PRIVATE CAPITAL AND PUBLIC EDUCATION: TOWARD QUALITY AT SCALE

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AEI Future of American Education Project

Working Paper 2009-02

Foreword

With the federal government in the midst of an unprecedented $110 billion infusion of education funds through the 2009 American Recovery and Reinvestment Act, and with the Bill & Melinda Gates Foundation launching a substantial 2008 retooling of its strategy, the opportunity to use dollars to drive change has taken on a heightened salience. How can we help ensure that these investments deliver on the promised reforms in the years to come? And can we primarily rely on public and philanthropic dollars to drive the requisite transformation?

What will allow information and communication technologies to finally transform education the way they have revolutionized other sectors? In the enclosed working paper, Tom Vander Ark, managing partner of Revolution Learning and former executive director of education for the Bill & Melinda Gates Foundation, sketches a vision depicting some of the ways in which technology could revolutionize the traditional school environment—with static, printed texts replaced by adaptive, digital learning and virtual learning communities supplementing seat time.

He argues that any such transformation, however, is dependent upon investment and the incentives motivating public, philanthropic, and private funding. He notes that while public dollars are aimed at promoting equity and serving the neediest populations, the government has invested far too little in research and development while maintaining an "ossified bureaucracy" unable to adapt to changing needs. And, while young foundations have pressed non-profits to emulate for-profit business models, non-profits nonetheless have modest incentives to expand and often have great difficulty finding the capital necessary to do so. In short, he sees a dramatic increase in private, for-profit investment as an essential driver of real transformation.

Vander Ark emphasizes the importance of for-profit education companies that can attract venture capital and that are better equipped to sustain and grow through profits and private equity. "Private investment will not fix the problems with education," he writes, "but education will not be fixed without it." These companies can bring new services to education—including supplemental online tutoring, digital curricula, adaptive assessments, and school management.

Vander Ark believes that public-private partnerships can be harnessed to pursue both social impact and sustainable profits. But doing so requires reducing statutory and bureaucratic barriers while altering incentives so that such private partnerships can play more than a marginal role. I hope you find his analysis of these issues as timely and thought-provoking as I have.

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—Frederick M. Hess
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Executive Summary

Education remains one of the few sectors that information and communication technologies have not transformed. There has been virtually no productivity improvement in U.S. schools, despite a doubling of per-pupil funding over the past fifteen years. While the public delivery system is inflexible and bureaucratic and provides an inadequate impetus for performance and improvement, non-profit organizations have weak incentives and limited ability to aggregate capital for research and development or scaled impact. In contrast, for-profit enterprises may have greater ability to attract talent and capital, incentives to achieve scaled impact, and the ability to utilize multiple business strategies.

Private capital and for-profit enterprises will play a vital role in creating tools that increase learning, staffing, and facilities productivity; developing formats and services that leverage these tools; managing high quality, cost effective education networks; and leading the sector transition from batch processing—in which learning is organized around classes of students of the same age, who progress through material at the same pace—to personalized, digital, learning services.

Limitations on Private Investment

At least until recently, elementary and secondary education in the United States has been a local affair. Since the 1970s, states and the federal government have played an increasingly important policy and financial role. This trend accelerated with the adoption of state standards and accountability systems in the 1990s and the stronger federal accountability guidelines incorporated into the 2001 reauthorization of the Elementary and Secondary Education Act, No Child Left Behind (NCLB). What has evolved is a complex three-tiered bureaucracy—a system that still fails to adequately prepare most students for college and careers. Low-income students, in particular, are poorly served despite the lofty expectations embodied in NCLB and the doubling of per-pupil spending in the last two decades.[1]

The root causes of the lack of achievement and productivity gains in the U.S. are complex. However, four key issues stand out:

1. *Obsolete design.* Students are grouped by age, despite vast differences in achievement, and marched through a sequential print curriculum in fixed blocks of time. In high school, students select disparate courses of varying degrees of difficulty with minimal adult guidance or real world connection, leaving most unprepared for post-secondary education. Higher education entrance requirements, outdated testing regimes, and widely held traditions have locked in place a system that prioritizes seat time and credit accumulation over in-depth and applied learning.

2. *Ineffective governance.* Three tiers of misaligned governance are enmeshed with employee group contracts and funding that is typically tied to local property taxes—a situation that has become disastrous and intractable in urban areas. Tenure and protection rather than performance improvement are standards of employment.

