PRIVATE ENTERPRISE IN AMERICAN EDUCATION

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SPECIAL REPORT 3

Odd Man Out

How Government Supports Private-Sector Innovation, Except in Education

John Bailey | October 2011

Foreword

For decades, for-profit educational provision has been merely tolerated, often grudgingly. In the world of charter schooling, for-profit providers are lambasted and sometimes prohibited. In higher education, for-profit institutions have grown rapidly, enrolling millions of nontraditional students and earning enmity, suspicion, and now investigative and regulatory actions from the federal government. When it comes to student lending, teacher quality, and school turnarounds, there is a profound preference for nonprofit or public alternatives. All of this is so familiar as to be unremarkable.

The problem is that K–12 and higher education are desperately in need of the innovative thinking and nimble adaptation that for-profits can provide in a landscape characterized by healthy markets and well-designed incentives. As critics have noted, for-profits do indeed have incentives to cut corners, aggressively pursue customers, and seek profits. But these traits are the flip side of valuable characteristics: the inclination to grow rapidly, readily tap capital and talent, maximize cost effectiveness, and accommodate customer needs. Alongside nonprofit and public providers, for-profits have a crucial role to play in meeting America's twenty-first century educational challenges cost-effectively and at scale.

However, we rarely address for-profit provision in this fashion. Most statutory and regulatory discussion focuses on how to rein in for-profit providers, largely ignoring what it would take to harness the potential of such providers while establishing the incentives and accountability measures to ensure a level, dynamic, and performance-oriented playing field.

AEI's new *Private Enterprise in American Education* series is designed to pivot away from the tendency to reflexively demonize or celebrate for-profits and instead understand what it takes for for-profits to promote quality and cost effectiveness at scale. In this third installment of the series, John Bailey of Whiteboard Advisors demonstrates how for-profit educational providers are singularly excluded from federal governmental efforts to engage private-sector actors. Bailey notes that policymakers and government officials are comfortable with for-profits routinely playing a substantial role in addressing pressing social problems in areas like health care or green energy, but not in education. "When it comes to other crucial challenges our country faces—creating a more reliable health care system, finding efficient sources of clean energy, or improving space exploration—policymakers do not ask whether they should engage for-profit companies, but how they should," Bailey writes, continuing, "It's time for education policymakers to follow suit."

Given that the federal government is seeking to play a more catalytic role in promoting school improvement, it would seem a useful time to revisit this double standard. To be clear, the point is not to advocate for federal subsidies or a manipulation of the marketplace, but instead to encourage policymakers to regard for-profits in education as they do in other sensitive domestic policy areas. As Bailey writes, "[A]n entrepreneurial education landscape is not one in which the government or foundations simply pick winners and losers. Rather, it is one in which these entities help remove barriers to entry for quality providers and think deeply about the impact their policy or philanthropic decisions will have on the broader educational marketplace and potential investors or entrepreneurs in the field." I am confident that you will find Bailey's piece as eye-opening and informative as I have. For further information on the paper, John Bailey can be reached at john@whiteboardadvisors.com. For other AEI working papers in this series, please visit www.aei.org/enterpriseined. For additional information on the activities of AEI's education policy program, please visit www.aei.org/hess or contact Jenna Schuette Talbot at jenna.talbot@aei.org.

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Executive Summary

Federal policy has traditionally supported efforts to engage the private sector in solving some of the most challenging and intractable social challenges. Policymakers use a number of tools, including grants, loans, loan guarantees, and tax credits, to not only incentivize private-sector engagement but also stimulate consumer demand for new solutions and innovations. In areas such as health care, green energy, and space exploration, the federal government has actively sought ways to engage the private sector by eliminating regulatory barriers that impede new entrepreneurs from launching ventures or providing a mix of funding and financing programs to support innovators in areas policymakers have deemed important to the country's future.

The federal government's posture, however, has been entirely different with respect to engaging the private sector in addressing one of the country's most serious challenges—improving education. Instead of involving the private sector, education policymakers have actually created policy and funding barriers that skew support to nonprofits and prevent for-profits from participating in programs aimed at improving teaching or learning. These barriers exist at nearly every level of government—local, state, and federal—further isolating education from potential innovations and discouraging entrepreneurship.

Federal Examples of Private-Sector Engagement. Most federal agencies in some way seek to engage the private sector in addressing their policy priorities, through legislation or through policy levers such as tax credits to stimulate consumer demand and accelerate new-technology adoption. NASA, for example, is pursuing a multiyear initiative that would allow private firms to compete to build and operate spacecrafts to carry astronauts into space and resupply the International Space Station. Doctors and hospitals will begin to receive incentive payments for using electronic health records (EHRs) to improve care and reduce costs, another example of how the federal government is providing direct subsidies to private entities to accomplish a public good, in this case ensuring every person in the United States has an EHR by 2014. The result has been a vibrant, competitive marketplace with well over 100 EHR providers of all sizes and types.

The Reluctant Embrace of Private Companies in Education. Private-sector companies are involved in nearly every area of K–12 education, from managing schools to developing textbooks and online-learning courses. However, federal policy toward private-sector education companies lags compared to other sectors. The most prominent concern voiced by opponents of for-profits in education is that these businesses will divert resources and tax dollars from services for students to profits for those firms. The skepticism surrounding for-profit entities in education manifests itself in laws, funding programs, and regulations. For example, the American Recovery and Reinvestment Act's Investing in Innovation competitive grant program, which was designed to accelerate the development and adoption of effective education solutions, shut out for-profits from competing for direct grants.

