

# Technology outlook

## Automotive Telematics

Automotive Telematics is a combination of a number of known technologies: vehicles, wireless communication and GPS. It can be used to offer services such as navigation, positioning, tracking and remote diagnostics.

Many vehicle manufacturers, including Volvo, already offer integrated telematics systems. Volvo offers systems such as Volvo Link, Remote Infom@x and Vodia.

In the long-term there will be a shift from the current vehicle-centric view to a communication-centric approach focusing consumers' information and communication needs.

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# Telematics

## Basic elements

- Wireless connectivity
  - Bluetooth between components inside the vehicle
  - GSM, GPRS and satellite outside the vehicle
- Positioning technologies
  - GPS for navigation
  - RFID for short distance identification and tracking
- Automotive and consumer electronics
  - Embedded systems
  - Radio, CD & DVD players
  - Video, camera and TV electronics
  - Telephone and PDA systems



By Francis Storr

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# Telematics

## Basic elements (cont.)

- Over-the Air protocols
  - 2G, 2.5G and 3G telecom standards
  - WiFi hotspots
- HMI (Human-Machine-Interface)

Telematic systems must not confuse or distract the driver due to information overload.

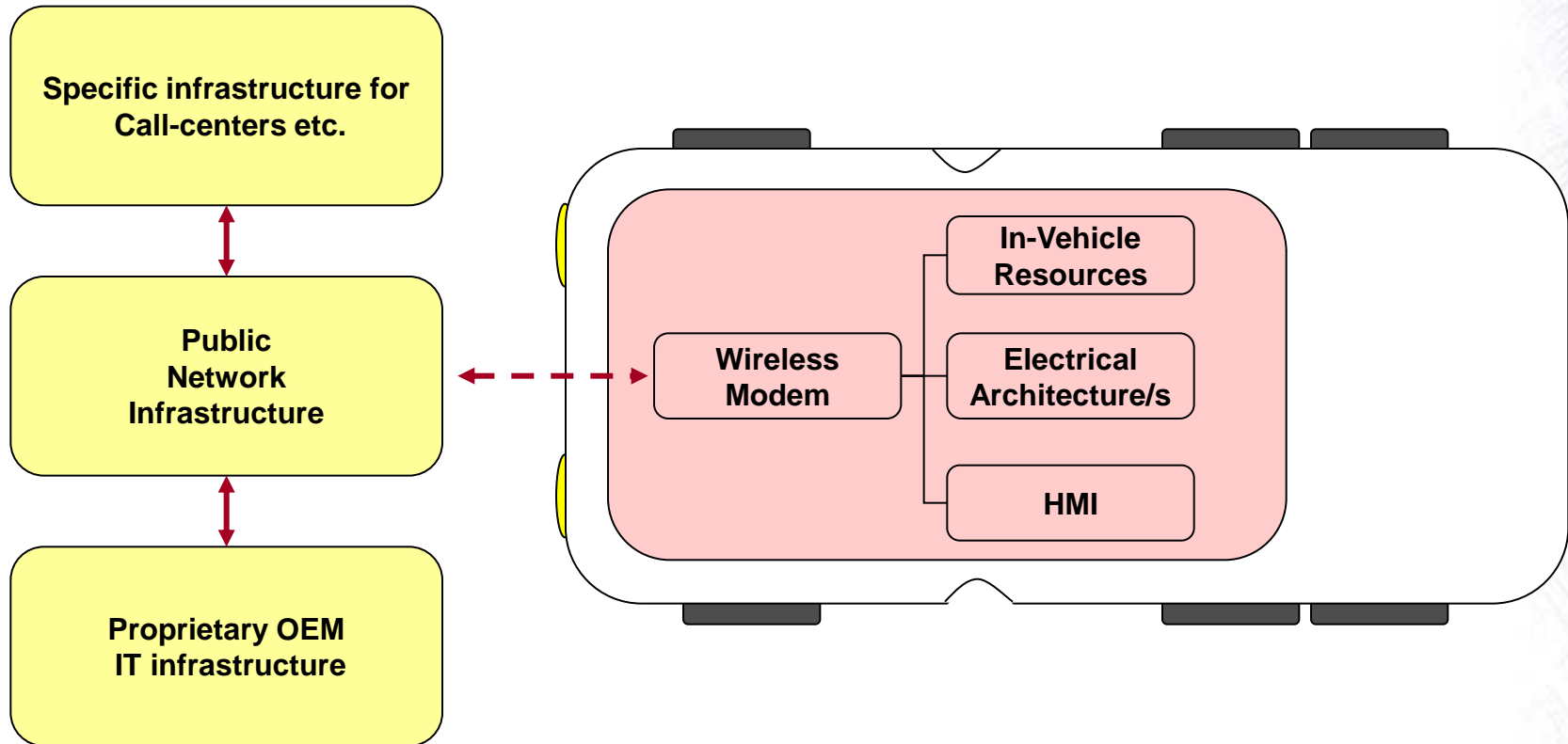
  - Voice, audio and touch screen
  - Gaze tracking (eye movements)
  - Gesture recognition
  - Haptics (sense and touch)



