



Closing the Gap

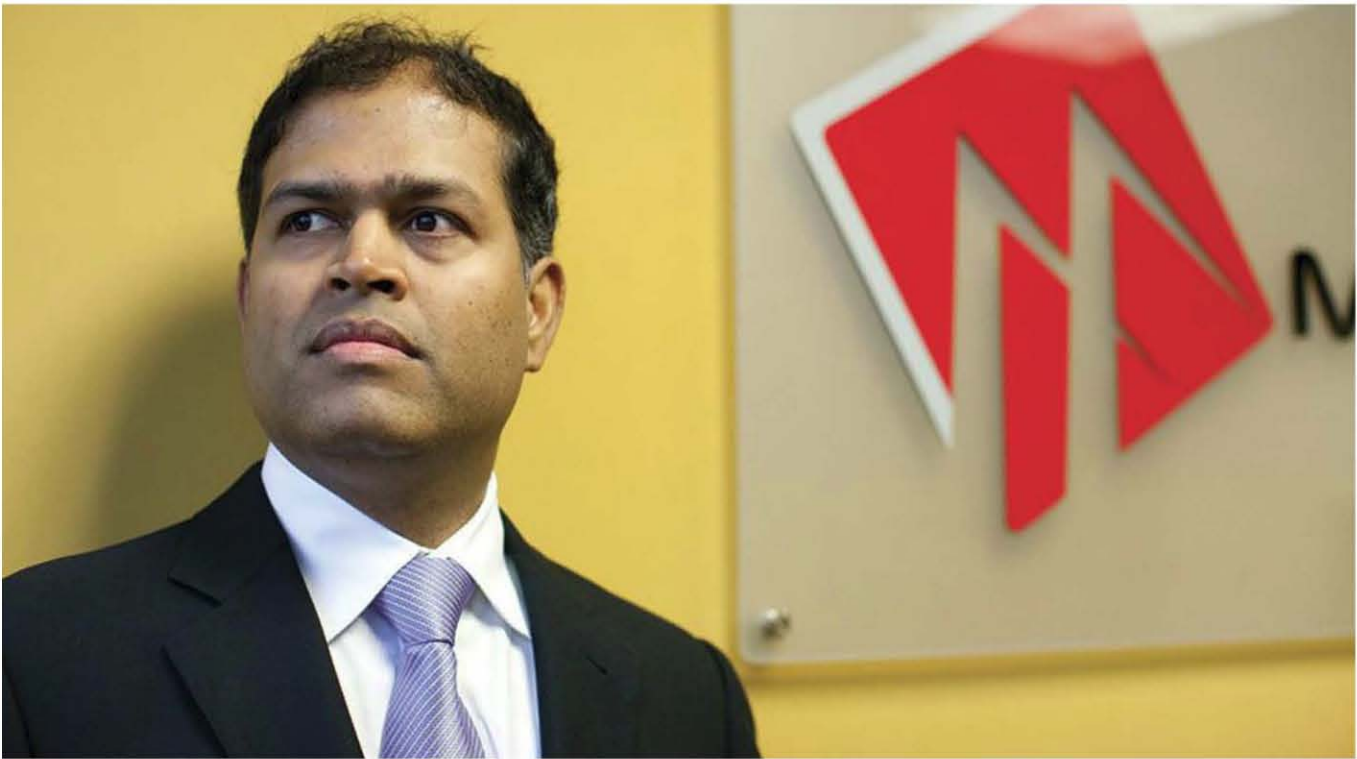
In spite of the recession, the region's workforce needs are only growing larger and more complex. Here's how the region is mobilizing to address them.

By Mark Toner

For Fairfax-based Multivision, the skills gap, and the oft-bemoaned challenges of filling the technical jobs that are the region's lifeblood, became very real in 2008. Seeking programmers for a major contract, the IT consultancy struggled to find engineers skilled in the latest and greatest technologies and platforms—even in the midst of a roiling recession. Instead, the company was inundated by resumes from unemployed IT workers with outdated skills.

"They were bright folks with exceptional backgrounds, but there was a huge gap between their skills and the skills required to perform the job," says President Srikanth Ramachandran. "They had been working on client-server or legacy systems"—some even using languages as outdated as COBOL and FORTRAN—"and they didn't have Java or Sharepoint experience."