This treatment of for-profits in education increases investors' risk, which in turn decreases the amount of private capital available to education entrepreneurs. Private investment in cleantech, for example, surged from $1 billion in 2001 to nearly $4.5 billion in 2008 due largely to what investors saw as a more policy-friendly environment; during that same period, the education industry attracted only $560 million, most of which was in postsecondary education.

A Way Forward: Creating a Healthy, Competitive Education Ecosystem. Given the scope and urgency of improving the country's system for educating its citizens, it makes little sense to limit solutions and entrepreneurial spirit to only some groups based on their tax status. Federal policy can replicate successful models from other sectors to support innovation in education with safeguards to protect teachers, students, and parents. An entrepreneurial education landscape is not one in which the government or foundations simply pick winners and losers but, rather, one in which these entities help remove barriers to entry for quality providers and think deeply about the impact their policy or philanthropic decisions will have on the broader educational marketplace and potential investors or entrepreneurs in the field.

In a time of declining state and federal revenues, policymakers should be stimulating, not stifling, the influx of private capital to our education system. Our country can no longer afford to raise academic expectations for children while shutting out an entire group of providers who can help tackle our challenges. When it comes to other crucial challenges our country faces—creating a more reliable health care system, finding efficient sources of clean energy, or improving space exploration—policymakers do not ask *whether* they should engage for-profit companies, but *how* they should. It is time for education policymakers to follow suit.

Odd Man Out

How Government Supports Private-Sector Innovation, Except in Education

By John Bailey

Introduction

Federal policy has traditionally supported efforts to engage the private sector in solving some of the most challenging and intractable social challenges. Policymakers use a number of policy tools, including grants, loans, loan guarantees, and tax credits, to not only incentivize private-sector engagement but also stimulate consumer demand for new solutions and innovations. The underlying drive behind these policies is that public good results from attracting private-sector entrepreneurs to tackle pressing social challenges.

For example, the military and intelligence communities engage commercial partners to help improve their mission and operational capabilities. The American Recovery and Reinvestment Act of 2009 (ARRA) invested billions to foster private-sector innovation in clean technology (cleantech) and health care. One such investment was more than $20 billion in financial incentive payments to help medical practices and hospitals—public as well as private—purchase electronic health records (EHR) from dozens of for-profit technology providers. In March 2010, President Barack Obama announced more than $150 billion to support cleantech, telling CEOs, "Your country needs you to mount a historic effort to end, once and for all, our dependence on foreign oil. . . . And in this difficult endeavor, in this pursuit on which I believe our future depends, our country will support you."[1] President Obama has also proposed canceling several NASA spaceflight programs and instead calling on commercial vendors to develop spacecrafts to send astronauts into orbit.

In all of these areas, the federal government has actively sought ways to engage the private sector by stripping away regulatory barriers that impede new entrepreneurs from launching new ventures or by providing a mix of funding and financing programs to support innovators in areas policymakers have deemed important to the country's future. Policymakers understand that government alone cannot address these challenges. As a result, various federal initiatives support public-private partnerships to explore possible solutions.

The federal government's posture, however, has been entirely different with respect to engaging the private sector in addressing one of the country's most serious challenges—improving education. Instead of involving the private sector, education policymakers have actually created policy and funding barriers that skew support to nonprofits and prevent for-profit entities from participating in programs aimed at improving teaching or learning. These barriers exist at nearly every level of government—local, state, and federal—further isolating education from potential innovations and discouraging entrepreneurship. President Obama has set the ambitious goal of leading the world in college completion by 2020. To achieve this goal, Secretary of Education Arne Duncan has also challenged the country to turn around 5,000 of the country's lowest-performing schools and help every child graduate high school ready for college and work. However, the federal government has tied one hand behind its back by engaging only public and nonprofit entities. Instead of attracting private-sector innovators, many programs explicitly exclude them based not on the quality of their solution, but simply on their for-profit tax status. Congress, for example, wrote the authorizing legislation for the Investing in Innovation (i3) fund in such a way as to specifically shut out private entities from the competition. Nonprofits could receive up to $50 million in direct federal support to scale their solutions, but for-profit entities had to go through a lengthy procurement process with a school district or nonprofit entity or operate as a subcontractor for, typically, modest sums only after the grant was awarded.

To reach the president's college completion goal, we need to engage all solution providers—for-profit and nonprofit—to help create new interventions, technologies, school models, and systems. Unfortunately, to date, the tax status of for-profit education providers has been used to keep them off the playing field. This raises an important question for our country's policymakers: if the federal government can support the private sector in

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addressing climate change, improving health care, and sending astronauts into orbit, then why can it not support the private sector in addressing education challenges?

Federal Examples

Most federal agencies in some way seek to engage the private sector in addressing their policy priorities. These agencies are charged by legislation to not only identify and support innovative companies, but also use policy levers such as tax credits to stimulate consumer demand and accelerate new-technology adoption. Here are several examples from federal agencies.

If the federal government can support the private sector in addressing climate change, improving health care, and sending astronauts into orbit, then why can it not support the private sector in addressing education challenges?

NASA. In 2008, the White House Office of Science and Technology Policy established the Review of US Human Spaceflight Plans Committee and tasked it with exploring spaceflight options after the planned space shuttle program retirement in 2011.[2] The committee included a recommendation for NASA to investigate broader use of commercial spacecraft. Under this scenario, a private company would design and build the spacecraft instead of NASA, which would oversee quality assurance and safety. The review argued that this would free NASA to focus its attention and investment on developing more advanced capabilities, particularly in deep-space exploration. And in an attempt to address concerns of privatizing the space fleet, the review noted that all of NASA's spacecraft, including the space shuttle, have been built by private contractors.