<http://www.flickr.com/photos/meerling/163829240/sizes/m/in/photostream/>

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# Telematics Technical Infrastructure



# Telematics

## Service development areas

Safety	Ensuring driver, vehicle and traffic safety
Comfort	Enhancing the driver and passenger experience
Maintenance	Prevent potential vehicle problems
Efficiency	Optimising resources, e.g. logistics and fleet management

In short- and mid-term the potential of telematics is becoming apparent and more advanced service offerings will appear

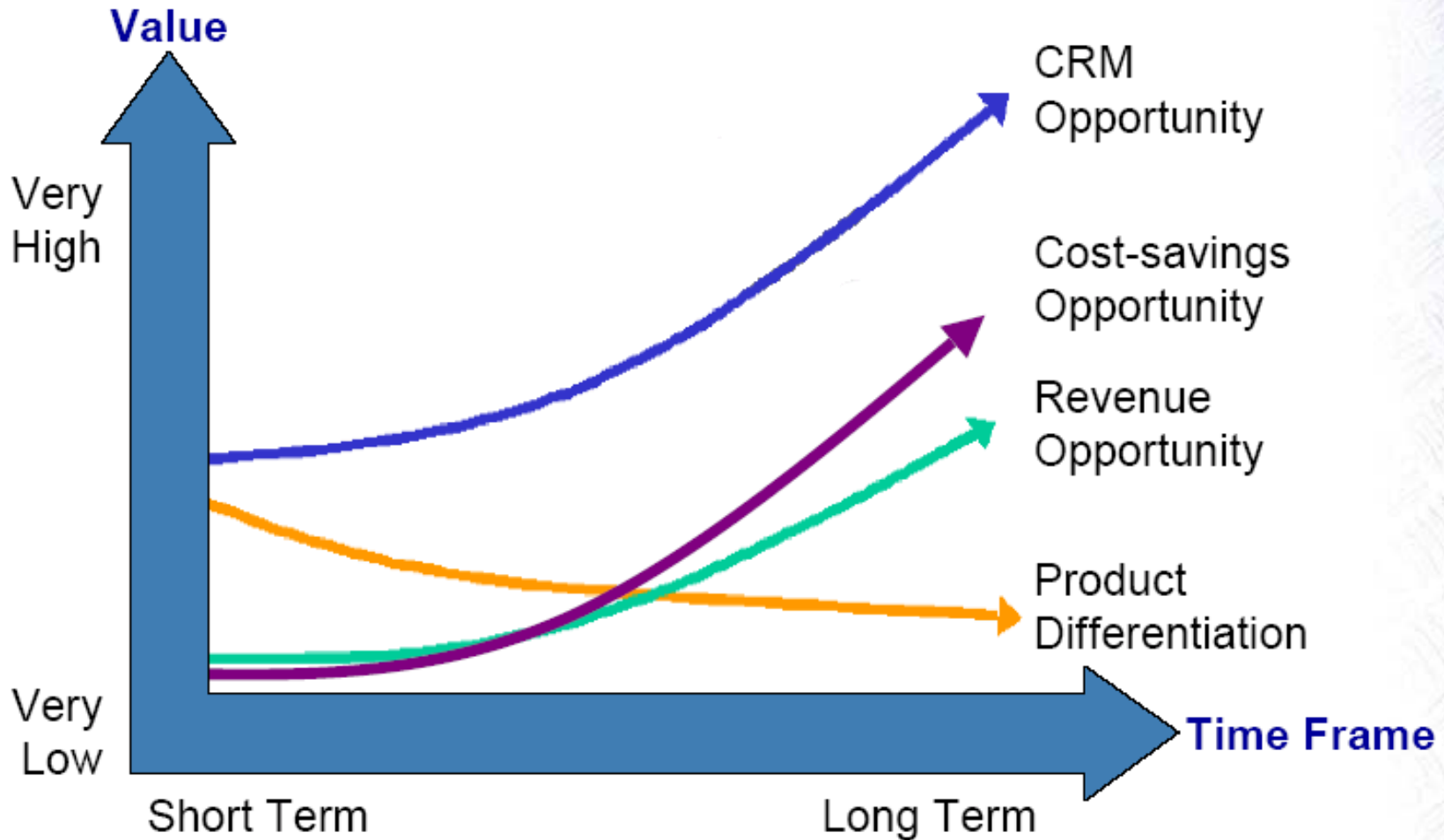
# Telematics

## Five years perspective

- Wireless connectivity coverage and bandwidth is the key factor to realisation of advanced telematics service offerings. During the next five years wireless communication continues to grow in both bandwidth and communication types.
- The lifecycle of consumer electronics is short. Portable multi-purpose-devices will have a strong market growth. Integration of these devices with the vehicle is a challenge.
- Standardisation of device connectivity, wireless networking, application platform, and vehicle infrastructure will continue to be an important issue for telematics providers.

# Telematics

## A five to ten year perspective



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