The Automobile Beyond Driving:  
Using Parked Cars as a Service Delivery Platform

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Overview

According to even conservative figures, cars are parked 95% of the time. With more than 1 billion cars in the world, parked cars therefore represent vast untapped infrastructure comprising computation, storage, sensing, and power resources. Unlike moving cars, stationary cars can provide stable, long-lasting access and environmental observation coupled with precise positioning information.

In parallel, the ongoing consolidation of in-car operating systems is expected to result in significant car-app-markets that will eventually allow software to tap into cars’ resources.

We propose that parked cars be leveraged to provide diverse public-facing services, thereby facilitating a transformation analogous to that of the computer: from a personal device to a shared app-based economy backed by the cloud.

Parking Space Usage

The proposed idea hinges critically on the availability and thus achievable density of parked cars in areas of interest. The figures below – compiled for Dublin city center – illustrate parked vehicle density (left), and duration (center) for typical non-holidays. Coverage maps (right) have been compiled to illustrate prospective wireless reception areas if cars were equipped with a WiFi router.

References and links:

www.zurich.ibm.com/science-posters/

Challenging the Status Quo

Employing parked cars as a service-delivery platform has the potential to change the status quo in three key ways:

1. By providing support infrastructure
2. By monetizing a currently wasted resource
3. By enhancing mobility functions

The envisioned service ecosystem benefits all stakeholders, including car owners (incentives for allowing services to run off their vehicles), car manufacturers (increased revenue by venturing into the services market), third-party developers (designing paid apps for parked cars), and city authorities (who benefit from providing services to their citizens, including an alternative business model for parking space monetization).

Applications & Use Cases

Potential applications served off of parked cars are diverse and include the following:

• Real-time perception and mapping
• Content sharing
• Distributed computation
• Ad-hoc communication
• Energy offloading

Example application: gas leak localization