In January 2010, President Obama announced his intention to adopt the review's recommendation. His 2011 budget proposed a $6 billion, multiyear initiative that would allow private firms to compete to build and operate spacecrafts to carry astronauts into space and resupply the International Space Station. The budget also requested more than $300 million in additional incentives to encourage private providers to compete for contracts to deliver commercial space cargo. The new system would limit taxpayers' financial exposure by promoting competition and inviting companies to share in the financial risk, which gives them a bigger stake in the outcomes.

Peter Diamandis, chairman & CEO of the X PRIZE Foundation, praised the initiative, saying, "The U.S. Government doesn't build your computers, nor do you fly aboard a U.S. Government owned and operated airline. Private industry routinely takes technologies pioneered by the government and turns them into cheap, reliable and robust industries. This has happened in aviation, air mail, computers, and the Internet. It's about time that it happens in space."[3] Phil McAlister, acting director of NASA's Commercial Space Flight Development group, reflected, "It's a historical truth that government goes into those areas in which there is no private-sector profit motive, and the private sector follows behind. We think the time is right to transition that part to the private sector."[4]

Both traditional aerospace companies such as Lockheed Martin and Boeing and a number of new aerospace start-ups are expected to compete. Space Exploration Technologies Corporation (SpaceX) is developing a family of launch vehicles for commercial cargo and human spaceflight. The company made history on December 8, 2010, when its Dragon capsule was sent into orbit by its Falcon 9 booster and returned to Earth for a successful recovery.

"The December 8th flight of the Falcon 9/Dragon, for us, demonstrated that the United States commercial sector is prepared to meet the needs of NASA to carry crew to orbit," said Tim Hughes, vice president and chief counsel of SpaceX, at the Annual FAA Commercial Space Transportation Conference.[5] Such a system could carry astronauts at less than half the cost of what Russia charges to send astronauts into orbit using the Soyuz spacecraft. In fact, the total cost of the Falcon 9/Dragon, including the launch, was only $800 million, mostly paid by NASA as part of a program to encourage commercial space capabilities. By contrast, NASA has spent nearly $10 billion over the last six years on the Aries I rocket and the Orion capsule and is still years and billions of dollars from even a workable prototype.[6]

The remarkable part of the SpaceX story is not its vehicles, but rather the entrepreneur behind the effort. In

1999, Elon Musk founded a company that facilitated e-commerce payments, which would eventually become PayPal. Musk then went on to found SpaceX in 2002 with the financial backing not of the typical aerospace industry backers, but instead of the cofounders of Google, Larry Page and Sergey Brin. And as with many serial entrepreneurs, Musk is involved with other start-ups, including Tesla Motors, a pioneering company that creates electric automobiles, of which he is the founder and CEO.

Musk brought a Silicon Valley mind-set to tackling the challenges of spaceflight and energy independence. But more importantly, the federal government backed his approach. Federal funding helped launch both of Musk's two most recent ventures with NASA, including a $1.6 billion contract in 2008 for twelve flights of the Falcon 9 rocket and Dragon spacecraft. Tesla also received a $465 million loan from the US Department of Energy to build a nonunion electric auto assembly plant on a former NASA base. The federal government also supported the location of the plant by providing regulatory flexibility under the Brownfields Program, which allowed Tesla to redevelop a plot of land that had formerly been contaminated. In other words, Musk's pioneering ideas were supported by government through direct subsidies, loan financing, and deregulation.

Electronic Medical Records. Health care is, perhaps, more analogous to education than any other sector. Both are fragmented systems: the country's health care system is populated with more than 5,795 hospitals, 650,000 physicians (often in small practices), and nearly 2.5 million nurses.[7] This is not too dissimilar from the nearly 15,000 school districts and more than 3.4 million teachers in education.[8] The government spends well over 1 trillion dollars in both sectors. Both have federal laws protecting individual privacy of sensitive information (HIPAA and FERPA). And each of these sectors is struggling to develop data systems that drive informed decision making, provide early warning alerts for troubling trends, and increase efficiencies while improving outcomes.

In health care, EHRs are seen as a way to not only improve coordination of care but also prevent the as many as 195,000 deaths each year that result from medical errors.[9] EHRs provide doctors with instant access to a patient's medical history, lab test results, MRI/CAT scans, prescribed medications, and allergies. Many systems also have the capability of transmitting orders electronically so that they arrive not only faster, but with fewer errors. EHRs can also strip personally identifiable information and share data with regional and national health information networks to help researchers sift through volumes of patient data in the hope of accelerating new treatments and spotting potential problematic trends and outbreaks.

Policymakers have taken an interest in EHRs after studies have shown how these systems can increase efficiencies and reduce duplicative procedures, helping reduce health care costs by as much as 20 percent.[10] And unlike many other areas of health care reform, strong bipartisan support exists for EHRs. In a 2004 speech, President George W. Bush said, "Medicine ought to be using modern technologies in order to better share information, in order to reduce medical errors, in order to reduce cost to our health care system by billions of dollars. To protect patients and improve care and reduce cost, we need a system where everyone has their own personal electronic medical record that they control and they can give a doctor when they need to."[11] In January 2009, President-Elect Obama delivered a speech with a similar call to action. "To improve the quality of our health care while lowering its cost, we will make the immediate investments necessary to ensure that, within five years, all of America's medical records are computerized," Obama said. "This will cut waste, eliminate red tape and reduce the need to repeat expensive medical tests."[12]

ARRA contains a section entitled the Health Information Technology for Economic and Clinical Health Act, which charges the US Department of Health and Human Services (HHS) with providing $20 billion of incentive payments through Medicare and Medicaid to physicians and hospitals when they not only adopt, but also "meaningfully use" EHRs to achieve improvements in care delivery.

