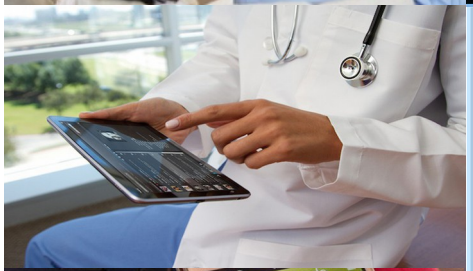
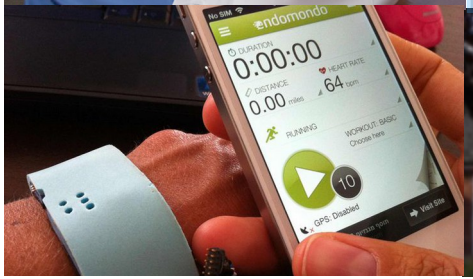
Cars are becoming Software on Wheels

Dominig ar Foll
Intel Open Source

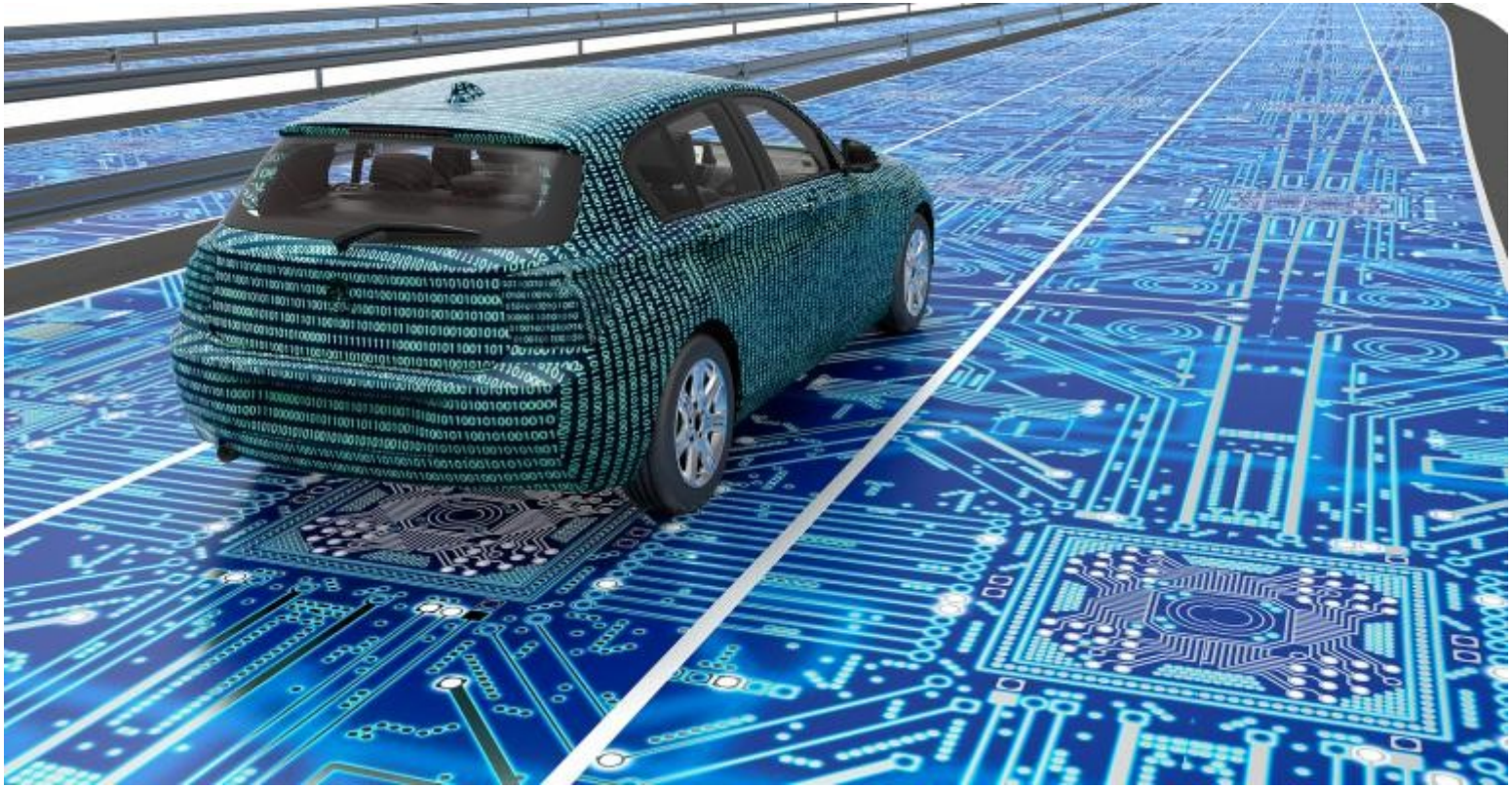
Intel and Open Source



Open Source is everywhere.