Multivision decided to tackle the problem head-on, hiring five strong candidates with outdated skills and providing two months of full-time intensive training in the needed technology, followed



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by team-building activities and ongoing mentoring by company employees. “We focused on what was practical on a day-to-day basis, and the curriculum was designed in a way that people could figure out solutions on their own,” Ramachandran explains.

When the training program was over, Multivision hired all five workers, creating a new pipeline for its employees that continues to this day. It also found a new business opportunity by offering other companies the opportunity to hire graduates of its training program. “There are lots of smaller firms that have the capability to win projects but don’t have the capability to recruit folks at will,” Ramachandran says. With a 90 percent placement rate through its partners, the company created a profitable retraining model that has grown from one full-time trainer to six and a capacity of several hundred workers a year.

“When I started programming, all you needed to do was master one tool to get into a decent job,” Ramachandran says. “When people used to get laid off or want to switch gears, they’d pick up a book and move on to the next thing. It’s not that easy any more.”

Given the length of the recession and uncertainty about the future of Northern Virginia’s economy, it’s easy to lose sight of the combination of strategic planning, training and education that comprise a healthy workforce pipeline. But the challenges are only becoming more complex, the region’s workforce experts say, and can only be addressed by a concerted effort that spans every-

thing from second-grade science experiments to urban amenities to attract the next generation of workers from across the country and the world. “It’s a surprise to many people that we’re going to face a shortage of workers soon,” says Stephen S. Fuller, director of George Mason University’s Center for Regional Analysis.

To be sure, the recession and employers’ changing needs have taken a toll on the area’s workforce—walk-in traffic is up 200 percent at the region’s one-stop employment centers, says David Hunn, executive director of the Northern Virginia Workforce Investment Board, which administers the local public workforce system. “And we’re one of the best regional economies in the country,” he says.

These are also equally challenging times for employers—the immediate specter of sequestration, followed by more long-term questions about the federal spending that drives 40 percent of the region’s economy, have both contributed to short-term uncertainty. “The ground fog is pretty thick,” Fuller acknowledges.

But one thing is certain: the demographic shifts caused by a retiring generation will require large numbers of new workers—and sooner than you might think. In as little as six years, there will be 6 million more jobs than there are workers nationwide, according to U.S. Labor Department projections. Just two years later, a combi-

Building a Veteran Workforce

With its large number of defense contractors and outside military presence, there are probably few places more receptive to returning veterans than Northern Virginia. “For transitioning military, the job market doesn’t get any better,” says Carl Savino, president of Corporate Gray, which provides job-search resources and recruitment fairs for veterans. “The flagpoles are here.”

So, too, are the veterans — approximately 147,000 of whom live in Northern Virginia, including 11,200 recent veterans from the Afghanistan and Iraq campaigns, according to figures cited by the Northern Virginia Workforce Investment Board.

Many of the transitioning military who are immediately successful in the region’s workforce are senior officers or veteran non-commissioned officers with degrees, leadership experience, technical skills and security clearances. “For the most part, they don’t have to redefine who they are,” Savino says. “The clearance plus the skillset, especially if those skills are technical in nature, is a home run.”

However, younger veterans returning from Iraq or Afghanistan with only a high school diploma and combat experience face greater challenges, as do disabled veterans. “Most of our young veterans, which is where we have the high unemployment numbers, have never had the experience of looking for a job,” says Terrie L. Suit, Virginia’s first Secretary of Veterans Affairs and Homeland Security. “We have to help them translate their skills to what’s important to the workplace.”

To help companies learn how to create more veteran-friendly pipelines for transitioning service members, the Virginia Department of Veterans Services is piloting the Virginia Values Veterans (V3) initiative, which provides training on recruiting and retention. “While employers say they want to hire veterans, their HR policies haven’t changed,” Suit says. Companies that complete a training process in which they learn how to improve the hiring process and clearly articulate links between military skills

and professional skills will receive certification as veteran-friendly businesses, says Suit, who adds that developing clear connections with private-sector skills is a critical need.

“We need industry to spend time with that,” Suit says. “Only they know the criteria for how these skills map over.” To that end, Monster Government Solutions has developed a talent index report, available on NVTC’s industry reports page, with information on veteran skills and hiring trends and an interactive military skills translator available at www.military.com/veteran-jobs/skills-translator/.