In consultation with hospitals, physicians, EHR providers, and other experts, HHS developed a program with an escalating set of measures that phase in over the next five years based on desired health outcomes. For example, doctors will initially need to use EHRs to record patients' demographic data; height, weight, and blood pressure; medications; allergies; and smoking behavior. Other performance measures require physicians to transmit a certain percentage of their prescriptions electronically.

Attached to these measures are incentive payments. Beginning in 2011, a doctor can receive EHR incentive payments of up to $44,000 under Medicare and $63,750 under Medicaid, while hospitals can receive as much as $6 million. Early adopters will be rewarded with higher incentive payments, while late adopters will receive lower payments. These financial "carrots" end in 2015, at which

point a "stick" of financial penalties kicks in for physicians who do not meaningfully use EHRs.

This is another instance in which the federal government is providing direct subsidies to private entities to accomplish a public good, in this case ensuring every person in the United States has an EHR by 2014 to improve care and reduce costs. The eligibility for the incentive payments was not limited to just nonprofit hospitals and clinics, nor were the certification standards written so as to apply only to nonprofit EHR providers or force physicians to adopt only nonprofit or open-source solutions. The result has been a vibrant, competitive marketplace with well over 100 EHR providers of all sizes and types. Established technology titans such as Microsoft, HP, GE, and Dell have developed solutions, and entrepreneurs are also experimenting with other platforms and models, including nearly a dozen open-source options. Others are trying different business models such as Practice Fusion, which offers a free web-based EHR that is supported by advertising. Physicians wanting to opt out of the advertising can pay $100 per month. Kalorama Information forecasts the EHR market to nearly double in size over the next four years, reaching $31.9 billion in 2015.[13]

Early survey results indicate broad support for the program. More than 65 percent of hospitals and 32 percent of office-based physicians plan to enroll in the program by the end of 2012 to receive the maximum incentives, according to a survey released by the National Center for Health Statistics in January 2011.[14] The public also supports this approach, particularly its engagement of the private sector. A Greenberg Quinlan Rosner/Public Opinion Strategies poll found that 81 percent of Americans support developing public-private partnerships between government, industry, and universities to maximize US resources and expertise in medical innovation and research.[15]

Energy. The US government's philosophy toward energy policy is nearly the opposite of its approach in education. The Obama administration's summary of our country's energy challenge is that "our addiction to foreign oil and fossil fuels puts our economy, our national security and our environment at risk."[16] In response, the president has sought to engage a broad spectrum of solution providers, as well as consumers, through the use of grants, loans, and tax credits. In rallying the involvement of cleantech innovators, the president said, "As we recover from this recession, the transition to clean energy has the potential to grow our economy and create millions of jobs—but only if we accelerate that transition. Only if we seize the moment. And only if we rally together and act as one nation—workers and entrepreneurs; scientists and citizens; the public and private sectors."[17] The president's narrative around solving our country's energy crisis does not exclude for-profit enterprises; he knows that to realize his goals, he needs their involvement.

Tied to this policy are dozens of incentive programs that help support demand by consumers as well as supply from providers, including

- The Advanced Technology Vehicles Manufacturing Loan Program (ATVM): The Energy Independence and Security Act of 2007 established this program, which provides both grants and direct loans for up to 30 percent of the cost of retooling, equipping, or establishing manufacturing facilities used to produce energy-efficient vehicles or component parts. The loan program has $25 billion in loan authority, supported by a $7.5 billion appropriation to fund the credit subsidy. To qualify, automakers and eligible component manufacturers must promise to increase the fuel economy of their products by 25 percent over the average fuel economy of similar 2005 models. The Obama administration announced the first four awards, ranging from $465 million to $5.9 billion, to Ford Motor Company, Nessian North America, Tesla Motors, and Fisker Automotive. The size of these loans makes the US Department of Energy the largest investor in certain energy segments.

- Advanced Energy Research Grants: The Advanced Research Projects Agency - Energy (ARPA-E) was created in 2007 though the America COMPETES Act to apply the Defense Advanced Research Projects Agency research model for military innovations to energy technology development. It funds high-risk, high-reward research that might not otherwise be pursued because of the costs involved with projects with high risk of failure. Rather than limiting ARPA-E to traditional government research partners, Congress tasked the office to engage all sectors. ARPA-E received $400 million in funding from ARRA for grants that ranged between $500,000 and $20 million. Yet again, eligibility included not just nonprofits and universities, but also corporate researchers, so as to cast the widest net possible to identify and support the best ideas and solutions. For example, Pellion Technologies received $3.2 million to develop a rechargeable magnesium-ion battery for electric and hybrid vehicles.[18]

- Improved Energy Technology Loans: This loan guarantee program was created by the Energy Policy Act of 2005 to accelerate and scale commercial deployment of innovative clean-energy technologies in support of job creation, reducing dependency on foreign oil, improving the environment, and enhancing American competitiveness. A loan guarantee is a contractual obligation between the government (in this case, the US Department of Energy), private creditors, and a borrower that promises the federal government will cover the borrower's debt obligation if the borrower defaults. This allows the government to share some of the financial risks of projects. The program has committed nearly $25 billion to support almost two dozen projects, most of which are run by commercial entities. Solyndra received a $535 million loan guarantee—nearly as much as the *entire* US Department of Education's i3 fund—to finance construction of the first phase of a new solar manufacturing facility. The prudence of this investment is being debated in light of Solyndra's recent troubles, but the federal government's willingness to engage private-sector companies is unquestioned.

