Trends in Automotive Infotainment

Can Cloud be a game changer?

Mangesh Khare

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Agenda

Infotainment Future

Automotive Electronics – driving forces

Can Cloud be a game Changer ?

Automotive Infotainment – what it means for you?

Future Trends

Key Technologies

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Automotive Electronics – Driving forces

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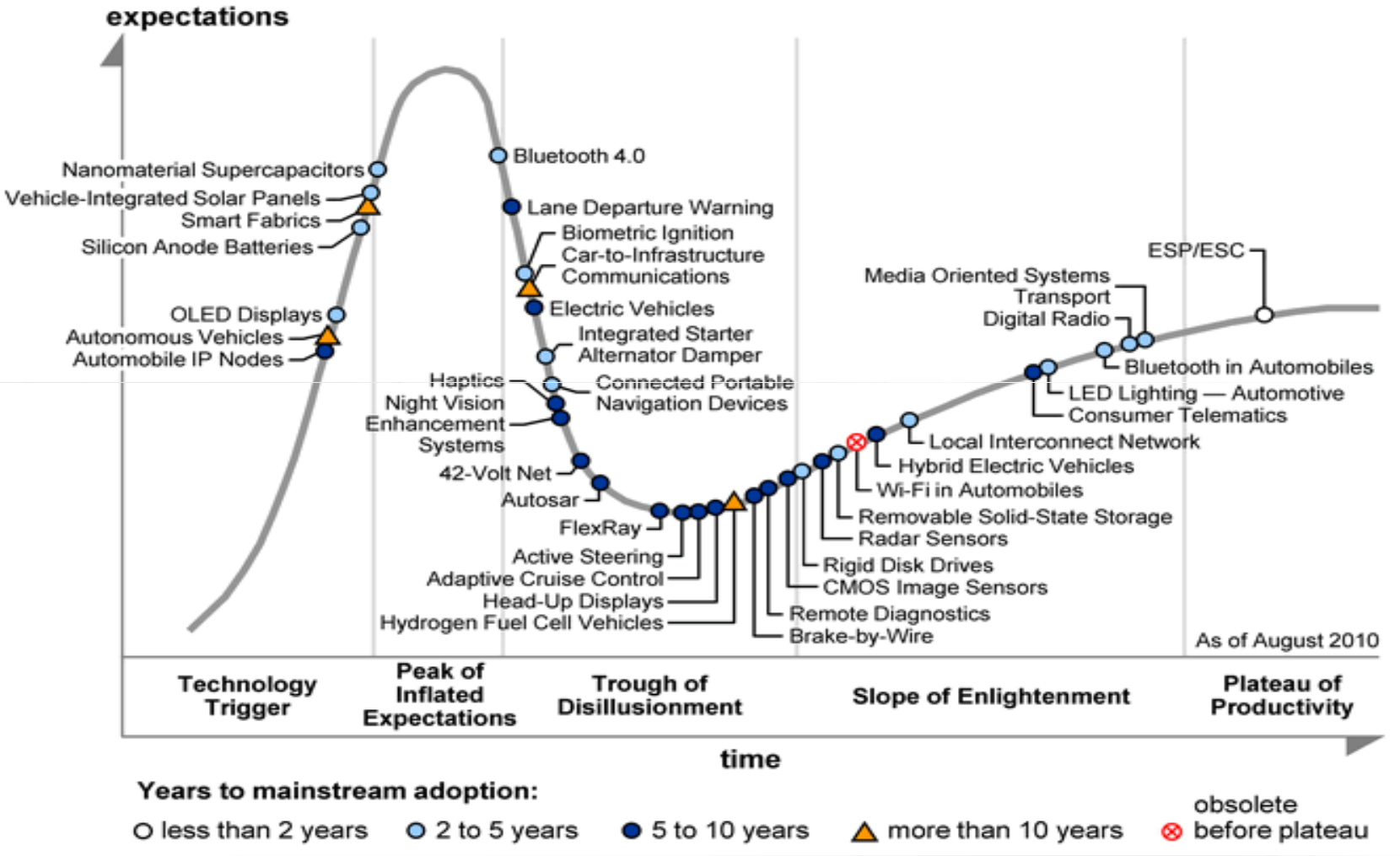
Automotive Electronics – Driving forces



Source: Gartner research

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Automotive Infotainment – What it means for you?

iPoD

Connectivity to Consumer Devices

Mobile Phone Bluetooth Wifi USB stick

Voice Commands Emergency Service

Access to call centre Remote Door unlock

Emergency call

Location Based Services Points of Interest

Traffic

Weather Live Information

Email Access Internet Radio

Social Networking Speed Cameras Pay-as-you-drive insurance

Music Download Cost & Time Optimisation

Turn by Turn Navigation Continuity with work env.