Initiatives to help transitioning veterans are continuing to grow. The Department of Defense has improved transition planning for departing service members — calling it a “reverse boot camp.” And in June, the Northern Virginia Workforce Investment Board’s SkillSource Group subsidiary was awarded a \$1.1 million grant from the U.S. Department of Labor to bring together resources from a variety of state and local agencies to help nearly 400 veterans assess skills and receive specialized training. The J4VETS initiative “will provide more holistic support for veterans so they don’t feel like they have to get segmented services from multiple agencies,” says David Hunn, the board’s executive director. SkillSource has also partnered with Microsoft Corp’s Elevate America Veterans initiative, which helps veterans and their spouses obtain technology skills and certifications.

Among the veteran-friendly bills passed by the Virginia General Assembly this year is legislation that permits service members to count their training and experience from military service toward occupational licenses, certifications, or academic credit in the state’s public colleges and universities.

Military spouses represent another underemployed talent pool, says Savino, as they are often talented and knowledgeable, but their careers can languish due to the frequent moves required as they follow their spouses around the globe. They also often provide foundational income as their spouses transition into the workforce, Suit adds.

Many of the region’s large technology companies are well versed in recruiting veterans and have their own internal support groups and mentors. But smaller, less experienced companies also have an often-untapped resource — their own former military employees, according to Savino. “The single largest employment avenue for military is direct referrals,” he says. “A great way to have a military recruiting program is to leverage the military talent that already exists in your company.”

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CLOSING THE GAP

nation of new jobs and replacement hiring for retiring workers will create a need for nearly 650,000 new workers in Northern Virginia, according to a 2011 study by the Center for Regional Analysis. That soon-to-be-unleashed demand has enormous implications for how we think about our region's workforce.

"We've been worried about companies and investments and venture capital and innovation," says Fuller. "That may take care of itself if we have the workforce that drives investment. The shortage of workers is a national problem, and the places that have workers are going to be the prime targets for business investment." In short, Fuller says, the future economy will be "driven by workers."

"People will go where the life is good and the jobs are rewarding," Fuller adds. "The workforce will matter more—it's always mattered, but it's going to matter more in the strategic thinking of companies large and small."

For the region's technology companies, the most critical workforce needs have remained little changed in recent years—namely, industry-recognized certifications, which have become all the more valuable as government agencies call on their partners to quantify the expertise of the people supporting their projects.

"There is an ever-increasing trend to certify all billable company resources—not only employees but subcontractors alike," says Nicholas Hartigan, CEO and founder of Off-Peak Training, a Reston-based provider of certifications and training solutions. If anything, there's growing demand for secondary or tertiary specializations, such as a PMP with additional risk management, earned value or agile certifications, Hartigan adds. "Now that hundreds of thousands of professionals hold the most popular management and technology certifications, it is the specialty certifications that are the growing trend," he says.

The longstanding skills gap is a national problem, but it has a specialized twist in our region, where security clearances are often just as necessary as certifications. "It's a huge challenge for someone who might be changing careers and building skills but might be lacking a security clearance and experience," Hunn says of the kind of worker who may fall short in the region's job market—and leave technology companies empty-handed as they struggle to fill positions. To address the skills side of the equation, the workforce board's SkillSource Group subsidiary offers companies federal wage subsidies and other incentives to increase in-house training for new hires from the ranks of the long-term unemployed.

For their part, the region's companies are looking to the upcoming wave of retiring workers and planning strategically for leadership transitions, says Training Solutions Inc. President and CEO C. Michael Ferraro, a former member of NVTC's board of directors and the state workforce board. "Companies are becoming a bit more proactive to ensure the next generation of leaders is ready," he explains.

Given the changing nature of projects, more and more companies are also focusing on soft skills such as team building. "A lot of folks are now working on projects with folks they're not used to working with, as companies put a group of folks together to work with a client," Ferraro says. Given the uncertainty over the future of federal spending, "the companies we work with are holding their breath," Ferraro acknowledges. "But they're not stopping."

Nor are they focusing on just their current workforce. "Companies are trying to think ahead by moving into K-12," says Zuzana Steen of Micron Technology Inc. and co-chair of NVTC's Workforce and Education Committee.

At first glance, it might be hard to understand why Conrad Varblow spent his summer vacation working at a lab—he already has a job. But Varblow's experience will help prepare the two-thirds of the workforce of 2030 that are still in school—or not even in kindergarten yet.

