



Intel Innovation Future Showcase Backgrounder

Technology today and tomorrow

Technology is all around us, so much part of our lives today that we barely notice how exciting it is. Yet we can still be wowed by new developments that will make our experience of technology more exciting and even more personal.

So what's going to be exciting us tomorrow?

Perceptual computing

Coming soon to devices near you is perceptual computing, which will let you control devices from tablets and Ultrabooks to your car dashboard using gesture, voice and eye motions.

Intel has already published its software development kit for developers, which means that you can expect to see gesture control being implemented in all kinds of devices very soon.

In real-world terms, perceptual computing is a giant shift in the way we interact with every piece of technology we deal with.

You'll be able to control the TV with gestures – so no more digging under sofa cushions to look for a lost remote. Or how about being able to tell your car where you want to go rather than having to stop and program the GPS?

Gamers will be able truly to lose themselves in their virtual world, shooting aliens and finding treasure with movement rather than with a mouse or a gamepad. You'll even be able to turn the page on your e-reader with a flick of the eye.

So farewell to the trusty mouse, and farewell to the remote control. Though it's unlikely to mean farewell to arguments with your other half about who gets to choose what channel you're watching.

The Intel NUC

Technology has been getting smaller and more streamlined, and new to the tribe of tiny devices is Intel's NUC – the Next Unit of Computing. The NUC (pronounced "nook") is a tiny barebones powerhouse of a computer boasting a 3rd Generation Intel Core processor that offers a huge range of possibilities from a place under the TV at home to commercial use such as digital signage.

Mixing low power consumption and a pocket-sized form factor, the NUC is both capable and infinitely portable, as well as highly customisable, as it's up to the user to decide how much RAM to install, and whether or not to include Thunderbolt, the next-generation interface,

Powering digital signs, from in-house single-screen set-ups to interactive multi-screen display walls, the NUC is already making its presence felt in the commercial space.

The NUC will also be equally at home in your home as a family device: it's a fun choice for hobbyists as it's up to you to add components to tailor it to your needs. And it's also a great choice as a home entertainment device: small and easy on the eye, the NUC will fit right in to your home – and your life.

Adaptive All-In-One PC

Family members have a habit of wandering off with their own devices – watching a film on a tablet, or playing a game on their phone or wading through a spread sheet on an Ultrabook. How do you bring them all together?

The answer is with an Adaptive All-In-One – a PC that can be detached from its stand and used as a giant tablet. Imagine a 20" or even 27" surface that can be laid flat and around which the whole family can gather to watch a film or to play a game.

It's an exciting form factor that takes the best of PC architecture and combines it with the hugely popular tablet to create a unique device that will bring the whole family together.

Intel® Anti-Theft Technology

Beautiful Ultrabooks are highly desirable – and of course are a tempting target for thieves. However, another elegantly realised new technology to thwart would-be thieves is already shipping with devices: Intel's Anti-Theft Technology.

Encryption is one way to protect your data, and is a central plank of Intel's Anti-Theft Technology. If your device goes walkabout, you can very quickly stop your data falling into the wrong hands by disabling it with a poison pill, which locks your device.

What if you can't get to another device to activate the poison pill? You can also set up the device to check in regularly: if it doesn't phone home and say it's OK, it will be automatically bricked.

What if the thief tries to get around the protection by formatting the hard drive? The good news for you – and bad news for him – is that Ultrabooks with Anti-Theft Technology are tamper-proof because it is implemented in the hardware.

But what if you get the device back? The good news is that you can reverse the poison pill: your data hasn't fallen into the bad guy's hands.

Seeing Through Rain

Our cars already carry a huge range of on-board technology, but a smart headlight being developed by Intel in partnership with Carnegie Mellon University pushes functionality and safety to a new level.

Driving in the rain or snow is tiring and stressful – but by the end of the decade you could be driving a car that makes the rain invisible.

The Seeing Through Rain technology is a headlight which is more akin to a projector than a traditional single-bulb headlight found in today's cars. The system incorporates a digital camera which tracks raindrops as they fall, and feeds that data in to the car's system.

The car then works out where the next raindrops will fall and switches the individual bulbs off and on so as to avoid illuminating the raindrops – with the result that the driver sees far fewer raindrops.

Safer, smarter – and potentially in new cars within a decade.

The Magic Mirror

Trying on clothes is a nightmare. The same size can fit you differently from brand to brand, and nobody likes struggling in and out of their clothes in a communal changing room.

In a few years' time, you won't have to get your kit off in front of strangers: Intel's Magic Mirror will make the whole process much less painful.

Using perceptual computing and gestures, you'll be able to create an accurate representation of yourself – an avatar – and try the clothes on virtually, projecting them on to your avatar on the screen that rather than having to wrestle with real-life buttons and zips.

You'll be able to do this at home, too – which means the days of snapping a quick photo and sending it to a friend to ask “does my bum look big in this?” are numbered.

Display As A Service

Displaying video should be a lot easier than it is. But in practice, it's a pain: it involves cables and faffing about. The way forward lies with using virtualisation to break that link.

DaaS in effect turns any screen into a series of pixels to which an image can be sent from any device. So an image on a tablet could be sent over a network to several screens at once, which means a team could collaborate on a project – wherever they all are.

Or imagine several separate screens being turned into one giant screen using DaaS. Alternatively, the images from several different devices could be thrown on to one monitor: imagine all the grandchildren beaming content from their tablets or Ultrabooks on to their grandparents' screen 100 miles away to create an immersive family experience.

The aim is to create an open standard around DaaS so that devices across all platforms can be part of the experience within the next five or 10 years.

North Cape

Sometimes it's the small design touches that make a device truly great. North Cape convertible Ultrabooks are a great example of that.

We're already familiar with convertibles – laptops where the screen can be detached to become a tablet.

However, there's a compromise: while we like the most screen real estate possible in an Ultrabook, a tablet is a slightly different matter - you need to hold it. So do you have a thin, elegant bezel suitable for a notebook, or do you reduce the available pixels and have a wider bezel so that thumbs and fingers aren't constantly activating bits of the screen?

North Cape, which will use, a 4th Generation Intel® Core™ processor, solves that problem. Docked, the screen fills the available space, making the most of the 13” 1920x1080 display.

Undock the screen and the Smart Frame technology kicks in, shrinking the available screen space to 11.6” and creating an unresponsive border that's just the right size for fingers and thumbs.

What's really exciting about all these technologies is that they're not just twinkles in the eyes of scientists: they're in development now, and some are already being implemented in devices that will come to the market this year, with others waiting in the wings.

About Intel

Intel (NASDAQ: INTC) is a world leader in computing innovation. The company designs and builds the essential technologies that serve as the foundation for the world's computing devices. Additional information about Intel is available at newsroom.intel.com and blogs.intel.com.

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