

Pumping up lure of science

Whiz kid rolls out robot game as way to popularize engineering

By Jon Van
TRIBUNE STAFF WRITER

As a third-year college student, Dean Kamen invented the first successful portable insulin pump, and by age 31, he was a multimillionaire, having sold his company to Baxter Healthcare Corp.

Now, at age 42, Kamen and his engineers have developed a surprisingly simple, lightweight kidney dialysis machine for Baxter and are working on myriad projects from medical technology to helicopter controllers, including a secret one that Kamen believes will launch a new \$100 billion industry.

But all this activity is dwarfed by this effervescent engineer's overriding life goal, which is to redesign American culture itself and make engineering a national spectator sport as popular as basketball.

"The great irony is that we have this great material wealth created by technology, and other countries learned from us the value of universal education. But today most young Americans aren't interested in learning science and technology," said Kamen, in Chicago last week to be honored as Design News magazine's engineer of the year.

If engineers became cultural icons like entertainers and professional athletes, youngsters would clamor to learn science, Kamen believes.

"People blame our education system and the teachers, but that's not the problem. We have a demand problem, not a supply problem. Most kids just aren't interested in science and technology. They're interested in sports and entertainment. And why not?"

"Dad spends Monday night watching football and tells the kids to do their homework. They see what adult society values, and they emulate adults. The message they see on television is 'Life is short, so play hard.' That's great marketing, but it's the wrong message."

"Why not change that to 'Life is short, so work hard'?"

Kamen proposes making engineers and their handiwork as entertaining as sports so that young people will see them as role models as attractive as professional athletes and entertainers.

His vehicle for doing this, a non-profit organization called U.S. FIRST, has sponsored three competitions in which professional engineers and high school students team up to build robots that play ballgames that combine the agility of basketball with the combat of football.

Each team receives an identical supply of electronic switches, motors and other supplies, is told the rules for the game and is given seven weeks to devise strategy and build the robots.

The engineers and their companies do the actual robot building, relying upon the students for help with strategy and design ideas.

While game details change each year, they always involve robots gathering up balls in competition with each other and placing them in a goal area to be counted for points. Opposition robots are free to steal balls and to interfere with each other during play.

Students and adults alike cheer wildly during the frenetic play, which has been shown on cable television as well as public TV and some network programs. For the past two years, the winners have been invited to the White House.

"Last year we had 25 teams, and this year it was 50," said Kamen. "Next year's event will draw 100 teams and we'll start to have regional competitions leading to playoffs."

So far, Kamen has recruited large and medium companies, including such well-known ones as Xerox Corp., Procter & Gamble and Honeywell Inc. The corporations recruit high school teams. Next, Kamen plans to get universities to enter the fray.

"Can you imagine how many universities we have in this country that are known only for their football teams?" he said. "Universities, which are supposed to be centers for learning and research, and people know them as Razorbacks who play football..."

"I'd love this to get to the point where newspapers report scandals at universities for unfair recruiting practices to get top-notch engineering students to gain competitive advantage, just as we have now for football players."



Photo for the Tribune by Mark DeGeort
"Brain competition gives people a more realistic message than bicep competition," says Dean Kamen, who was in Chicago last week.

Kamen expects U.S. FIRST competition will attract local and national TV coverage much as football and other sports do. He envisions youngsters vying for spots on their local engineering teams, eager to make it into the national playoffs.

"Just as no one expects to become a professional basketball player by deciding to take up the sport at the age of 18, no one can do engineering without preparation from an early age," Kamen said.

"Brain competition gives people a more realistic message than bicep competition. You can aspire to be an athlete and make millions, but if you're not among a few hundred who make the grade, you don't make anything."

"Even if you don't make the top cut or even the next cut in engineering, you'll still have skills to earn a very nice living."

Kamen's effort has support from some of America's most successful business leaders.

"Dean Kamen has more energy and ideas than almost anybody I've ever met," said George Fisher, chief executive at Eastman Kodak Co. and former chief at Motorola and past chairman of the Council on Competitiveness.

"He's given generously of his energy, his money and his time to make U.S. FIRST a winner, and it is a winner for the kids and the companies who compete and will be a winner for our country."

At Procter & Gamble, Gordon Brunner, senior vice president for worldwide research and development, said that his company has tried several things from revising textbooks to mentoring in an effort to help schools, "but this is the first thing we've done that I've seen that works."

"The kids on these teams become heroes in their schools, just like the football players. Other kids look up to them. This peer acceptance is what it takes to make them want to study science."

Paul Allaire, chief executive of Xerox and chairman of the Council on Competitiveness, said that while Kamen's goal of making engineers cultural icons may seem unattainable, he just may succeed.

"Dean is both a dreamer and an incredibly driven person," said Allaire. "I would not bet against anything he puts his mind to."

Kamen has no doubts that U.S. FIRST will soon become as important in promoting engineers as public icons as the Olympic Committee is in promoting ice skaters or the National Collegiate Athletic Association is in promoting football players.

"I know I'll succeed," he said with a wry grin. "My record shows that I always succeed at whatever I do, and it always takes longer than I think it's going to."