



Background

Unlocking the Medicine Cabinet: Technology Innovation As the Key to Improving Healthcare

The “Intel Healthcare Innovation Barometer” released in December 2013 reveals people worldwide are putting their highest hope in technology to improve health and wellness. People frequently experience the disappointments of navigating their own healthcare – whether it’s suffering through a long wait in the doctor’s office for a simple test, dealing with an ineffective medication that works for “most” people (but not them), or undergoing painful treatments for a serious disease that seemingly should already be eradicated.

From wearables and ingestibles to remote monitoring and sensor systems, new technology innovations are key to advancing healthcare that is more beneficial, accessible and convenient for people. In addition to the work of Intel’s R&D and labs team, the company’s team of ethnographers has completed people-centered research in more than 1,000 homes and 250 hospitals across 20 countries to understand the everyday lives of people on the front lines of giving and receiving care.

The following are examples of emerging technologies that may advance healthcare.

- **Wearable Technology**: Fitness and wellness enthusiasts today are pioneering the revolution for wearables – technology and devices that are worn on or embedded into the body. Wearable bracelets are combining technology innovation with fitness in new ways. With these types of devices, people can better track their heart rate patterns, motion, perspiration and skin temperature to provide very specific and personal insights into how their daily routines are affecting their health and wellness. In the future, information may be obtained through different wearable or ingestible devices that may even help predict changes in the body to prevent emergencies. The information may automatically be shared with healthcare teams for simpler management as well as anonymously pooled with other people’s data to help scientists and researchers find cures and develop more effective medications quicker.
- **Computers That Perform Surgery or Watch You Walk**: Computers are becoming smarter and more reliable, making robot-assisted surgery or physical therapy feasible. Alternatively, sensor and computing technologies that analyze a person’s gait will continue to improve in predicting future health issues for prevention.
- **Medicine Made for You**: To make advances in research, many people are showing a willingness to anonymously share their medical data. This information helps efforts to target drug development to meet the needs of the individual and not just the average person. A massive amount of computing power is needed to analyze this influx of data and change how doctors understand disease. With improvements in computing power, the time required to “crunch” the data may be reduced from years to hours.
- **A Hospital in the Home**: Today, many people constantly worry about elderly parents and grandparents who live independently and require special care. In the future, health devices

such as smart toilet sensors and prescription bottle sensors could help caregivers, family members and patients with more immediate, ongoing and in-depth information to improve care coordination and support independent living. It is anticipated that doctors visits will be fewer and further between with innovations such as in-home blood pressure, ultrasound and eye tests that will connect to smartphones and instantly send information to a doctor.

- **Bringing Doctors to the Living Room:** Today, healthcare apps or video conferences with doctors are slowly becoming more commonplace, but in the future doctors may be able to track their patients' health instantaneously through ingestible tracking devices in their bodies. Intel is working on technologies that will be incorporated into medical devices that will allow real-time video collaboration between patients, EMTs and doctors to ultimately help patients avoid unnecessary emergency room visits or find quicker solutions to health problems.
- **The Perceptive Household:** Imagine low-powered Wi-Fi radio sensors that detect activities in the home such as meal preparation, social interaction and night wandering that could allow people to live autonomously and safely.

Intel Health Solutions

Every technology solution Intel offers to medical device manufacturers – from microprocessors embedded in medical devices at the bedside to the technology in the clinic, hospital, home and cloud – will enable the care continuum over the next decade.

Intel is the “brains” behind the low-power, long-running computing that will enable the devices of tomorrow that people will use to better obtain and share their healthcare information with their wellness team. With the trends towards increased clinical mobility and cloud-based services, Intel is also addressing the privacy and security of its technology as critical priorities.

Intel also powers the servers and large computing systems that researchers may use to run large data calculations and analyses to find cures to diseases, in addition to speeding up data processing in a wide range of medical imaging and devices from MRI and CT equipment to fitness consoles. Intel is also delivering high-performance computing clusters to usher in next-generation genomics for personalized medicine.

Survey Methodology

The Intel Healthcare Innovation Barometer was conducted online by Penn Schoen Berland on behalf of Intel in Brazil, China, France, India, Indonesia, Italy, Japan and the United States from July 28 to Aug. 15, 2013. It was conducted among a representative sample of 12,000 adults ages 18 and older with a margin of error of plus or minus 0.89 percentage points. For more information on the Intel Global Innovation Barometer visit www.intel.com/newsroom/healthcare.

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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