3. *Cultural complacency.* Educational success is a high family and community priority in top-performing countries. Students in Asian countries generally work harder[2] and attend school for more hours and days than students in the U.S., who have some of the shortest school days and years in the developed world.[3] Most Americans remain satisfied with their local public schools despite evidence of their failure.[4]

4. *Limited capital investment.* A fraction of one percent of total government expenditures in education is spent on research and development. Non-profit organizations supporting education find it difficult to attract scaling capital (i.e., unrestricted funds that support the

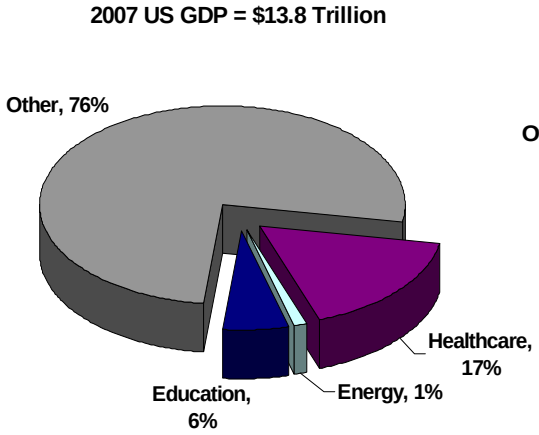
organization's long-term strategic plan rather than a specific project). Publishers are trapped in the Innovator's Dilemma and find it difficult to justify investment in innovative new products that compete with established brands.[5] Entrepreneurs who recognize the need to create a system that better serves the needs of individual learners find there are simply more barriers than incentives.

Emerging economies including India, China, and Brazil have expanded access to primary education and, with the assistance of direct foreign investment, are expanding access to higher education. While access to quality secondary education remains an enormous challenge, frustration with the inadequate public system has led to a flourishing private school sector even in the poorest parts of India and Africa.[6]

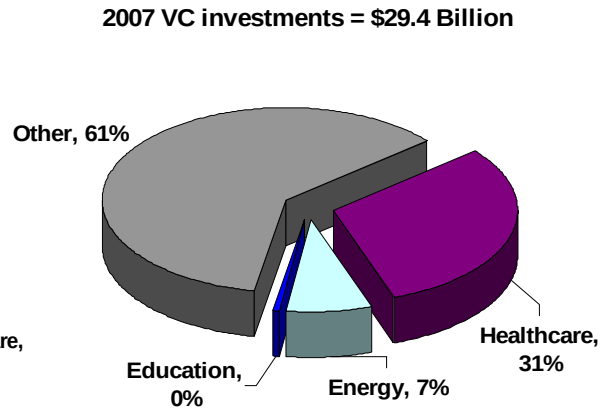
Yet, despite the importance of capital in providing access to quality education around the world, public delivery systems in the United States continue to inhibit the flow of capital to similar opportunities. The United States relies on a web of public policy rather than market incentives to allocate resources. Shielded from incentives and market pressures, public delivery systems evolve at the intersection of diffused public interests and the focused interests of bargaining units—the later gaining control especially in concentrated urban areas. These limitations and weak historical returns have dampened private investment compared to other sectors, including much smaller sectors such as alternative energy. (See Figure 1.)

Figure 1: Private Investment in Education, Health Care, and Alternative Energy

Education is about a $900 billion market in the US alone…



…yet receives virtually no VC investment



By contrast, alternative energy receives a disproportionate amount of VC investment, especially in light of its much more speculative nature in comparison to education.

Sources include: World Economic Outlook database, Centers for Medicare & Medicaid Services, U.S. Department of Energy, UN Human Development report, PriceWaterhouseCoopers "Money Tree Report, https://www.pwcmoneytree.com/MTPublic/ns/moneytree/filesource/exhibits/Q3%202008%20MoneyTree%20Report_final.pdf (Accessed December 26, 2008).

Philanthropic and private capital have the potential to offset some of the shortcomings of public delivery systems. Their traditional roles are shown in Table 1.

Table 1. The Role for Philanthropic and Private Capital

Dimension	Public Delivery	Non-Profit	For-Profit
Seed	Authorization and appropriation	Grants and donations	Angel and venture investors
Operating	Authorization and appropriation	Donations, service fees (occasional)	Sales and profits
Scaling	Authorization and appropriation	Grants, usually project specific	Private equity
Advantages	Coverage and equity	Targeting vulnerable populations	Efficiency and scale
Limitations	Flexibility and responsiveness	Scale and sustainability	Unlikely to target unprofitable markets

All funds for government programs are annually appropriated and, in education, combine complex per-pupil formulas and a variety of special programs. Well-intentioned efforts to ensure equity and targeted support result in inflexible programmatic funding that requires compliance and dampens innovation.

Seed funding refers to funding used to launch a program or organization. In the private sector, seed funding is often provided by so-called angel investors, often an entrepreneur's friends and family, who typically purchase shares of common stock in an initial offering. This may raise a few hundred thousand or occasionally as much as several million dollars. In other cases, seed funding is provided by venture capital investors. These investors typically purchase preferred stock before the business model has been proven, perhaps even before plans are completed and operations commenced. Because they take a high degree of risk, venture capital investors will often target a return of six to ten times their investment over five to seven years with a target compounded annual yield of at least 25 percent (net of fees). While initially drawing on this contributed capital, for-profit companies ultimately rely on sales and profits to fund operations and expand. For-profit companies target the most profitable market segments and are less likely, without foundation support, to meet the needs of vulnerable youth.

