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Is In-Vehicle Infotainment changing fast enough?

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Although the name “Infotainment” suggests that the current in-vehicle terminal offers a combined experience of entertainment and information management, the experience reality is limited when compared to the smartphone carried by most occupants. Currently the In-Vehicle Infotainment platform offers a docking station for the smartphone for hands free calls and music files, alongside turn by turn navigation. All interaction is focused on the single integrated screen positioned in the centre of the vehicle. The terminal functionality has expanded to access and control the vehicle related management setups by including these in the menu based UIs. The rate of change is slow, and still the deletion by carmakers of the in dash CD player attracts news attention.

The landscape will change; the challenge is how the rate of change will be accelerated to meet the upcoming opportunities?

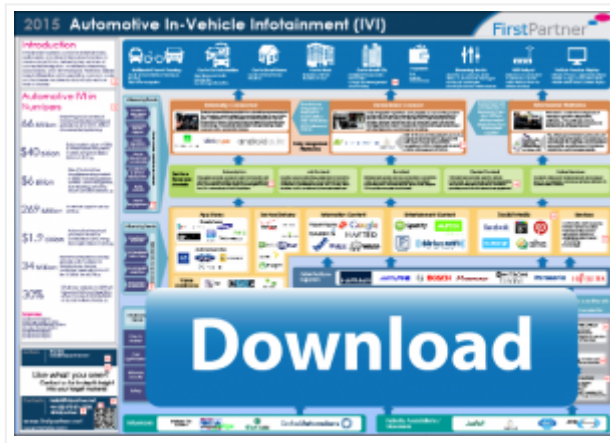
The landscape is being already being changed by surrounding consumer technology adoption. The

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widespread use of smartphones is driving the agenda in expectations of connectivity, UI and personalisation. Local legislation has forced smartphone users to be open to different in-vehicle UI methods to meet safety concerns. This challenge has been met with a quick response from the smartphone OS vendors keen to capture a share of the developing in-vehicle market with the introduction of voice assistance UIs such as Apple Siri and Microsoft Cortana. These offerings have a user adoption advantage that they can be used in multiple environments, not just in-vehicle.

Competition exists for control of the In-Vehicle Infotainment function, and this will force an accelerated rate of change by the vehicle manufacturers if they are not to surrender and become regarded as a smartphone docking station provider. Apps on Smartphones can provide sophisticated setup and controller capabilities for many consumer devices, why should this not extend to another device – the vehicle?

If surrender is not an option, then the change needed will not just be around the platform, but also around the total experience offered in-vehicle. The reward is likely to be measurable in new revenue generation.

In cabin service revenue is not a new concept, as GM OnStar has demonstrated for a number of years. The

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new revenue generation will emerge around enabling users to personalise their experience. This is a format that users are already familiar with through the smartphone app stores. The challenge is determining exactly what users will find useful to drive their interest and adoption. What will be the format? Will it be around streamed media extension offering different driver and passenger experiences, or value based services unrelated to the specific journey?

In-Vehicle Infotainment systems will become the centre of the human interface experience. To achieve this, its role will need to satisfy an increased variety of needs beyond the in-vehicle environment.

Emerging needs which will be supported by the In-Vehicle Infotainment platform include:

In Life Vehicle Feature Upgrades – Whilst telematics will handle in life software upgrades and fixes, either over the air or hard connection at dealer sites, a new opportunity exists to offer in life functionality upgrades to users. Where existing embedded hardware functionality exists, firmware upgrades could be purchased directly through the infotainment terminal, with post purchase education displayed to help users derive maximum value. This also generates new opportunities for in-life product and brand engagement alongside a new revenue stream.

Vehicle to Infrastructure (V2I) – Environmental and legislative pressures will require new services to be offered, using dynamic information delivery to control routing, pollution contribution and road use. These infrastructure based information sources will drive new in-vehicle applications such as multi-modal journey planning, where the in-vehicle experience will be only part of the intended journey. This will require real time journey information, location and payment

processing to provide the best journey options, necessary parking capacities along with booking and payments and a seamless transition of information. All necessary interaction and communication will have to take place using UI's compatible with required safe driving standards requiring partnerships with local infrastructure information providers and aggregators to intelligently acquire and process the transactions.

Vehicle to Smart Home – With the adoption of Smart Home capabilities, consumers will expect the control capabilities they enjoy using their smartphone to be extended into the vehicle. The opportunity exists for the infotainment platform to become an extension of the home, enabling real time management to be performed whilst in journey. The provision of these in journey capabilities creates opportunities to participate in a value chain which will otherwise grow in parallel with the in-vehicle experience.

In Vehicle Payments – Although a number of services will be offered on an ongoing subscription model, the opportunity exists to create instantaneous revenues through abnormal or infrequent behaviour patterns. To accommodate these, secure payment methods will be needed either using levels of pre-authorisation or authentication methods that are both secure but meet acceptable in-vehicle distraction levels.

As the power of the infotainment platform increases, research will need to be conducted into the both the UI and user segmentation. Will the function of the infotainment platform be focused on providing a UI focused on the driver, or will it address the needs of all occupants? Two future development scenarios are:

- A simple model would build on the existing low end smartphone connected model, focusing on providing driver focused functions leaving other

occupants to use their own mobile devices. A WiFi hotspot may be offered for these other personal devices.

- The infotainment platform becomes the centre of the in-vehicle time, providing a driver centric UI accompanied by wider functionality options for other occupants. These may extended to include access to work based and other productivity services in addition to entertainment, communication and commerce related activities.

To achieve the later scenario, the current time to market and product life time of the automotive sector will need to move from mismatch to matching with consumer expectations. Specification lock down and time to manufacture inherently mean that whatever is launched will be behind the expectation curve with continuing divergence as the product life time progresses. To address this Infotainment platform developers will need to provide the platform onto which emerging needs can be quickly ported and open to 3rd parties. Will this require a radical change of strategy of owned platforms such as Ford Sync?

Tesla have already incorporated the capability for owners to receive directly in-life software upgrades by connecting their Tesla Model S vehicles to their home WiFi. Upgrades can be downloaded and installation scheduled through the in car infotainment screen in exactly the same way as PC upgrades. Current version 6.2 upgrade includes automatic notification of nearby charging locations, trip planning, valet mode and Driver Assistance features of automatic emergency braking and blind spot warning. Version 7 update, due this summer, is predicted to include a complete overhaul of the UI.

The ability to achieve a remote radical overhaul of the UI and release of new functionality demonstrates an

early capability of in life revisions and active management of revenue related services. Next step will be to extend this further to enable owners to choose, schedule and purchase.

The In-Vehicle Infotainment will need to undergo a fast and radical change in its role. The reward will be increasing relevance both in the brand buying decision and the creation of in-life direct and indirect revenue streams. The alternative is to become a smartphone docking station surrendering all value to the smartphone, leaving no direct revenue leverage.

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