- Hydrogen Fuel Excise Tax Credit: A major challenge in the commercialization and adoption of new alternative energy-based vehicles is the cost of building out the infrastructure for fuels such as hydrogen. To provide incentives for both the adoption of these cars and the building out of the infrastructure, the federal government offers a tax credit of fifty cents per gallon for hydrogen that is sold for use or used as a fuel to operate a motor vehicle.

- Clean School Bus USA: This public-private partnership focuses on reducing children's exposure to harmful diesel exhaust by limiting school bus idling, implementing emission-reduction technologies, improving route logistics, and switching to clean-fuel buses. Grants are available to nonprofits, for-profits, and school districts for projects that advance these goals.

Using Intermediaries to Forge Public-Private Partnerships

In addition to this slew of direct support from agencies to for-profit entities to advance their goals, several federal agencies have seen the need to unleash the full power of this sector through even more creative arrangements. To do so, they have begun using intermediaries to engage the private sector without the bureaucratic red tape and limitations that restrict the agencies' ability to engage in even more flexible funding approaches. Often, these intermediaries attract individuals with necessary expertise who might not otherwise join a government agency. They are also often free from many of the constraints imposed on public agencies, allowing them to be more flexible in their investment approaches.

Private enterprises have a greater incentive to invest in R&D as they seek ways to provide better services, different solutions, or lower costs.

In-Q-Tel. In-Q-Tel is a not-for-profit venture capital firm that invests in high-tech companies for the sole purpose of keeping the Central Intelligence Agency (CIA) equipped with the latest technology for delivering enhanced intelligence capability. In the 1990s, the pace of commercial information technology innovation was outpacing the ability of the intelligence community to access and adopt the latest innovations ahead of the private sector. In 1998, the director of the CIA engaged former Lockheed Martin CEO Norman Augustine (who would later head the commission that produced the National Academies report *Rising above the Gathering Storm*, which highlighted the need for science, technology, engineering, and mathematics reform) to create and launch In-Q-Tel.

In-Q-Tel's mission is "to exploit and develop new and emerging information technologies and pursue R&D [research and development] that produce innovative solutions to the most difficult problems facing the CIA and Intelligence Community."[19] The company works with the intelligence community to identify critical technology needs and engages with entrepreneurs, companies, and researchers to deliver solutions and capabilities.

From this needs analysis, In-Q-Tel develops an investment blueprint using $37 million of federal funding appropriated by Congress each year through the CIA. A typical investment can range from $500,000 to $2 million over a six- to twenty-four-month period. The rationale is that any investment of less than six months will essentially produce a solution that could just be purchased.

Any investment of more than five years is essentially just basic research. All proceeds from investments are reinvested back into In-Q-Tel operations, technologies, and programs to further benefit the CIA.

In-Q-Tel is similar in some respects to traditional government R&D organizations like the Institute of Education Sciences or the National Institute of Standards and Technology in that it has only one primary customer—the CIA. The report of the independent panel that reviewed this joint venture identifies several advantages resulting from In-Q-Tel's status as a private entity:

- It can make equity investments in private entities;
- It has a flexible deal structure modeled after commercial investment vehicles;
- It has fewer bureaucratic constraints, both in terms of civil-service employee limitations and administrative red tape often attached to government grants and contracts;
- It can obligate funds in multiyear increments; and
- It is not required to comply with Federal Acquisition Regulations requirements.[20]

This flexibility has produced results. Since 1999, In-Q-Tel has reviewed more than 7,500 business proposals, engaged more than 4,500 technology companies, invested in more than 160 companies, and delivered more than 300 technologies solutions to the intelligence community. One of In-Q-Tel's more high-profile successes was its investment in Keyhole, which provided satellite-mapping capabilities and, after acquisition by Google, ultimately became Google Earth.

New Markets Tax Credit. The New Markets Tax Credit (NMTC) program is administered by the Treasury Department's Community Development Financial Institutions (CDFI) Fund but through private-sector intermediaries. The program was created in December 2000 to address the persistent challenge of revitalizing impoverished, low-income communities that often lack access to credit and capital. The program provides tax incentives to attract private-sector, market-driven investments in businesses, economic development, and real-estate development projects located in low-income urban and rural communities. Former Treasury official Cliff Kellogg said the program is intended to expand "the range of what's 'investible' by providing slightly more return when investors are balancing the risk-return tradeoff."[21] In other words, the NMTC encourages investors to "take a second look" on investment opportunities that they might otherwise pass.

The program works by allowing individual and corporate taxpayers to reduce their tax liability by 39 percent of the amount of the investment over a seven-year period in exchange for providing capital to vehicles known as community development entities (CDEs), which in turn invest in low-income communities. Investors typically use two investment structures: direct investments to CDEs and tiered investments, which can involve equity investments or leveraged investments (an investment structure where a portion of the investment amount originates from debt and a portion from equity).

The CDE plays the role of intermediary in allocating federal investment. A CDE can be either a for-profit or nonprofit entity, as long as it can demonstrate a primary mission of serving—or providing investment capital for—low-income communities. The CDE has one year to place most of the investments into qualified low-income community investments, which typically are

- Loans to, or investments in, qualifying businesses or real-estate projects;
- Loans to, or investments in, other CDEs;
- The purchase of loans originated by other CDEs; and
- Counseling to low-income community businesses.

