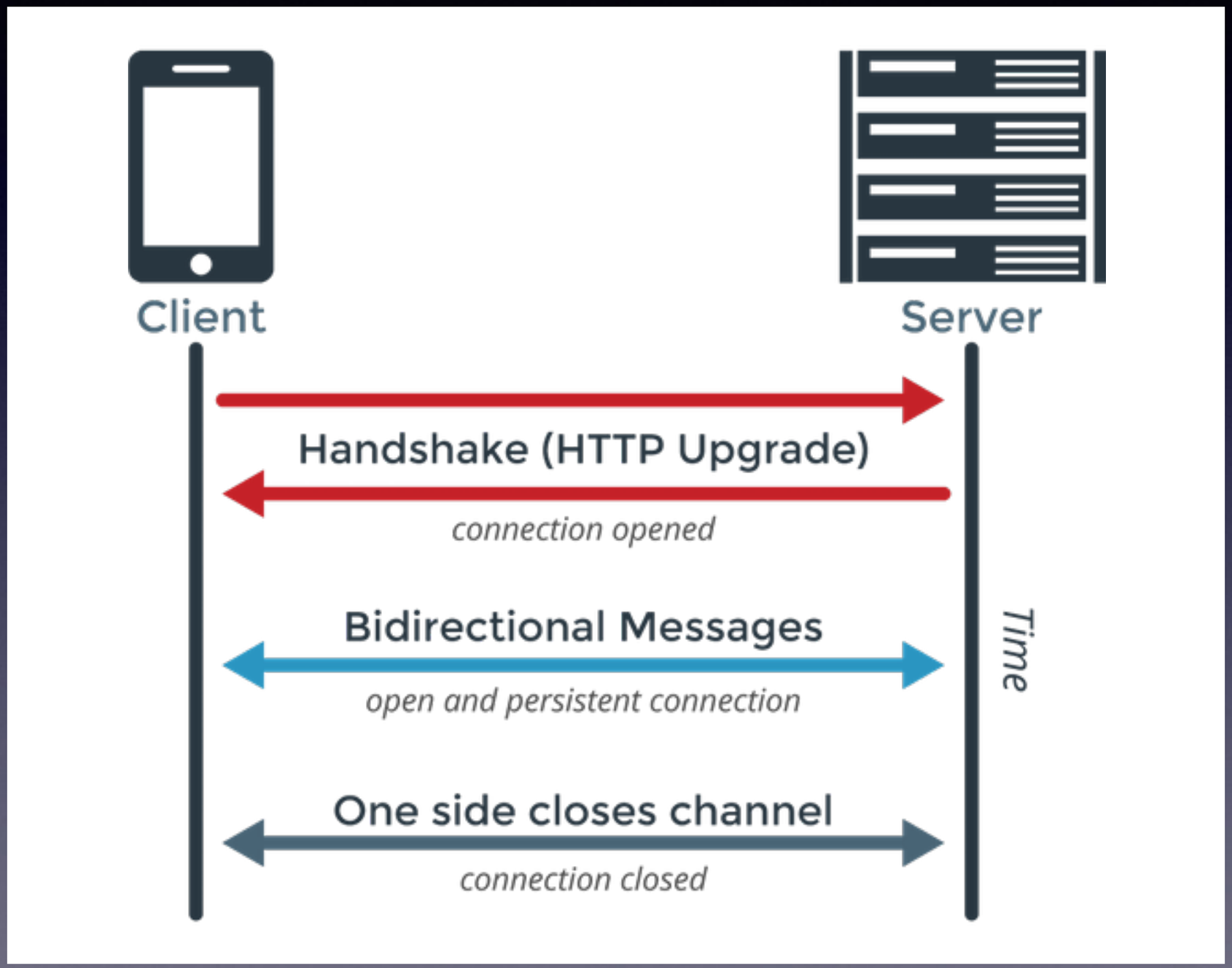
Issue 1: Long HTTP polling

- HTTP does not fit for real time and bidirectional communication



http://h30499.www3.hp.com/t5/HP-LoadRunner-and-Performance/Testing-asynchronous-business-processes-with-LoadRunner/ba-p/6029011#.VS-v_BOUdAU