Cars are becoming Software on Wheels



Car purchase motivation

Legacy

- Traveling tool at a reasonable cost
- Carry people and goods
- Independence
- Body shape and colour
- Brand

Confort

- Silence, seats, aircon, ...
- Hi-Fi audio, video on-back seats

Driving help

- Auto wipers
- Park assist
- Self driving
- …

Software is becoming critical

Connected car

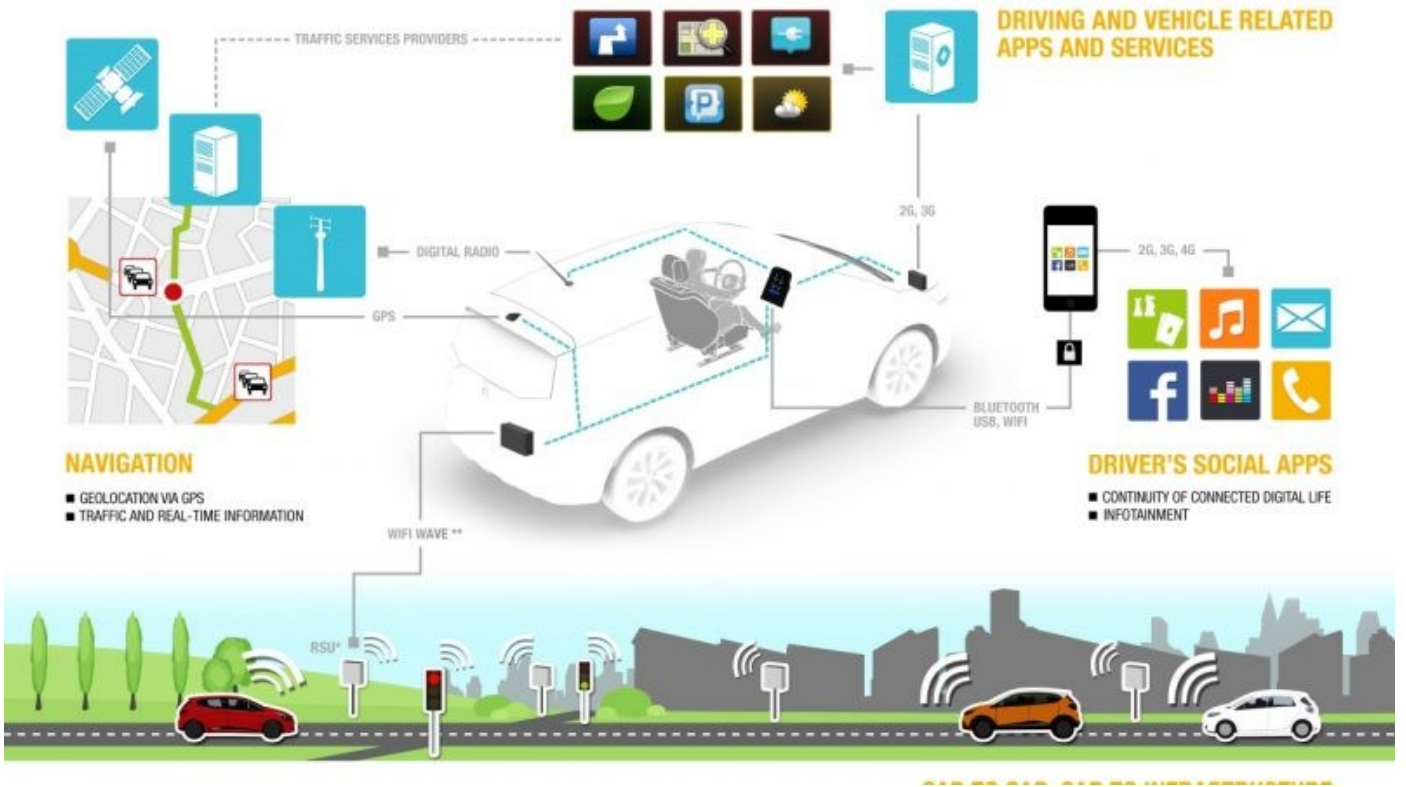
- Complex A/V
- Remote maintenance
- Real time navigation