Developed in partnership with Loudoun County Public Schools and area technology firms, The George Washington University's summer Teachers in Industry program "helped me to see the relevance of teamwork, group work and communication skills, and I've asked students to do much more and train them as group workers," Varblow, now a science teacher at Potomac Falls High School, says in a video describing the program.

That's exactly what technology companies want to hear, as they've often led the growing chorus arguing for changes in the way our schools teach math, science, engineering and technology—the so-called STEM fields that are critical to filling 40 percent of Northern Virginia's new jobs, according to the Center for Regional Analysis. (Add health care to professional, scientific and technical jobs, and that percentage goes up to more than half.) Too often, critics say, uninspired teaching turns kids away from STEM fields before they even start.

"Teacher lecture, rote review of SOL objectives, worksheets and cookbook labs are easier to implement in the short term. But the research shows that those approaches are less effective," says Mollianne Logerwell, director of science education for George Mason University's VISTA program, a consortium of Virginia universities, K-12 school districts and the state department of education that are refashioning science education.

Funded by a five-year, \$34 million federal Investing in Innovation (i3) grant, VISTA focuses on preparing educators to encourage the kinds of student-led problem solving in the classroom that can spark interest in STEM fields as a career (see story on p. 30). "For example, instead of having students learning about Newton's laws by listening to a lecture and doing a worksheet, students should be actively engaged in solving problems that require them to utilize those concepts—just like scientists or engineers would," Logerwell says.

Northern Virginia Community College (NOVA) is taking a similar tack with an initiative called SySTEMic Solutions, in



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The map will be published in December 2012 and distributed at an upcoming NVTC signature event. It will also appear in *Capital Business* and *The Voice of Technology*, in calendar format, and in an interactive version on the NVTC website, among other venues.

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NVTC at Work

NVTC has been at the forefront of the region's workforce issues for many years. The following are some ways it has helped address the needs of employers and students alike:

Nurturing the workforce pipeline

The Equal Footing Foundation's computer clubhouses, which allow school-age children to learn collaboratively and develop a love for science and technology, have been cited as a key component of a pipeline for underserved youth that helps lead to a high school diploma and, ultimately, success in college and careers.

Addressing immediate workplace needs

Acknowledging employers' need for industry certifications, NVTC successfully advocated the Virginia General Assembly for \$3 million over two years to expand Microsoft's IT Academy Program, which allows high school students, their parents and their teachers to prepare for and pass certification exams.

Helping veterans return to the workforce

NVTC is a participant in a gubernatorial work group to determine how best to address the needs of returning veterans and help them transition into Virginia's workforce (see sidebar on p. 17).

Bringing together business and education

NVTC's Workforce and Education Committee focuses on a wide range of workforce initiatives, including developing new training models and encouraging school-business initiatives from elementary school through college. "By including K-12, colleges and universities, businesses and nonprofits, everyone is in the room and talking at the same time," says Audrey Kremer, co-chair of the committee. "It's one of the few places where the education system and workforce can talk to each other." (For more information, visit www.nvtc.org/community/workforce.php.)

Encouraging collaboration

NVTC is joining forces with the Fairfax County Chamber of Commerce, Northern Virginia Community College and other stakeholders to assess the region's workforce needs and explore possible solutions in an effort called Workforce Futures. Such an approach mirrors a broader trend in the human resources and training community, in which groups are developing "communities of practice" where employers, colleges, K-12 systems and economic development groups are pooling resources, says Training Solutions Inc. President and CEO C. Michael Ferraro, a former member of NVTC's board of directors and the state workforce board.

which the college is working with a half-dozen technology companies and schools in Prince William County, Manassas and Manassas Park to spark students' interest in science—first in class, and then as a potential career.

The program includes robotics competitions and summer camps for students, but the real draw is having corporate partners go into classrooms as early as the second grade to do hands-on science lessons. SySTEMic Solutions works closely with schools to identify areas in which students may be struggling and then helps corporate partners devise experiments that grab students' attention, like a dry-ice cannon that makes the concept of sublimation come alive for third graders. Older students are involved in engineering challenges, such as building a Rube Goldberg-like device completely from recycled materials for a competition judged by corporate partners, and ultimately are matched with companies for internships or on-site learning opportunities in partnership with area colleges and universities. "The key ingredient here is getting corporations directly involved with the schools," says Amy Harris, NOVA's director of SySTEMic Solutions.

