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# Intel 'Show and Tell' Highlights 70 Projects, Offers Glimpse of Computing Future

## CTO: History Shows Research Investment Makes Big Impact on Future Innovation

MOUNTAIN VIEW, Calif.--(BUSINESS WIRE)--

At the Computer History Museum today, Intel Corporation unveiled more than 70 futuristic projects and concepts underway in its labs in the areas of the environment, healthcare, visual computing, wireless mobility and more, reflecting areas where the company is investing some of its annual $6 billion in research.

Chief Technology Officer and Senior Fellow Justin Rattner outlined dramatic ways today's research investments will impact technology coming in the next 5 years, reshaping how people interact with computers and improve the environment.

Rattner also said the company's priority of investing in research helps shape Intel's products and the industry at-large. For example, the dawn of the Intel Atom processor stemmed from a small project inside Intel's labs called "Snocone" that explored the feasibility of designing an ultra-low-power processor based on Intel architecture. Several technologies inside the company's Intel(R) vPro(TM) processor technology for business platforms came from the labs as did 1990s research that helped create the Universal Serial Bus (USB) connection to the PC for music players, keyboards, video cameras and more.

"Hundreds of researchers inside Intel, and our close work with other technology companies, scientists, universities and governments will bring dramatic change over the next 5 years," Rattner said. "The sampling of projects on display here, and the doubling of our R&D investment over the past 10 years, will speed scientific discovery, improve health care, better the environment, advance visual computing and bring a rich and wireless Internet experience from the device of your choice, anywhere in the world."

Visual Computing, Many Cores Will Change Computers

As future Intel chips scale from a few cores to many, the transition to mainstream parallel computing in which multiple computer tasks are handled simultaneously will result in an explosion of visual computing capabilities including life-like 3-D environments, immediate, real-world analysis of video feeds and more natural ways for people to interact with their devices.

Intel, together with Neusoft, demonstrated a future car application with cameras as eyes and multi-core processor-based computers as the brain. Future cars will be able to much more

accurately identify other vehicles and pedestrians that are getting too close and alert drivers or take its own safe actions to prevent accidents.

This type of visual computing requires much more computing power, and in turn poses parallel (multiple and simultaneous processor requests) programming challenges. The car demonstration took advantage of Intel's Ct programming research, a C/C++ language extension created in Intel's labs, which enabled the program to seamlessly scale from 2 to 8 cores to conduct its accident prevention work without writing additional software code or compilers.

Technology Advancing the Environment

Researchers are looking at ways to significantly improve the environment and energy efficiency of Intel-based products and systems with plans to continue improving a computer's performance but at dramatically reduced levels of power consumption and electricity needs. Intel researchers are exploring a new power management technique that could redefine the behavior and power management needs of future Intel-based computers.

The technique's technologies, collectively called " Platform Power Management," operate by continually monitoring changes in a computer's operation and intelligently reducing power, or turning off altogether, to portions of the system that are not in use such as the radio or USB ports. Early demonstrations of this work have shown power savings of more than 30 percent when a system is idle or lightly active. In the next few years, Intel researchers anticipate to extend these advancements and demonstrate reductions in power consumption of 50 percent whether the computer is idle or in heavy use. Platform power management could someday benefit the full range of Intel products, from mobile Internet devices (MIDs) all the way to high-performance servers.

Connecting People, Heath and Health Care

For nearly 10 years, Intel has focused on people-centered research that leads to innovative technologies to improve the care of aging and chronically ill individuals in the home. Personalized technologies based on this research can help address the rising costs of chronic disease and the aging population, while also allowing people to become more actively engaged in managing their health.

One example of Intel's commitment to multidisciplinary research is its involvement in the Technology Research for Independent Living (TRIL) Centre, a groundbreaking research collaboration jointly funded by Intel Corporation and the Irish government to explore technologies that will enable people of any age to live independent lives. One of the TRIL Centre's recent innovations is BioMOBIUS(TM), a low-cost research computing platform that can be easily tailored to quickly build a research tool in a simple way by those with limited technical knowledge.

Another example of Intel's research-driven solutions demonstrated today is a gait analysis system that reveals the key factors in people's gait (the manner or rate of movement on foot) and determines their risk of falling. While currently a research project, concepts like this would improve quality of life and reduce the burden on the country's health care system.

Ultra-fast Yet Shrinking Wireless World; Speech Recognition

While Intel processors and mobile devices continue to shrink, demand for continuing the performance and Internet experience worthy of a fully loaded, larger laptop or desktop computer is ever increasing. Researchers at Intel are looking at technologies that will allow small Mobile Internet Devices to be aware of and interact with their surroundings, so that the consumer's experience is not limited by the small size of the device.

Speech interfaces, for example, are particularly suitable for small mobile devices because of the limitation of the physical input and output channels. Intel researchers demonstrated a speech interface controlling the task of creating connections between two mobile devices and a wireless display with the goal of sharing resources and services. For example, consumers can speak commands in a natural manner to synch their mobile device with a large screen television to share recent photos of their children with grandparents.

For full multimedia coverage of Research@Intel Day 2008 including video, photography, blog discussions and more, visit www.intel.com/pressroom/research.

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