

viewpoint

THE VALUE OF AN OPEN INFOTAINMENT PLATFORM

Consumers keep clamoring for more information and entertainment capabilities in their vehicles. Carmakers have responded with everything from rear-seat entertainment centers to navigation systems, and the list continues to grow.



Staci Palmer

The industry's standard practice is to develop each infotainment system independently. That means the hardware and software for one are generally incompatible with each new generation of product. In many cases, scalability isn't addressed, so new features can be added only by introducing an additional "silver box" into existing vehicle architectures. This piecemeal approach is costly

and can stifle innovation. Intel Corp. has another strategy: Why not take advantage of the "ecosystem" surrounding PCs, MIDs and other mobile consumer electronics to bring the latest digital lifestyle into the car?

In April 2008, Intel unveiled the Intel Atom processor, a half-inch-square, 32-bit microprocessor developed specifically to bring PC-like computing power to portable devices and embedded systems, such as in-vehicle infotainment devices. The Intel Atom processor is built on the industry breakthrough high-k 45 nm microarchitecture, bringing robust performance, advanced 3-D graphics, HD video decode, HD audio and extensive I/O. Yet it consumes less than 5 watts of power, so it's well-suited for use where packaging space is limited. It also provides a solid computing foundation for Open Infotainment Platforms.

Staci Palmer, Intel's Director of Infotainment, in Chandler, Ariz., explains the potential.

Why is Intel working with the automotive industry?

Consumers want to bring the same digital lifestyle they enjoy in the home and office into the car. This is exemplified by the growing number of carmakers offering navigation, rear-seat entertainment and telematics capabilities, along with seamless connectivity to brought-in devices such as MP3 players and phones. Intel plays a central role in delivering technologies to support consumers' home and office multi-media based experiences, and the car is a natural extension of that.

What is an Open Infotainment Platform?

The history of infotainment in vehicles has been one of developing separate proprietary hardware/software plat-

forms for each infotainment system. The complexity of validating each system and making sure one doesn't interfere with another consumes time and cost. Just as important, a custom-developed system is difficult to update, which makes it harder for carmakers to keep up with consumers' appetites for the latest consumer electronics features.

Open Infotainment Platforms allow automotive manufacturers to utilize one common hardware and software architecture that can be scaled across product lines and generations. It encourages re-use at the OS, middleware and most importantly the application level. In addition, all applications for both driver and rear-seat passengers can be integrated into the same system vs. separate systems in the front and rear seat.

What advantages does the Intel Atom processor offer?

The Intel Atom processor uses the same consistent instruction set as other Intel processors, giving automotive developers a consistent, extended environment in which to create new products. This ecosystem includes a large number of rich and robust operating system choices. Virtually any software written for PCs and mobile Internet devices can run on the Intel Atom processor. We think that degree of flexibility, coupled with the cost savings and reduced validation effort required in adopting an open infotainment platform, will be very attractive to carmakers.



Could the Intel Atom processor eliminate the dozens of processors used in cars today?

It certainly allows consolidation of entertainment-related devices, which is exactly what it was designed to do. There will continue to be many onboard automotive applications for 8- or 16-bit microprocessors that control very specific tasks, such as antilock braking, airbag deployment or body control. However, the Intel Atom processor is meant for infotainment devices. Its key advantage is the ability to reuse software and employ the same hardware to scale performance from the low end to the top end of an OEM's vehicle lineup. There also are a vast amount of development tools available, because the Intel Atom processor is based on the same X86 instruction set used by chips in PCs for more than 25 years.

For more information about Intel Atom processor and automotive infotainment applications, please click [HERE](#) or visit intel.com/go/infotainment.