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# America's Tech Talent Pool: Make It Great

President Trump needs to push for 'intellectual infrastructure'

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A painting at the entrance to the Calais refugee camp in Calais, France depicts Apple's Steve Jobs — whose biological father was from Syria — carrying a black garbage bag and an early model of the Macintosh computer. PHOTO: MICHEL SPINGLER/AP PHOTO

Donald Trump's political acumen were on full display when he invited twelve technology executives to a [December meeting at Trump Tower](#) in New York City. As the session began, Mr. Trump proclaimed, "I am here to help you folks do well. Keep going with incredible innovation. There is nobody like you in the world."

As president, Mr. Trump must share his "do well" message with the country's 7.5 million information technology professionals who carry a legacy of "incredible innovation" — artificial intelligence (1956), the integrated circuit (1959), the internet (1969), the cellphone (1973) and the microcomputer (1975) — that made the American tech sector "great."

Looking to the future, that proposition is tenuous, at best. Why? Because some of America's tech workers are not doing "well."

Many worry their skills are out of sync with the requirements of 21st century jobs in data analytics, mobility, machine-learning and cybersecurity. Others remain leery of the “cloud,” concerned the unmitigated migration of anything-as-a-service to that platform will marginalize, or eliminate, their job in the decade ahead. If robots do not do it first.

Workers have good reason for concern. Few firms train workers [to stay ahead of technological change](#). A report featured on Careerbuilder.com claims companies [spend more on coffee](#) than worker training! Though 553,000 U.S. technology job postings remain “open” in the fall of 2016, American corporations [cut 66,821 “computer” jobs in 2016](#), according to a Challenger, Gray & Christmas jobs report. In the “short term,” a report from Manpower Group predicts 12% of employers [will continue to “decrease headcount”](#) due to digitization.

Mr. Trump was misinformed on one key issue at the December meeting. There are others like us around the world. In fact, some are even better than us. Since the early 1990s, the seminal information technology invention has been the World Wide Web, designed in Geneva, Switzerland by Sir Tim Berners-Lee, a British computer scientist. In public education, arguably a key barometer of a country’s capacity to create “incredible innovation” in the future, [America’s 15-year old students rank 63rd in the world in math skills](#) and 21st in science in a just released 2016 global assessment test.

Those are not outlier results. In 1963, American high school seniors came in last in the First International Mathematics study. That same year, College Board SAT scores began a thirteen consecutive year decline in math and verbal scores. Scores have improved little since then. A national erosion of cognitive skill that continued twenty more years before all SAT scores had to “re-centered”, or averaged. If you took the SAT test prior to 1994, calculate your 100-point higher [“re-centered”](#) score [here](#).

Another systemic challenge to the American tech industry becoming “great again” is a shrinking talent pipeline, a precipitous talent drought caused by five imposing factors: 1) the accelerated retirement of Baby Boomers and their institutional legacy knowledge, 2) the cut over to a quantifiably less-skilled Millennial generation, when compared to peers in other developed countries, as the largest component of the workforce 3) a 15-year “perception” gap (1995-2010) where young Americans eschewed careers in information technology because they thought tech jobs [would be outsourced](#) 4) The ongoing challenges, some self-inflicted, preventing the American K-12 education system from addressing a shortage of [computer science curriculums](#) and 5) a reluctance by business to embrace training and development.

If President Trump wants to make the American tech industry “great again,” the most important infrastructure project he must support is “[intellectual infrastructure](#).” I encourage Mr. Trump to proclaim this challenge to all 98,000 public schools in America: teach code in grades K-5; programming in grades 6-8 and computer science in high school. Groups like Tech Corps and Girls Who Code can help recruit an adjunct teacher force of tens of thousands of IT professionals willing to volunteer time to teach those subjects.

Mr. Trump does not have time to read books. He prefers instead to [review “passages”, “areas” and “chapters.”](#) That being the case, President Trump should read the two-page opening chapter to “A Nation at Risk,” [a critique of the U.S. education system](#) written in 1983 by The National Commission on Excellence in Education, a group appointed by T. H. Bell, then Ronald Reagan’s secretary of education. He should ask Vice President Pence to summarize in a short memo form the “Carl D. Perkins Vocational and Technical Education Act,” a law recently reauthorized by a 405-to-5 vote in the House of Representatives that seeks to improve the scope and quality of technical education. The Senate has yet to vote on the bill.

This is the future of education in America. Finally, Mr. Trump should log on to YouTube and view a six-minute video entitled “[Shift Happens, Did You Know?](#)” a film on globalization produced by 10th grade students at Arapahoe High School in Colorado in 2008.

Addressing the student body of Harvard College in September 1943, Prime Minister Winston Churchill said, “empires of the future will be empires of the mind.” Mr. Trump would be wise to commit that comment to memory. Building the “intellectual infrastructure” designed to help America’s nearly eight million tech workers “do well” is the surest strategy to make the U.S. tech industry, and all sectors of the American economy, “great again.”