The big-picture benefit to companies is that the program doesn't just target the narrow slice of students who will attend the region's excellent Governor's Schools and STEM-focused science and technical academies, but rather the much larger group who may be among the first in their families to attend college. "We will have a huge need for these students in front-line positions, and we have a huge population of students with the aptitude to pursue these opportunities," Harris says.

With the support of NVTC, the General Assembly allotted a \$1 million annual appropriation to expand SySTEMic Solutions to the rest of Northern Virginia; NOVA is now seeking the required matching private funds. Doing so will allow the program to serve as a regional resource for companies interested in getting involved in K-12 education but don't know where to start. "As we go into other school divisions, we're going to become that single point of contact for corporations," Harris says.

Others are worried that the focus on science in the schools is missing a critical component—computer science. One statistic is particularly sobering: the number of U.S. high school students taking the AP Computer Science exam has declined by 60 percent in the past decade.

For that reason, Microsoft employees are volunteering for a pilot of the Technology Education and Literacy in Schools (TEALS) program in three Loudoun County high schools, with the ultimate goal of expanding it to all of the county's high schools. TEALS places high-tech professionals into classrooms to work with teachers in a team-teaching model focused on computer science.

Such programs all address a common challenge: ensuring a consistent stream of qualified workers in the years that come. "It's really important for our companies to see the long-term graying of the workforce and have their own workers in the classroom," says Ferraro.

But long-term initiatives may not address more immediate workforce needs quickly enough. That's especially true since many of the new jobs anticipated in the near future will not require a four-year college degree, but instead some sort of specialized training or certification. "There's no getting away from the need for workers to have more education beyond high school," says Hunn. "But a strategy of avoiding huge amounts of student debt in a medium-range program that allows

Another more immediate strategy for growing the workforce has tapped the experience of older unemployed workers by helping them become entrepreneurs. As part of a four-year initiative by the U.S. Department of Labor, the SkillSource Group's NO-VAGATE project helped unemployed workers 45 and older start 88 new businesses in Northern Virginia. Through an \$8 million grant, the program is now expanding to focus on encouraging entrepreneurship among workers of all ages and in other parts of the state. "That's benefitted not only those new business owners, but also other job seekers," Hunn says.



Nicholas Hartigan: "It is the specialty certifications that are the growing trend."

students to move right out into work with the ability to support their families has to be part of the equation."

Community colleges have long been a linchpin in the national solution to this challenge, and NOVA has worked with local businesses to develop training programs that allow students to quickly acquire needed skills. The school's leaders are now pushing for more paid internships, apprenticeships and cooperative education programs to ensure that students persist in their studies by seeing a tangible connection to their careers (see Q&A with NOVA President Dr. Robert Templin on p. 24).

"The goal is to have a model in place so the student knows what they're doing at the job site and tying it to what they're learning in the classroom so they don't fall through the cracks," says Harris. "That's going to be the key to getting those students through the pipeline."

Northern Virginia is unique in many ways, but its outsize employment growth has led to another looming long-term challenge—one that boils down to numbers. And at the surface, the numbers aren't pretty.

According to Fuller, the region's homegrown population base can only be counted on for about 20 percent of our future workers—and not just those who require a college education. "We have a broader problem," he says. "We can't train or educate ourselves out of this."

We've already seen huge influxes of distance commuters—as many as 300,000 workers commute into the region each day, making our region the one in the country that imports the largest percentage of its workforce from outside, according to Fuller. That number could potentially grow to 800,000 by 2030, he adds, except for

one small problem—the roads and rails are already beyond capacity. "We can't build our way out of this either," he says, calling for not just more housing in Fairfax and elsewhere, but also higher-density housing with more urban amenities to attract young workers to the region.

In short, the solution may boil down to likability. Fuller points to Arlington's Ballston corridor as a model to follow as development follows Metro's Silver Line through Tysons and to Reston. "There's going to be a big hollowing out of the country as people move from places that aren't going to be good places to live, and that will accelerate as the worker shortage grows," Fuller says. "We need different lifestyle development patterns or we're not going to compete." **nvtc**

Mark Toner is a Reston-based technology writer.