Computing In Unexpected Places

Most personal computer users know about Intel Inside® — the microprocessor "brain" that powers the computers that have become our essential tools for business, information, entertainment and education. Most of us aren't aware that we now actually touch hundreds of computing devices each day, when we pick up our smart phones, turn on our cars or check out at the store.

AS A LEADER IN COMPUTING INNOVATION, Intel is designing and building key technologies that are the foundation for this wide range of computing devices and applications. Working with partners in industries around the globe, Intel is creating the tools that put complex, connected data and intelligence to work in ways that are simpler, easier and almost invisible to us — even as they reshape our world, bringing us improved experiences.

So where will you find Intel?

Transportation Traffic management, accident prevention, cleaner air and energy savings will be just some of the benefits of Intelligent Transportation Systems (ITS), powered by Intel, that are now undergoing testing and development around the world. Traffic light sensors that interact only with data from their location will soon be connecting with traffic information from around the region — and your vehicle — to help you decide the best route to take to work each day. Your car will also communicate with other cars on the road to keep you proactively informed of traffic conditions. All of this is happening while you use your car's infotainment system to purchase and download a great song you hear on the radio via speech commands and to receive real-time updates about gas stations with the lowest prices. Your rear-seat passengers also benefit from a variety of entertainment options like TV, movies, games and social networking. Tired of searching for a parking place downtown? Your infotainment system will not only show you a map with available spots, but reserve a spot while you are en route.

With help from the new sensors embedded in roads, you will also be able to learn when it's time for new tires. Thanks to the processing power of Intel® processors, in only 2 milliseconds, laser-based systems can measure tread depth as a tire passes over a grate at 75 mph.

Retail Merchants can "communicate" one-to-one with customers — the ultimate in targeted advertising — using digital signage systems. These multimedia signs, using Intel® technology, deploy anonymous video analytics and face detection to tailor the messages to the age and gender of the approaching shopper. A female customer may get a message about a cosmetics sale, while a male shopper may see the latest shaving product. Intelligent analytics can also help retailers track how many people viewed the ad, determine how long they watched and gauge the connection between advertising and purchases.

Using Intel technology, in-store shoppers can use touch-screen displays in kiosks to select virtual items, view the items in 3-D detail, get more product information and

make purchases. Customers are doing their product research right in the store, reading reviews and comparing prices. They get the benefits of access to both the physical goods and online information while they are in the store, bridging the online and offline experience. In supermarkets, consumers can use similar touch screens to choose a recipe for dinner and pull up the list of ingredients — including the store map that shows the location and price of each item. All at the touch of their fingertips.

Healthcare Long hailed as a key element in the future of health care, electronic medical records systems, based on Intel technology, better connect people to information and services, enhance the quality

of care, streamline decision making and reduce cost. In China, consumers visiting health clinics can swipe their health IDs at a kiosk and check vital signs such as respiration and heart rate. The computer can compare the information against the baseline data on each patient's health and report any anomalies.

Systems that include such point-of-care terminals as well as patient monitoring systems, handheld and portable diagnostic devices, and high-end medical imaging systems can provide doctors and nurses with faster, more secure access to information. Intel-based telemedicine systems now can create live audio and video connections to deliver vital patient data, cutting the time and cost of treating patients in remote locations. In rural India, portable diagnostic tools and medical imaging devices collect clinical data and use a wireless connection to send images from a remote village directly to a pathologist or physician located many miles away. In the future, computing technology may be used to detect early onset of disease and provide alerts for people to take corrective action or be used to analyze individual genome data and compare to worldwide databases to provide real-time updates about the spread of disease and individual susceptibility.

Energy Computing networks using Intel technology are helping electric utilities remotely monitor, optimize and maintain the "smart" power grid to help improve operation efficiency and reduce capital expenditure.

Businesses are saving energy and money with intelligent systems that map power use inside their offices and plants and suggest where to look for energy savings. Setting up sensor networks now takes minutes instead of days, allowing facilities managers to focus on finding energy solutions instead of making the technology work.

Home users will be able to gain new control to conserve power and save money with intelligent home energy management systems. The Intel® Home Energy Dashboard is a proof-of-concept that demonstrates a new way to measure and control energy usage while incorporating many home management features that add comfort and convenience. Intelligence is built into the device to help consumers optimize their energy consumption in a simple and personal way without sacrificing their comfort. For example, the system will collect data throughout the day and provide suggestions to save energy by reprogramming thermostats or doing the laundry at different times of the day.

Manufacturing A new generation of wirelessly connected robot tractors controlled by a farmer sitting at his desk can revolutionize agriculture, helping growers produce healthier food and higher-yielding crops at lower cost. Sensors in fields can tell the farmer which areas need more seed or fertilizer and which need less — and the optimal time for application. On the factory floor, Intel technology is embedded in computers integrated throughout the manufacturing process. To give just one example, intelligent systems in a paper manufacturing plant can measure products running on lines at over 60 miles an hour and quickly alert managers when changes occur, so errors can be spotted and addressed.

In developing the new generation of products and applications, Intel is working with leading companies in a wide range of industries to help them understand how Intel technology can add new value to their products and services. Intel computing technologies provide the groundwork for innovation for an open community of developers around the world who are creating new products and solutions for an incredible range of applications. Cloud computing, the communications infrastructure and intelligent connected devices create the opportunity for end-to-end systems that deliver unprecedented levels of productivity. Intel is a leading voice in the ongoing conversation about how to make new generations of devices connected, managed and secure while harnessing the enormous economic potential of the networked world.

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