



## **The revolution in the TV viewing experience**

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Last year gave people their first glimpse of a revolution in TV viewing – the beginnings of a world where everyone will be able to access and enjoy more multimedia content on more devices than ever; anytime, anywhere.

This year, the introduction of advanced new consumer products will begin to make that world mainstream giving everybody the chance to have quick and easy access to their favorite TV, video, images and audio throughout their homes and while they are on the move. The possibility to network products such as set-top boxes, DMA's, PC's, TV's and personal video recorders will be both affordable and easy to install. Wireless technology, which already plays such an important part in keeping you in touch when you're away from home, will also be the key to creating ubiquitous connectivity within your home.

Convergence and connectivity will continue to drive the consumer electronics industry, with every new generation of products featuring more functionality, more memory and more advanced communication capabilities than ever before. Consumers will be able to capture, store and re-play content on an increasing number of devices. As a result, the distinction between people who spend their leisure time in front of a PC and those who spend it in front of a TV will rapidly become blurred. Over 90% of the content they enjoy will be available on both platforms and transferable from one to the other.

The advent of digital devices such as Digital Media Adapters (DMAs) and network-connected Personal Video Recorders (PVRs) has already bridged the divide between the PC and TV. Content providers and triple/quad-play service providers have seized the opportunity to create and deliver value-added services across both domains.

However, despite the fact that these products and services are no longer solely for early-adopters, consumer acceptance has not yet reached mainstream proportions. Many consumers remain skeptical about the inter-operability of such systems and are therefore reluctant to spend their money. In 2007, it is the task of the semiconductor, software and service provider industries to bring the price points for connected home products down to levels that facilitate mass market adoption and to ensure that consumers' first experiences inspire lasting confidence in the technology. Failure to do so could set the market back several years.

Consumers cannot be expected to buy all their connected devices from one manufacturer or buy them all at the same time. They must be able to build systems gradually, adding new devices only when needed. For existing TV-centric users, DMAs and multi-room PVRs will boost confidence through familiar 'set-top-box' equipment. For PC users, Microsoft Vista, PC TV and PVR on PC functionality will help to drive greater adoption of connected systems. To make systems easy to set-up, compliance with industry standards such as DLNA, UPnP and Microsoft's PlaysForSure initiative will become essential features on equipment, ensuring inter-operability between the two domains. NFC (Near Field Communications) will equally play an important part in configuring equipment. Effective DRM (Digital Rights Management) will also need to be universally adopted in order to persuade content producers to release box-office content into connected home environments.

However, NXP believes that such interoperability must go far beyond the connected home. It must extend out to mobile, personal and automotive domains as well – into what we call an environment where you can enjoy the same content on your mobile phone, personal media



player or in-car entertainment system as you enjoy in your home. In reaching out to these domains, the concept of 'Connecting Living' has created the need for advanced media processors that can decode multiple formats and in some cases transcode content between formats, scaling and enhancing it to match the capabilities of different devices. For mobile and portable devices it also means achieving this at power levels that are commensurate with the energy storage limitations of battery packs.

It is precisely for these DSP-intensive, low-power consumption, streaming media applications that NXP's advanced Nexperia processors are designed. By exploiting synergies between our home, mobile and personal, automotive and RFID businesses we are able to integrate our media processors, along with other critical sub-systems such as RF connectivity pipes, into optimal cross-platform solutions.

However, simply providing components or sub-systems isn't enough to sell silicon into fast-moving markets where consumer electronics companies increasingly differentiate themselves on the 'look and feel' of their products rather than on the underlying electronic design. To satisfy the fast time-to-market requirements of these customers you must provide them with production-ready reference designs that they can tailor to their specific needs with minimum design effort. For NXP, it means providing reference designs for a wide range of connected devices, including LCD TVs, (IP) set-top-boxes, personal media players, mobile phone handsets and IP cameras. And it means demonstrating the ruggedness of these designs by testing them to their performance limits in NXP's 'torture rooms'.

It also means working with relevant partners to provide highly interoperable solutions at consumer price points. Customers rightly expect us to have strong relationships with experts in content protection so that DRM is built into our reference designs. Such partnerships will become even more important as we face the shift from SD (Standard Definition) to HD (High Definition) TV, as we move into a world where an increasing amount of consumer-owned content is stored on remote servers, and where wireless communications becomes as ubiquitous in the home as it is in the mobile domain.

One thing is certain, it is silicon vendors such as NXP that hold the key to unlocking the world of connected living with their understanding of RF and wireless systems through to multi-format decoding and transcoding. In doing so, they will allow CE companies to market products that truly meet consumer demand for easy-to-use content sharing and distribution across home, mobile and automotive domains – giving them a vibrant TV viewing experience.