

# ew technology boosts job mark

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id job loss rate for high-tech jobs that began in 2002 and began to slow while new jobs continue to accelerate. According to the report, titled "Cyber 2005," high-tech employment in the United States is seeing a decline in jobs lost. In 2002 approximately 612,000 tech jobs were lost, the industry lost 25,000 jobs and in 2004 25,000 jobs were gone.

The news seems grim for many workers and college graduates, the Bureau of Labor Statistics reported the last three years has pointed to the information technology industry as one of the fastest growing industries in the

country. Tech jobs like computer network administration, software engineering, support specialists, desk publishing and database administration are among the top ten professions.

High-tech employees need to be retrained with the latest technology such as Wi-Fi access, server administration and grid or cloud computing.

"The grid world is in great shape," said Dr. Dewitt Latimer, deputy CIO and chief technology officer at the University of Notre Dame. "Because even in the grid world you need a network guy."

The "grid world" calls it, is connecting together that are not in physical location. This is done through fiber optic lines that run in the ground or lines are constructed. The computer sites can work on the grid at the same time creating a computer with more speed to handle complex tasks.

University of Notre Dame



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**Bryan Baker, of the BBK Group, a South Bend communications consultant, is shown holding his model of a fiber optic cable. He uses the model when consulting area businesses about how fiber optics work and how companies can take advantage of technology.**

recently received a \$1.6 million grant from the department of energy to enhance a grid that is under construction between Notre Dame, Purdue-Calumet and Purdue - West Lafayette.

"If you have a cluster (of computer servers) at Notre Dame and a cluster at Purdue all assigned to solve a particular problem, that is the definition of a grid," Latimer said. "They have to be linked together, and that's how the big

problems get broken down to smaller problems."

There are a number of grids including one in Japan, another in Korea and one of the largest grids is across Europe. In Indiana, the largest grid is a cooperative effort between Purdue University and Indiana University called the Tera grid.

Sebastian Goasguen, senior research scientist at the Rosen Center for Advanced Computing and Tera grid site lead at Purdue University-

West Lafayette, says with a user can access a computer at Purdue and access a computer at another site at the same time.

"What if you are a scientist who needs to simulate a new drug? You are going to use a computer at Purdue, but all the data is stored at Diego and then you are going to simulate that data at Argonne National Lab in Chicago. You need sites to have a common set of data and softwares," Goasguen said.

The grid, then, connects all computer sites so the resources available are huge. And it is changing within the world of information technology (IT).

"It used to be IT was centered around the computer," said Latimer. "Today it is being pushed further out in the field where the decisions are being made and they are being made in a more timely fashion."

Bryan Baker of the South Bend based telecommunications consulting firm, says he agrees.

"You don't have corporate headquarters in one place any more, you are all over the world," Baker said. "You are taking what used to be a centralized nervous system and distributing it all over the world. You no longer do you have one big administrator over."

Because grid computing offers much more power, data analysis, whether for a scientific problem or a digital animation effect, Latimer said, the potential outcome is phenomenal.

"It reduces the amount of time it takes to make decisions and the time it takes to execute projects," Latimer said.

So how does all of this affect the high-tech job market? It does affect things. Tech jobs are being outsourced positions so companies are doing a lot of the work. But many companies still have in-house technical support. Programmers can work just about anywhere a modem with an internet connection is available.

"IT jobs are shifting away

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