To date, the CDFI Fund has made 386 awards totaling $21 billion, through six different allocation rounds. More than $13.7 billion of private funds have gone into CDEs, which represents more than 70 percent of the NMTC allocation authority awarded to CDEs through 2008. Demand for NMTC allocations far exceeds availability. To date, CDEs have requested a total of $202 billion in allocation authority since 2003, a demand of more than seven times credit availability. According to the US Treasury Department, for every $1 in credited taxes under the NMTC program, more than $14 is being invested in community projects.[22]

The program has enjoyed bipartisan support, including from both the George W. Bush and Clinton administrations. The NMTC program was also named as one of the Top 50 Government Innovations as part of the Kennedy

School's 2009 Innovations in American Government Awards. A Government Accountability Office review concluded that "investors indicated that they have increased their investment budgets in low-income communities as a result of the credit, and GAO's analysis indicates that businesses may be shifting investment funds from other types of assets to invest in the NMTC."[23]

The program has also been a lifeline to the charter school community by attracting more private capital to help finance charter facilities. For example, the Charter School Development Corporation, led by City First, has provided financing to a number of Washington, DC, charter schools, including $21 million for the E. L. Haynes Public Charter School. Ánimo Watts Charter High School in South Central Los Angeles, which serves 400 students, received a $9.1 million investment from the program.

NMTC could serve as a model for attracting investments into the education community by using a similar framework but adjusting the terms and eligibility. For example, instead of just providing financing to entrepreneurs who start small businesses in low-income communities, it can offer financing to education entrepreneurs who are providing services to low-income, low-performing schools, or charter schools.

The Case for Greater Private-Sector Involvement

Advocates for greater federal policy support for private-sector entities argue that they need such assistance to help accelerate new-technology adoption, make riskier investments more attractive to the private sector, attract entrepreneurs to address urgent social challenges, or scale innovations that face entrenched incumbents. They use the scope of the problem, such as climate change, or the urgency of the challenge, such as better equipping the intelligence community with new capabilities, to underscore the need for public support of these private ventures.

For example, advocates argued that the ATVM program was needed because of the large amount of capital required to retool facilities or bring new energy-efficient cars to market. These are capital-intensive businesses facing entrenched competition from incumbents, which has created numerous barriers to new entrants introducing alternatives. Fuel-cell innovator Bloom Energy has required $250 million in capital thus far, ten times as much as other start-up ventures, and is still approximately two years away from an initial public offering. In comparison, it took Google only $25 million of venture capital investment to get to initial public offering.

Entrepreneurs entering the education sector face the similar challenge of requiring substantial capital to scale their solutions. The regulatory environment, particularly with its lengthy procurement processes, can require providers to spend months devoting substantial resources in staff time and funding to responding to complicated request for proposals, many of which will not result in a sale. Many incumbents, particularly large publishers, have armies of sales staff and long histories with district personnel, which makes it even more difficult for disruptors to secure opportunities.

> Given the scope and urgency of improving the country's system for educating its citizens, it makes little sense to limit solutions and entrepreneurial spirit to only some groups based on their tax status.

Proponents of greater private-sector involvement also argue that companies can achieve greater efficiencies, leading to lower costs for the government agency and taxpayers. Private-sector entities are freed from many of the bureaucratic restrictions and processes that can bog down even the best-intentioned government agencies. This flexibility not only allows innovators to be more nimble, but also allows government agencies to focus on their core competencies. The SpaceX story exemplifies this not only in terms of significant cost savings, but also in the reframing of a government entity's mission to support private-sector innovation through longer-term research while focusing on near-term safety and quality with its contractor partners.

The pay-for-performance systems NASA is using can also help save funds by paying for only the achievement of verifiable results. This stands in contrast to typical government programs that often run on both costs and schedule. A 2002 study looked at 258 government transportation projects in the United States and around the world and found that 90 percent of the projects

examined had cost overruns, with an average overrun of 28 percent. The study concluded that many public officials have sought to ignore, hide, or otherwise leave out important cost and risk information to make total costs appear lower and gain approval.[24]

Private enterprises also have a greater incentive to invest in R&D as they seek ways to provide better services, different solutions, or lower costs. Public-sector investment in education R&D, although difficult to estimate, is about .03 percent of the overall public-sector budget, while private-sector firms often spend, on average, 100 times that percentage.[25] Rebecca Henderson and Richard Newell researched innovation trends in other sectors and the public policy's contribution in accelerating those innovations. They found:

> In every one of the sectors explored here, rapidly growing demand triggered both extensive private sector investment and extensive diffusion of new technology. . . . Accelerating innovation requires increasing both the supply of and the demand for new technologies. Beyond supply and demand, however, the theme that emerges most clearly from our histories is the important role that public policy has played in fostering vigorous competition and "markets for technology" in each industry and the centrally important role that this competition has played in accelerating innovation. Here again our histories suggest that there is no single policy or set of policies that is always appropriate, but that policy design must be actively tailored to the structure of the industry and the particular circumstances of the market. They focus attention on three policy instruments in particular: antitrust, intellectual property and support for public open standards.[26]

In other words, public policy helped create a supportive regulatory and financial ecosystem that encouraged, rewarded, and protected private-sector innovation and R&D.