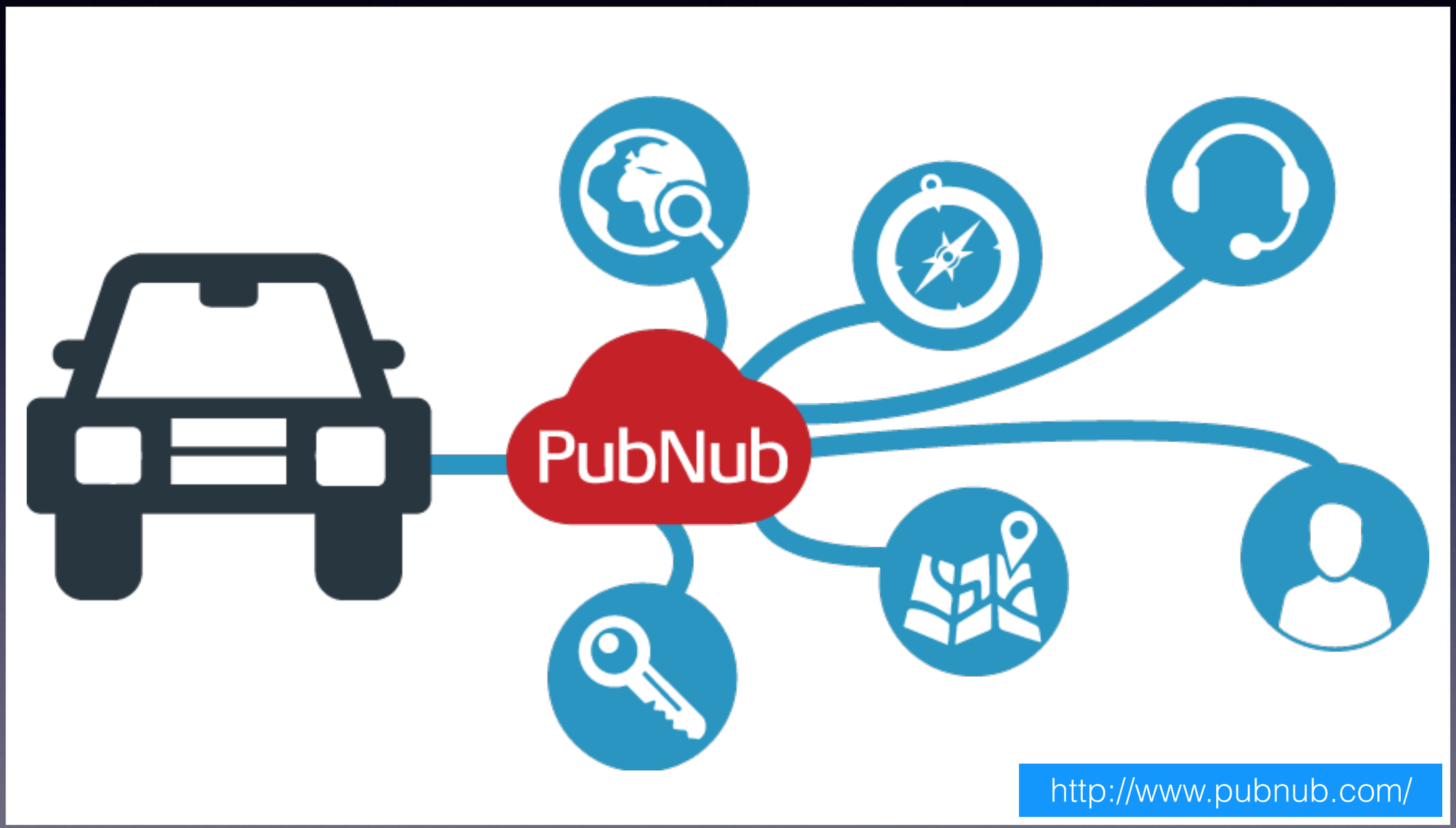
Solution: Websocket



Issue 2: Scale out

- Implementing a web socket server by yourself by Node.js is good for tiny scale prototyping
- But what if a number of client device increase 5000 every year?

Solution: use of PaaS



Use cases

Interactive audience participation
e.g. baseball, socker game

Stream financial data

http://www.pubnub.com/use-cases/

Demo

- chat app for two clients (Java/JavaScript)
- No server, I just use pubnub service

Summary

- Rise of IoT
- Websocket is a key technology in IoT
- Use of PaaS for quick release