Climate Control Ambient Lighting

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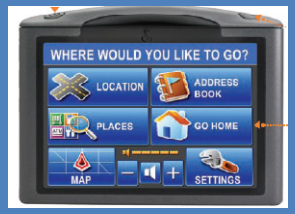
Automotive Infotainment – The Transformation

Analog vehicle dashboard

Personal Navigation Device

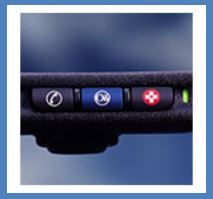


Car Radio

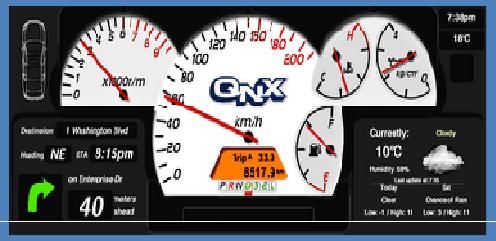
Hybrid dashboard (Analog +Digital)

PND + Multimedia Player

Telematics (On-star)



All-in-one (Digital cluster, Navigation, Infotainment)- single Control Unit



Next Generation Telematics Services (Ford Sync,On-Star, Toyota G Book)

Source – Pictures from QNX, Ford, Cobra, Toyota,On-star

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Automotive Infotainment – Some examples

GM- OnStar

MyFord Touch

BMW -iDrive

Source : GM Onstar, Ford, BMW

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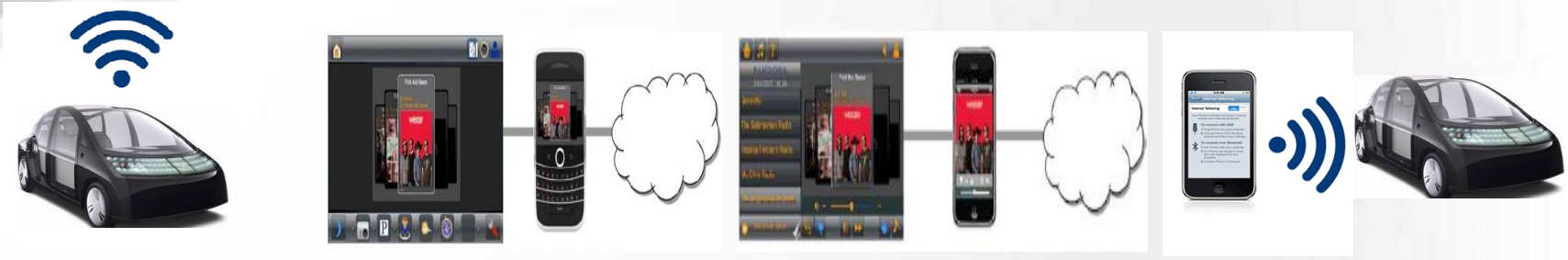
Connectivity

Embedded in Vehicle	Terminal Mode	Remote Skin	Tethering
Application and connectivity in built in car	Phone applications available on car head unit via Remote Terminal implementation	It is Terminal mode with tailoring of HMI on head unit. Application still resides in phone	Application resides in car with connectivity provided by mobile



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Automotive Infotainment – Key Technologies

OS

Microsoft	QNX	Genivi	MicroItron
Good customer base -Fiat, Ford, Kia	Owned by RIM, niche player	Customized version of Linux, Lead by Consortium	Proven track record in Janpanese market
Silverlight as UI framework, Internet explorer, support for multi-core IA, ARM v7 and SH4 architecture	QNX Nutrino RTOS, Aviage HMI suite, Adobe Flash lite	Open Source, MeeGo as a platform	Uses Third party HMI engine like UIEvolution

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Automotive Head Unit

HMI to be main differentiator	More integration with Vehicle functionalities	Focus on Data security	Head Unit Applications, Data on cloud, Field up-gradation
Rich GUI, 3D Graphics, Voice Recognition, capability, Fast response time, minimum driver distraction	Interior Lighting, Climate Control, Parking assistance, LDW	3rd party Application downloads, data on cloud, preventing harmful applications	Less computing & hardware requirements for Head Unit, OEM certified App Stores

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Cloud Advantages

- Cost Saving
- Highly Scalable
- High Availability
- Pay per Use
- Developer Tools

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Can Cloud be a game changer ? - Benefits

- End Users
  - Reduced cost of ownership
  - Multiple options and can always choose the best service provider.
  - Can get personalized services from OEMs
- Automotive OEMs
  - Get real-time data from the vehicles
  - Ease of building differentiated applications and distributing them using OEM specific data from the vehicles.
  - Reduced cost & faster time to market.
- Tier1 Suppliers
  - Can be interface between OEMs and cloud developer ecosystem.
  - Reduce development cost for OEMs
  - Can address needs of all OEMs irrespective of their size.
- Infotainment Ecosystem
  - Larger, Better Developer Ecosystem
  - Cheaper Validation
  - Multi-OS / Multi-Platform agnostic Infotainment systems

