

IBM offers glimpse into the future (w/ Video)

December 23 2010



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The US computer giant this week released its annual "Next Five in Five" list of five innovations expected over the next five years.

Among the predictions are advances in transistors and battery technology that "will allow your devices to last about 10 times longer than they do today," IBM said.

Today's lithium-ion batteries could be replaced by batteries "that use the

air we breathe to react with energy-dense metal, eliminating a key inhibitor to longer lasting batteries," IBM said.

"If successful, the result will be a lightweight, powerful and rechargeable battery capable of powering everything from electric cars to consumer devices.

"Better yet, in some cases, batteries may disappear altogether in smaller devices," IBM said, by reducing the amount of energy per transistor to less than 0.5 volts and relying on a technique known as "energy scavenging."

"Some wrist watches use this today -- they require no winding and charge based on the movement of your arm," IBM said. "The same concept could be used to charge mobile phones for example -- just shake and dial."

Also on the cards: 3-D and holographic cameras that fit into cellphones allowing video chat with "3-D holograms of your friends in real time."

Personalized commutes are another development seen by IBM scientists, who are already at work on using new mathematical models and predictive analytics technologies to deliver the best routes for daily travel.

"Adaptive traffic systems will intuitively learn traveler patterns and behavior to provide more dynamic travel safety and route information to travelers than is available today," IBM said.

Human beings will also increasingly become "walking sensors," IBM said, providing valuable data to "fight global warming, save endangered species or track invasive plants or animals that threaten ecosystems around the world."

"In five years, sensors in your phone, your car, your wallet and even your tweets will collect data that will give scientists a real-time picture of your environment," IBM said.

"A whole class of 'citizen scientists' will emerge, using simple sensors that already exist to create massive data sets for research," it said.

Finally, IBM said, scientists will find ways to better recycle heat and energy from data centers to "do things like heat buildings in the winter and power air conditioning in the summer."

"Up to 50 percent of the energy consumed by a modern data center goes toward air cooling," IBM said. "Most of the heat is then wasted because it is just dumped into the atmosphere.

"New technologies, such as novel on-chip water-cooling systems developed by IBM, the thermal energy from a cluster of computer processors can be efficiently recycled to provide hot water for an office or houses," it said.

IBM posted a YouTube video of the five predictions:

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Citation: IBM offers glimpse into the future (w/ Video) (2010, December 23) retrieved 10 April 2024 from <https://phys.org/news/2010-12-ibm-glimpse-future-video.html>

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