

# VALLEY NEWS

THE NEWS SOURCE OF THE UPPER VALLEY

Published 3/4/07

VALLEY NEWS HOME

SUBSCRIBE

ADVERTISE

CONTACT US

WEB EXTRAS

VALLEY CALENDAR

CLASSIFIED ADS

EMPLOYMENT ADS

ABOUT  
THE UPPER VALLEY

COMMERCIAL PRINTING

AP WIRE

## Does America Need a Sputnik Moment?

By Sarwar A. Kashmeri

For the Valley News

My column last month drew more than its usual share of responses from readers. You may recall the column argued that, no matter which side of the Iraqi war one was on, the \$300 billion that has already been spent on it limits the ability of the federal government to do anything meaningful to reverse the serious decline of American engineering graduates.

The National Association of Manufacturing predicts a shortage of 12 million to 15 million skilled manufacturing workers by 2020 if present trends continue. Local high-technology firms, such as Hypertherm, are already strapped for qualified workers. Yet, it is these highly skilled manufacturing workers who will increasingly determine the ability of America to sustain its standard of living in a globalized world.

Absent a recognition of this problem and its successful resolution, the country is headed for serious trouble.

The e-mail responses my column ranged from taking me to task for criticizing the war (one memorable e-mail was titled: Peace At Any Price) to those that complimented me for using a nonpartisan perspective to illuminate a critical problem.

I am not a big-government fan. In fact, exactly the opposite is true. But there are times when government financing is an efficient tool to move a long-term national strategic agenda forward. President Kennedy's 1961 challenge to land an American on the moon was an example of this.

The man-on-the-moon project unleashed a decade of engineering invention and creativity matched by an explosion of excitement that propelled young adults into engineering and scientific programs. Entire technologies had to be invented from scratch (systems analysis, miniaturization, numerical analysis, robotics, etc.) and the benefits continued to flow into the economy for years through the commercial applications of these inventions.

For example, ablative materials developed to dissipate the fearsome heat of re-entry gave rise to Teflon coating that is still used for coating cooking utensils (and

ostensibly some presidents). The disk drive in Apple's iPod is a direct descendent of the computer storage drives used on the lunar lander.

“The huge crop of engineers we have had since the '70s is a direct result of that national resolve following the launch of the Soviet sputnik,” Bill Canis, vice president of the National Association of Manufacturers and executive director of its Manufacturing Institute, told me.

For those of you for whom Sputnik does not mean much, it was the world's first artificial satellite. It was launched by the Soviet Union in 1957, ushered in the space age, and jolted the American scientific and security establishment to action by revealing the science and engineering gap between the United States and the Soviets.

Kennedy's masterfully conceived challenge reversed that gap, and American technical superiority remained unchallenged, until now.

Perhaps the threat faced by American industry due to the forces generated by globalization and the diminishing attraction of technical careers is today's Sputnik moment. So, is it time for another national challenge to reverse this threat? And what form might that challenge take?

Computers dominate today's economy, and I put the question to David Kotz, professor of computer science and director of the Center of Mobile Computing at Dartmouth College.

Kotz recognizes the need to inspire America's young people to remain interested in science and engineering. “In my field ... there continues to be tremendous excitement about the applications of, and potential for, computing,” he told me. “I've noticed that every 3-year-old is a scientist, exploring his or her world. Every 5-year-old is an engineer, building contraptions to see how they work. So how do we capture and sustain that natural excitement and curiosity?” he asked.

For Kotz, today's equivalent of the man-on-the-moon challenge is clear: to bring our nation, and our world, into a more sustainable relationship with our Earth. “Science and engineering will play a fundamental role in any solution to this long-term goal. We need fundamental science -- understanding the Earth's natural processes and our affect on those processes, and the chemistry and physics involved in producing clean energy, for example. We need to develop new technologies -- efficient engines, cleaner industrial processes, methods to conserve water, and communications technology that reduces the need for travel. And we need teachers who can communicate about science and engineering so that everyone can understand the science underlying new policy and that everyone can benefit from new technologies.”

Kotz presciently warns that this challenge is global. “As scientists and engineers -- as a nation -- we have the opportunity to lead, and we must ensure that the whole world benefits. Otherwise, our world will continue to see conflict -- driven in the future by disputes over water and arable land if not by oil and other 20th-century resources.”

Kennedy's bold moon landing challenge harnessed American ingenuity, creativity and leadership for two generations. Yet its success was largely determined within the borders of the United States. What impressed me about Kotz's formulation of the next challenge is his clear understanding that today's challenges require a global frame of reference.

Making it a better world for Americans alone without consideration of other countries' needs is no longer, if it was ever, a recipe for success. Without regard to the condition of human dignity, without improving the lot of others, we cannot improve ours.

What do you think?

\*\*\*

The discussion generated by my last column was so interesting that I felt your opinions ought to be more widely available than they now are as e-mails addressed to me. To that end, you will now be able to comment on Business Climate columns online at my new public blog: [http://www.sakbizcolumn .blogspot.com](http://www.sakbizcolumn.blogspot.com). You can still write to the editor of the *Valley News* at [forum@vnews.com](mailto:forum@vnews.com).

[Back to the story index](#)

---

[Valley](#)

[News](#)

[Home](#)

[Subscribe](#)

[Advertise](#)

[Contact Us](#)

[Web Extras](#)

[Valley](#)

[Calendar](#)

[Classified](#)

[Ads](#)

[Employment](#)

[Ads The](#)

[Upper](#)

[Valley](#)

[Associated](#)

[Press](#)