More recently, calls have come from the business community not for direct federal subsidies, but also for the government to simply create a regulatory environment that allows companies and solutions to compete fairly with one another and other providers. These regulatory policies range from telecommunications to trade, where even minor changes in regulations can result in favoring one industry, company, or country over another. Entrepreneurial activity does not occur in a vacuum. Government regulatory policy can unleash innovation just by creating an environment in which new ventures can thrive and the playing field is level.

Cautions for Greater Private-Sector Involvement

All federal programs are proposed with best intentions that often fall short during implementation, particularly as unintended consequences emerge. For example, while many of the US Department of Energy programs are intended to stimulate innovation, there is growing concern that the programs distort the market in such a way as to discourage innovation and risk-taking.

Many government "innovation" programs often place government in the position of picking winners and losers. Winners are usually picked through bureaucratic processes rather than by new idea–chasing venture capitalists whose technical and investor expertise helps allocate scarce capital to the most promising ventures. In these cases, politics often influence decisions, rather than rigorous analysis and due diligence.

For example, members of Congress wanted ATVM loans to be used as part of a bailout of US auto manufacturers when the Obama administration deemed the TARP program an inappropriate vehicle for such investments. Instead of supporting innovation, ATVM was being used to support the status quo. Another example is Solyndra, the solar energy company that received a loan guarantee and then filed for bankruptcy in September 2011. Republican lawmakers had criticized the loan guarantee, questioning whether Solyndra deserved the assistance. The US Energy Department tried to negotiate with Solyndra investors to provide bridge financing to give the company time to find a new source of capital, but the company was unable to secure any additional capital. At best, this is an example of the government's picking the wrong winner. At worst, depending on the outcomes of the investigations, it illustrates how these policy levers can used to reward political allies and donors.

Darryl Siry, the former chief marketing officer of Tesla Motors, noted in *Wired* magazine that venture capitalists are accounting for several factors when valuing a company, including how much more capital the company will need to get to market or another investment transaction that would provide a return for the venture capitalist.[27] US Department of Energy loans and loan guarantees have amounted to free leverage for the investor's bet, with little to no downside. The upside is multiplied and the downside remains the same because the most the equity investor can lose is the original investment. As a result, the agency's programs have distorted the capital markets, as venture capital firms now prefer to back a company that has received a loan or loan

guarantee, rather than a company that has not. In other words, the Department of Energy is influencing private-sector decisions and selections—perhaps unintentionally, but nonetheless, the result is still the same. The Department of Energy's loan-guarantee program has both supporters and detractors no matter where it focuses investments. If it backs untested projects to provide financing where private investment is lacking, it gets criticized for putting taxpayer funds at risk. If the program backs established and proven technologies, it is criticized for competing with banks and distorting the marketplace.

This market distortion will have a stifling effect on innovation as private capital chases fewer deals and companies that do not have government backing have a harder time attracting private capital. A survey of cleantech executives conducted in April 2010 by Deloitte confirmed that this concern was widespread. The study found that 73 percent of respondents were concerned that the government was influencing the competitive landscape of the industry with the stimulus funding.[28]

These concerns illustrate the challenges of establishing government programs that support private-sector entities. However, the point of debate for many of these sectors is not whether the government should help private enterprises but rather which policy levers and tools best support private enterprises. Concerns about market distortion are legitimate, but excluding private-sector entities—as federal education policy has done—also creates significant distortions in a market. Any federal program will have its strengths and weaknesses, and some should be discontinued because of lack of effectiveness. But these concerns do not outweigh the benefits of having a thriving marketplace of private-sector entrepreneurs tackling social challenges, particularly in education.

The Reluctant Embrace of Private Companies in Education

Private-sector companies are involved in nearly every area of K–12 education, from managing schools to developing textbooks and online learning courses. However, federal policy toward private-sector education companies lags compared to other sectors. As a result, education remains one of the only public policy areas where private companies have difficulty entering and thriving. Although outsourcing services like transportation to a private company is relatively uncontroversial, turning over school management to a service provider is still seen as taboo. Engaging a nonprofit professional development provider is viewed with less suspicion than if the district entered into a similar arrangement with a for-profit provider.

We rarely see a government leader embrace private companies the way officials do in other sectors. For example, NASA Administrator Charles Bolden made an appearance at the FAA conference focused on space commercialization where he remarked, "We cannot survive without you. I can't tell you any stronger. We are big fans of commercial, we are huge fans of commercial space."[29] It would be difficult to imagine a secretary of education making similar remarks to for-profit professional development providers, charter school operators, or online providers.

An inherent apprehension about the motivation and behavior of profit-seeking businesses in education remains. The most prominent concern voiced by opponents of for-profits in education is that these businesses will divert resources and tax dollars from services for students to profits for the firm. The skepticism surrounding for-profit entities in education manifests itself in laws, funding programs, and regulations. As a result, investors' risk is increased, which in turn decreases the amount of private capital that would otherwise be available to fund and scale education entrepreneurs. For example, private investment in cleantech surged from $1 billion in 2001 to nearly $4.5 billion in 2008 due largely to what investors saw as a more policy-friendly environment. However, during that same period, the education industry attracted only $560 million, most of which was in postsecondary education. Joseph Keeney and Daniel Pianko observed, "Huge flows of private capital fund promising companies through the formal venture capital market and informal angel investment market every year, but very few of those dollars flow to the K–12 sector because of its limited potential for radical innovation."[30] And Silicon Valley blogger Sarah Lacy noted, "I've spoken to many venture capitalists who say they'd love to use technology to change education, but few think they can make money at it."[31] One reason is that somehow it is acceptable to make a profit by reducing greenhouse emissions but not by reducing dropouts.

