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Polymer firms offered tech help

Ohio organizations tout computer simulations

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Superfast computer chips enabled Procter & Gamble to solve a fluttery problem on its manufacturing line producing its popular Pringles snack chips.

Ohio's \$49 billion polymer industry also needs to turn to high-powered chips computer, not potato to conduct digital modeling and simulations so it can better compete globally, speakers at a PolymerOhio daylong forum on emerging technology said Tuesday at the University of Akron.

Not that some aren't doing it already.

Goodyear Tire & Rubber Co., for instance, since 1993 has teamed with the U.S. Department of Energy's Sandia National Laboratories to use its supercomputing power and expertise, and as a result reduced the time it takes to design, test and introduce a new tire from three years to less than a year.

And MACA Plastics Inc., a small custom injection molder in southern Ohio, crunches computer data to determine the best way to use its employees and machinery.

The problem is that many companies especially small businesses lack the expertise and finances to use sophisticated digital modeling and computer simulations to solve a wide range of problems and improve productivity, forum speakers said. But organizations such as PolymerOhio of Westerville and the Ohio Supercomputer Center can help, organizers said.

"We need to convince industry that modeling and simulations does offer them benefits," said Ashok Krishnamurthy, director of research and scientific development at the Ohio Supercomputer Center in Columbus.

The Ohio polymer company executives he talks with say they are under increasing pressure from low-cost Chinese manufacturers, he said. But the Ohio companies are so busy trying to cope with daily issues that they are unable to leapfrog past those problems, he said.

It's not the cost of computing as much as the lack of expertise and cost of software that is holding companies back, Krishnamurthy said. "You guys aren't on your own. We'll help with training, and we'll provide resources."

Keynote speaker Suzy Tichenor, vice president of the nonprofit Council on Competitiveness in Washington, D.C., said high-performance computing is

essential for the United States to innovate and be competitive in the 21st century. The nonpartisan council is made up of industry executives, university presidents and labor leaders.

U.S. companies that have embraced high-performance computing say it is essential to their survival, she said.

But many companies, particularly smaller suppliers, aren't using the technology, Tichenor said.

"There is indeed a growing crack in the U.S. supply chain," she said. "That will stall companies that depend upon suppliers that do not use high-performance computing."

Companies that cannot afford the technology on their own can partner with universities and organizations such as PolymerOhio, she said.

"We think we need to out-compute to out-compete," Tichenor said.

As for the Pringles problem, Procter & Gamble in Cincinnati found several years ago that air flowing over the potato chips as they moved down a high-speed assembly line caused some to rise and fly off, leading to waste.

The company used a supercomputer to conduct air-flow simulations and modeling that led to altering the design of the chips so they stayed grounded.

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