

# Touting tech tools of the future

November 5 2009, By Brier Dudley

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While most people were turning their clocks backward over the weekend, Microsoft research chief Craig Mundie was moving his forward, five to 10 years into the future.

Mundie last year took over Bill Gates' job guiding long-term strategy at the world's biggest software company.

He's an erudite evangelist who travels the globe, talking up the big computing concepts Microsoft is pursuing, spreading the word to everyone from President Obama to students in China.

Last week in Redmond, Wash., Mundie put the finishing touches on a speech and set of technology demonstrations he'll be sharing in the coming year.

This annual road show begins this week with a college tour, starting at Cornell University.

He also will visit Harvard and the University of Illinois before flying back for an appearance Thursday at the University of Washington's Kane Hall.

It's a chance to remind students that Microsoft works on more than PC software, Zunes and Xboxes. The visits also help in recruiting talent and give Mundie a chance to hear what's on the minds of students and faculty.

"Mostly the goal is to show them technology as it will be -- or at least one man's view of what it will be -- and encourage them to think broadly about the role technology will play in their lives," Mundie said Friday after rehearsals and filming at Microsoft's on-campus studio.

This year's theme is solving global challenges such as [climate change](#) and the energy crisis, using the latest and coming technologies.

For instance, Mundie is demonstrating a global climate-modeling system developed by Microsoft researchers in England and at Princeton that shows how new methods of [computational analysis](#) can be combined into massive data collections such as forestry information.

He'll use the model to show how deforestation in the Amazon can affect climate in the Midwest and new tools that climate scientists can use to connect data sets and build huge computing models without writing software code.

One message is that these "science-intelligence tools of the future" will make it easier for scientists from different disciplines to work together on big, complex problems.

"A guy who is a climate scientist or a tree biologist can make a direct contribution without having to understand everything else or becoming a computer wizard in the process," Mundie said. "I tell people this is sort of doing for scientists and policymakers what Excel did for the average business guy 20 years ago."

It's not only about using dramatically more powerful computers. It's about building tools that make it easier for scientists to use those computers to analyze and visualize overwhelming amounts of data.

"Just as spreadsheets made computing more approachable for the masses

in the business environment, getting to this level of abstraction and having very high-level tools and visual-programming models will similarly allow these new kinds of computing and modeling tools to become more approachable for everybody in the sciences," Mundie said.

At the same time, building these tools is a huge challenge for programmers, he said.

"You could say these super-scale, data-driven models are almost a new branch of computer science because how you manipulate them, how you get data out of them, how you efficiently compute across them are all really interesting problems," he said.

Also being demonstrated in the talks are new ways that everyone may control computers in five to 10 years.

Mundie is traveling with a mock-up of a futuristic workstation with a display made of curved, clear glass.

It uses several systems to take input from users, including a tablet for precise inputting with a stylus.

Also on the computer are cameras for motion-tracking -- based on the Natal control system being developed for the Xbox -- and facial recognition.

To show how today's students may use such computers tomorrow, Mundie works on the design of an electricity-generating wind turbine, moving his hands around to adjust its blade and make real-time adjustments to its airflow.

Mundie bristled a bit when asked if the presentations are intended to help Microsoft compete against Google in recruiting students interested

in massive-scale computing.

"Frankly, we don't have any trouble competing for people," he said. "I would tell you against all comers, for graduate-level people in these fields. Particularly if you actually want to do research instead of just write code -- we are the preferred place compared to most every other company."

He said [Microsoft](#) has always tried to balance between pursuing advanced research and "competing for the best people we need to write the code every day."

"This is part of making sure students are continuously aware of the breadth of the activities we're doing and can distinguish between the long-cycle innovation parts and what you can go buy at Best Buy today."

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