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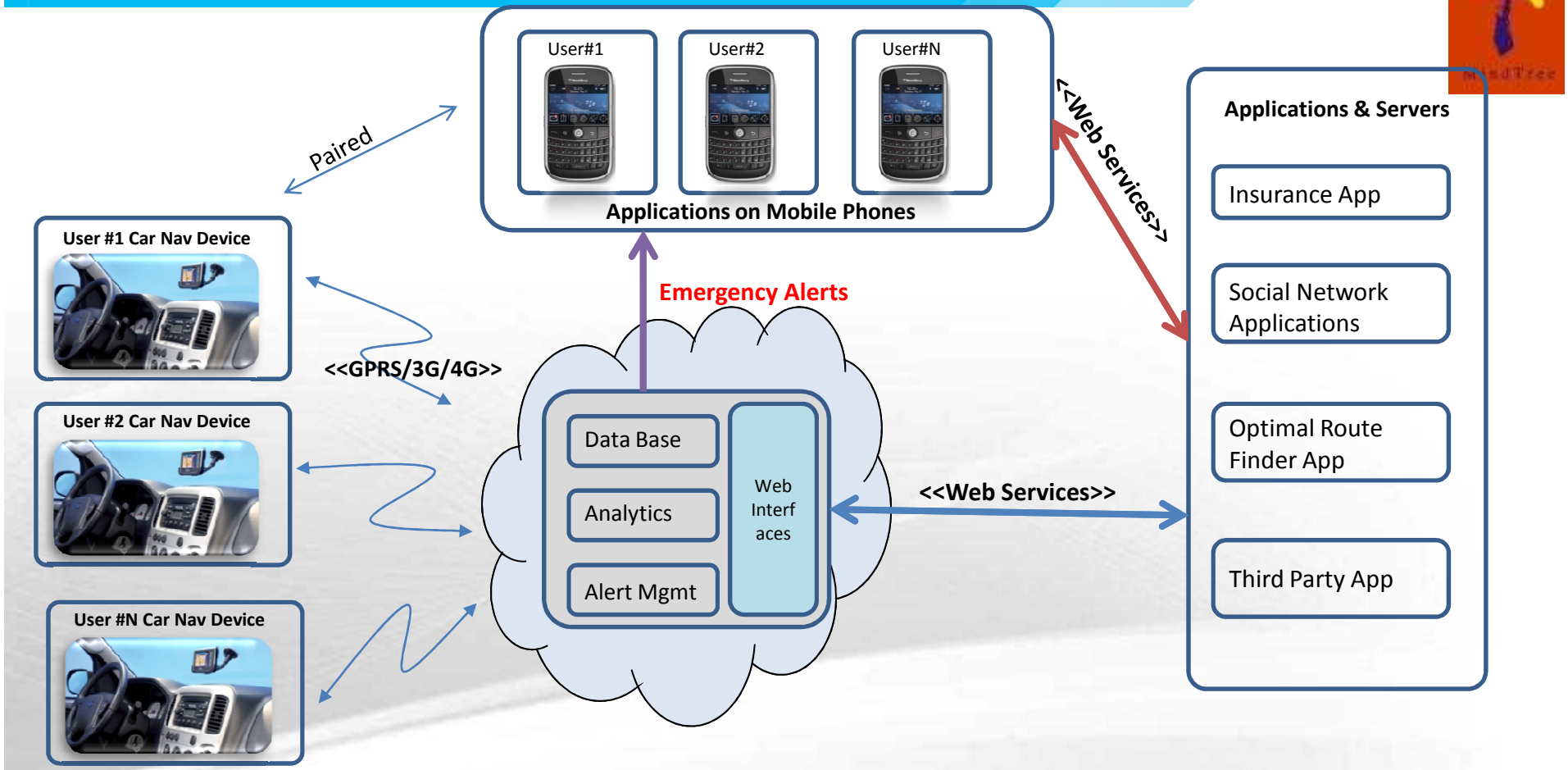
Future of In-Vehicle Infotainment



- User to login using unique User ID and Vehicle ID
- User can control Data sharing credentials
- All applications like finding optimal route/navigating/insurance app will run on Mobile Phones
- In car device will communicate with server using GPRS/3G/4G and devices will be GPS enbaled
- In car device will have to get some information from Car electronics – Mileage data etc.,
- Server will store all data in data base and will run Analytics software for providing data to third party application developers
- Server will expose Open web interfaces for any third party application developers to develop applications
- All map data, navigation information etc., will run on Mobile devices

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Summary

- Wireless connectivity to become a backbone of any in-vehicle infotainment system.
- Smart phone to become a most prominent connectivity gateway.
- More standardization on Head unit hardware and OS.
- Open-source OS to gain more & more market share.
- Innovation would happen on creating applications using vehicle and environmental data.
- Innovative HMI, reliable voice recognition, Personalization of in-vehicle environment, and App stores to drive future growth !!

In-car Health & Wellness Monitoring can be a next wave !!

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