Connected user

- Streaming music
- Social network
- Payment

Driving help

- Self park
- Self driving
- …



One of the high value component

Raising cost

- 2015 ~ 35%
- 2020 ~ 50%

SW vs HW

- HW is a one off
- SW is an open complexity
- SW maintenance ~70-80% of cost

Connectivity side effect

- Cyber security
- Mandatory SW maintenance
- …

What about other businesses

Telecom

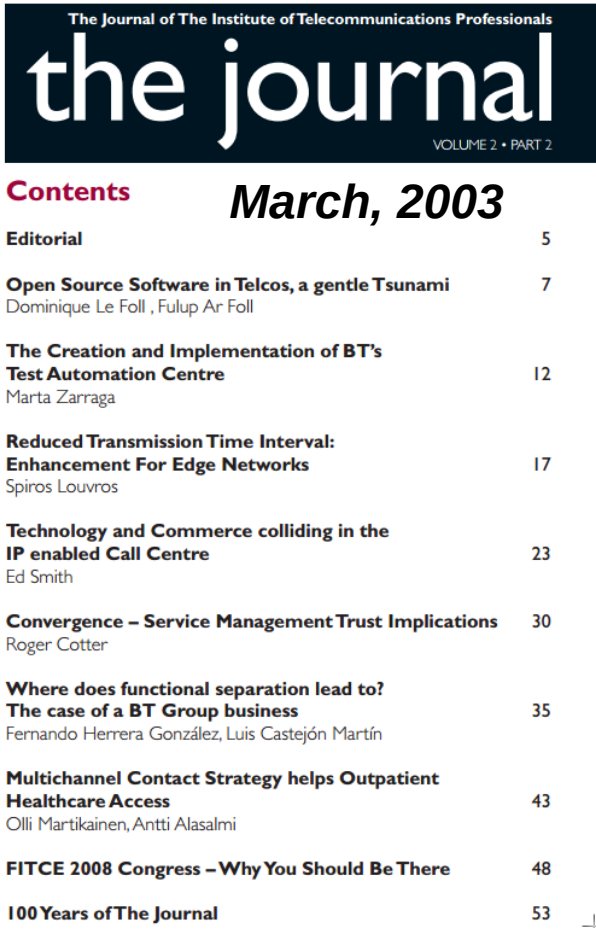
- 2000 the big move
- Today vitualisation
  - standard HW
  - standard SW modules

Consumer electronics

- Stop micro saving
- Favour reuse to extreme optimisation
- SW ~80% of R&D product cost.

SW value

- SW needs to become part of Cost of Good.
- Maintenance cannot be ignored



Key asset requires ownership

Value perception

- Car SW is becoming a key asset
- Associated to the car manufacturer
- Not dissimilar to the engine

Value and cost

- SW cost prediction is like black magic
- Easy to minimise at start
- Out of control at delivery

SW Industrialisation is required

- Less bespoke solution
- Loose coupling HW/SW
- Reuse – Reuse - Reuse

RENAULT INNOVATION BRINGS IN INTEL'S FRENCH R&D ACTIVITY SPECIALIZING IN EMBEDDED SOFTWARE

innovation

Groupe Renault

The acquisition project, set to go through by the end of the second quarter of 2017, is the latest move in Groupe Renault's strategy on development of connected and autonomous vehicles. Intel's French R&D teams, which number more than 400 IT experts, hold extensive international experience in the development of embedded software.

TECH

BMW, Daimler and Audi Clinch Purchase of Nok Business

German car makers to acquire Nokia Here in deal worth $3.1 billion

By Friedrich Geiger

Updated Aug. 3, 2015 11:12 a.m. ET

Germany's biggest auto makers have clinched a deal to buy Nokia Corp.'s digital mapping business, beating out rival bidders for some of the vital technology for self-driving cars in a €2.8 billion ($3.1 billion) acquisition.

Q & A