Whereas other federal policy areas seek to attract private-sector entities to bring their entrepreneurial thinking to various social issues, federal education policy often establishes barriers that result in discouraging private-sector involvement. ARRA authorized the $650 million i3 fund to "accelerate the creation of an education sector that supports the rapid development and adoption of

effective solutions." The competitive grant competition was structured to provide grants that expand the implementation of, and investment in, innovative and evidence-based practices, programs, and strategies. Secretary Duncan said, "We're looking to drive reform, reward excellence and dramatically improve our nation's schools."[32]

There was a caveat, however. Instead of casting a wide net to identify successful solution providers, Congress limited eligibility to only local education agencies (LEAs) or partnerships between a nonprofit organization and one or more LEAs. The US Department of Education further narrowed the definition by also restricting the eligibility of subgrants to only LEAs and nonprofits. This essentially tilted the competition toward nonprofit entities, even if for-profit entities provided similar services. For example, ETS and Pearson are direct competitors in assessment design, development, and implementation. ETS, however, could directly apply for i3 funding or form a partnership with an LEA because of its nonprofit status, whereas Pearson would need to go through a competitive procurement with an LEA after the grant was funded.

Another example is the Obama administration's regulations related to for-profit higher education institutions. These for-profit colleges play an important role in our diverse system of higher education by offering flexible course schedules and pioneering the use of online technologies to meet the unique needs of working adults, single parents, and other nontraditional students. Critics of for-profit colleges, however, are quick to point out that while they account for only 10 percent of students enrolled in higher education, these students receive 23 percent of federal student loans and grants and are responsible for 40 percent of all student loan defaults.

The administration's regulations evaluate programs essentially based on the "gainful employment" of students through a series of tests and formulas to ensure that the debt a student assumes is reasonable relative to how much he or she can expect to earn upon graduation. Protecting students and taxpayers from low-quality programs and unwieldy debt burdens should be a priority, but these are issues we face across the entire system of higher education. Many community colleges struggle with low completion rates, yet are exempt from the administration's proposed regulation. Even Harvard Medical School would fail to meet the proposed loan repayment standard. If the administration sincerely wanted to protect students and taxpayers, then it would apply the gainful employment test to all institutional programs, regardless of their tax status.

A Way Forward: Creating a Healthy, Competitive Education Ecosystem

Given the scope and urgency of improving the country's system for educating its citizens, it makes little sense to limit solutions and entrepreneurial spirit to only some groups based on their tax status. Federal policy can replicate successful models used in other sectors to support innovation in education with safeguards to protect teachers, students, and parents.

Adopting this approach would require thinking of education less as an institutional system and more as an ecosystem of various providers and consumers characterized by a welcoming policy environment to all innovators, shared risk to help attract investors to incubate promising ventures, supportive funding and regulations that allow innovations to grow, and incentives that reward quality and results (which can also be used as part of transparent reporting initiatives to provide increased consumer protections). To be clear, an entrepreneurial education landscape is not one in which the government or foundations simply pick winners and losers. Rather, it is one in which these entities help remove barriers to entry for quality providers and think deeply about the impact their policy or philanthropic decisions will have on the broader educational marketplace and potential investors or entrepreneurs in the field. Absent that, venture capitalists and investors will simply seek out other sectors that have more supportive policy and regulatory environments for their investments. At a time of declining state and federal revenues, policymakers should be stimulating, not stifling, the influx of private capital to our education system.

To be sure, it is easy for the government to overstep its bounds and squander its investments. But learning from past efforts in other sectors can help inform the design of policies that promote more entrepreneurial activity in education. Education would benefit from adopting private-sector engagement strategies used by agencies such as NASA, HHS, and Energy. At a minimum, this would entail expressing a clear policy of intent toward attracting new entrants and entrepreneurs who are thinking of creative ways to solve new problems or address stubborn ones that have perplexed those in our education system. This would not preclude other experts from nonprofits and universities from working on solutions; it would simply bring more of our best and brightest to solving some of our most difficult education challenges. It would also attract talent and promote labor mobility within the education sector by encouraging entrepreneurs to take their experiences and apply them to

new ventures and endeavors. Education's challenges are unique in some ways but remarkably similar in others to the challenge of scaling health reform across our fragmented health care delivery system.

Finally, a crucial part of creating a thriving ecosystem is for government to strive to provide a level playing field for providers. The Obama administration used the Race to the Top competition to encourage states to create level playing fields for charter operators. As a result, states passed laws eliminating caps on charters or providing equitable funding between public schools and charters. A similar approach is needed to reduce barriers to not just for-profit providers, but also new models of education such as full-time virtual and blended models. Waivers are needed for models that want to measure student achievement based on competency, not seat time. Only with this regulatory flexibility can innovators truly enter markets and disrupt a system of entrenched incumbents.

Our country can no longer afford to raise academic expectations for children while simultaneously shutting out an entire group of providers who can help tackle our challenges. Ultimately, our public policy should urgently seek to better educate our children by any means necessary. When it comes to other crucial challenges our country faces—creating a more reliable health care system, finding efficient sources of clean energy, or improving space exploration—policymakers do not ask whether they should engage for-profit companies, but how they should. It is time for education policymakers to follow suit. We need to embrace a quality revolution that focuses solely on holding organizations accountable and responsible for improving student outcomes. Those that do should be rewarded and scaled so that we can ensure that students receive the education that they deserve using the entrepreneurial spirit and genius that have made America so great.

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