Digital Signage for Vehicles

Cars, trucks and buses long have served as a forum for advertising.

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Vehicles long have been used as a way for advertisers to get their messages across. From the lowly bumper sticker promoting things such as politicians and tourist attractions to billboard-sized signs on the sides of buses, the concept of advertising on vehicles has been around nearly as long as motorized vehicles have been on the road.

The trend has grown even further in the last few years with the popularity of vinyl wraps that can turn an entire vehicle into a mobile marketing effort.

But, as occurred with traditional static signage, technological developments are paving the way for digital signage to become a feature of the street.

Seeing the potential

Stand near a busy intersection in any major city and you likely will see dozens if not hundreds of vehicles carrying some form of advertising. It won't take long before the potential of vehicle-based advertising is readily apparent.

Many of the advantages offered by place-based digital signage can be a feature of vehicle-mounted digital signage as well. Unlike static signage, vehicle-mounted digital signage can incorporate full-motion video, can be changed or updated at a moment's notice, can be rotated to reflect the time of day and can incorporate geolocation technology that chooses the advertising for display based on the vehicle's location.

If a taxi cab, for example, is within a predetermined distance of a particular restaurant, the system can be programmed to display ads for that restaurant. In the morning those ads can promote breakfast offerings, while in the evening they can feature the restaurant's dinner entrees.

Unlike static ads that can fade and look dirty over time, ads on vehicle-mounted digital signage can be kept looking fresh.

Digital signage doesn't just have a place on the outside of vehicles. Screens can be mounted in the back seats of taxi cabs or inside buses to inform and entertain passengers during their trips.

Payment solutions provider Verifone, for example, has integrated digital signage into its payment-processing solution in more than 100 taxi cabs in New York City. The company sells 15-second spots on two-minute loops that play in the back of those cabs.

Still, the concept of on-vehicle digital signage is still in its relative infancy as deployers work to overcome many of the issues that face other types of outdoor digital signage, including protecting equipment from exposure to the elements and ensuring signage can be seen in all types of lighting conditions. In addition, those deployers need to take the extra step of ensuring that equipment is protected from vibration caused by driving on rough city streets and that it can operate flawlessly using power from the vehicle's electrical system.

Meeting the challenge

A number of companies have introduced new products over the last few years to take advantage of the growing market for on-vehicle digital signage, ranging from car toppers to screens designed to be mounted in the sides of cars, truck or buses.

Deploying Digital Signage solutions in public transportation however isn't quite as simple as hanging a few LCD displays and hooking up a few computers. The vehicular environment and usage model presents some significant challenges. For instance, vehicular systems have to withstand the sub-zero temperatures of a winter night and come to life in the morning without hesitation. They also need to weather the blazing heat of summer compounded by the greenhouse effects of a vehicular cabin. Temperature swings aside, vehicular systems must also function with unstable power sources – a car battery may see voltages fluctuate between 9 and 14 volts, while some buses and trains operate on power systems with nominal voltages of 24 or 28 volts. Finally, there is the fundamental – but frequently overlooked – requirement that any vehicular system have an automated and intelligent power management system. A digital signage player installed in a vehicle should ideally turn itself on automatically when the vehicle is in operation without the driver having to manually flip a switch. More importantly, it must not simply lose power when the key is turned off. This may crash the operating system or introduce errors into the software! It cannot be left running perpetually either, as this will drain the battery flat and prevent the vehicle from being started if it was parked overnight. The power management system must respond intelligently and automatically to changes in the state of the vehicle's ignition system. This permits the system to power itself on autonomously, command the OS to shutdown gracefully, cut power after the appropriate delays and protect the vehicle from being

Four trends in on-vehicle digital signage

- Taxi cabs currently use dynamic digital signage in an advertising model. Verifone operates more than 100 units in New York City, selling the two-minute loop length as 15-second spots. The units operate at 2,000 nits brightness and offer dayparting, week-parting and geo-zoning capability.

- Public transit buses and trains, which long have enjoyed advertising revenues from static sign advertising, are looking at shifting to dynamic signage to increase revenue.

- Special-use and event vehicles with integrated dynamic signage are in limited but growing use. LED-outfitted trucks can deliver dynamic pedestrian-level messages.

- The future may include vehicles operated by first responders (e.g., firefighters, police officers and ambulance workers) and security agencies bearing dynamic signage for brand, advertising, public safety and information messaging.

Source: Lyle Bunn, an analyst, adviser and educator in North America's digital out-of-home industry

stranded by an exhausted battery – all without deliberate interaction from the operator.

IBASE Technology, for example, has developed its SE-92 digital signage player, which is designed to operate in an on-vehicle setting. The SE-92 is a ruggedized fanless system based on the 5th Generation Intel Core processor. Featuring a wide-operating temperature range from -40°C to 75°C and 6V to 32V wide-range DC input, it is built specifically for harsh environments in outdoor and in-vehicle applications. An ignition sensing automatic power management circuitry is built onto the SE-92's mainboard and a menu based configuration interface is included in the system firmware for easy setup.

Using 5th Gen Intel Core processors on board, the SE-92 can drive two displays with smooth visual quality without the need for a discrete graphics card. The integrated dual DVI-I interface supports either a DVI-D or VGA display and has built-in EDID emulation function. Additionally, the SE-92 has two dual-channel DDR3L-1600 sockets to provide up to 16GB of memory, dual Gigabit Ethernetand an optional 64GB mSATA SSD drive for fast system boot and low heat emissions. M.2 and mPCIe slots with an accompanying SIM card slot are provided to support expansion in capabilities which includes LTE wireless networking and mobile WiFi hotspots. It also comes with Intel AMT for the remote control and IBASE's iSMART green technology for power on/off scheduling and power resume functions.

About the sponsor:

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