Non-profits typically rely on philanthropic donations for seed and operating funds, but increasingly attempt to create sustainable business models including service fees and product sales while pursuing a charitable mission. The influence of new money foundations has introduced more venture capital strategies including greater attention to outcomes, insistence on sustainable business models, exit strategies, and personal involvement on the part of donors. Unrestricted grants allow non-profit organizations with sound business plans to expand their impact, as growth equity does for companies in the private sector. However, there is still too

much project-specific financing and not enough operating and scaling support. Non-profits often chase the interest of foundations but lack the funding to develop their operating infrastructure and leadership. Other than passion for their mission, non-profit managers have weak incentives for growth and performance.

Public, philanthropic, and private investments each have distinct advantages and limitations. Governments play a critical role in setting standards, ensuring quality, and protecting the rights of vulnerable populations. Foundations can take a long-term view, take significant innovation risk, and serve charitable ends but, in the non-profit world, scale often means larger headaches with few additional rewards. Companies can aggregate private capital, develop innovative offerings, and develop efficiencies at scale. In the private sector, managers have incentives including stock and performance compensation that encourage quality, performance, and growth.

Coordinated public-private partnerships will be key to meeting the unique challenge of rapidly scaling access to quality education. Private investment will not fix the problems with education, but education will not be fixed without it. Promisingly, the recently passed federal stimulus bill, philanthropic investments in innovation, and market trends (discussed below) are attracting the attention of private capital and pushing historical limitations to investment.

Batch-Print to Personal Digital Learning Services

When the fifth graders in Mr. Wezman's class of 1994 got to the unit on Egypt, they rushed to the school library and fought over the six books on the subject. Until 1994, the building block of formal education was a teacher and about 25 age cohorts, progressing through material at a uniform pace—a batch-process organized around printed text.

And then the World Wide Web exploded, fundamentally altering learning opportunities. In 1995, Mr. Wezman's fifth grade class moved into a newly constructed school with high speed Internet and a generous number of computers. Suddenly the learning challenge was reversed—instead of information scarcity there was information abundance; instead of fighting over a few printed texts, students were searching, sorting, and attempting to synthesize a world of information. An extraordinary teacher like Mr. Wezman anticipated these opportunities and incorporated them into the structure and curriculum of his classroom to the benefit of his students (including my daughter). However, outside his classroom, little has changed in the last 14 years.

The barriers of a public delivery system have inhibited the flow of capital to opportunity. Diffused and protracted procurement systems, reluctance on the part of school districts to work with for-profit companies, and the resulting weak returns on investment have made investment in the U.S. education sector unusually low. As a result, education remains one of the sectors yet to be transformed by information technology.

Schools, particularly in America, are giant, expensive facilities that sit empty about half the time, often unused on evenings and weekends. School budgets are driven by staffing ratios that, unlike most other sectors, have not changed alongside productivity-improving technology. Young people learn about the same amount and at about the same speed that they did one hundred years ago.

Rather suddenly, the opportunity to learn more, faster, and cheaper is becoming a reality. To the extent that public delivery systems embrace market opportunities, investment in new learning tools, and new school formats, they will yield improved learning, staffing, and facilities productivity and make worldwide access to high-quality, cost-effective learning experiences

possible. The waves of innovation in other sectors outline the productivity revolution to come. Table 2 shows five shifts that will be driven by private sector investment during the next decade:

Table 2: Innovations to Be Driven by Private Sector Investment

Dimension	From	To
Learning	Standard textbooks and annual multiple choice tests	Digital learning with embedded assessments of skill and interest
Progress	Batch-process in age cohorts	Personalized learning
Organization	Giant factories where local, state, and federal policies are enacted	Physical and virtual learning communities with aligned support services
Connections	Discipline-based learning with limited application	Integrated projects, real world connections, student enterprise
Employment	Local education authority or private school	Rich marketplace with variety of entry points and employers

Before 2020, the majority of students in developed countries will do the majority of their learning online.[1] Instead of $50 million facilities that look (and to some extent act) like prisons, we will begin to see schools that look more like a Starbucks, where young people attend at convenient times and where their learning extends into the community. Low cost formats that blend online and onsite learning will make it more cost effective for states and low-income communities to create access to high-quality secondary education. These advances will reshape how material is delivered, how teachers interact with one another, how students are assessed, and the basic conception of the classroom and the teaching profession.

Students will learn in engaging virtual worlds with continuous background assessment of their skills and interests. Like World of Warcraft, but for education rather than entertainment, massively multiplayer online (MMO) learning games with a variety of motivational schemes will

[1] With aggressive political leadership and appropriate market incentives, sufficient private capital could be deployed so that a majority of students could be learning online by 2015. However, given the economic preoccupation of political leaders and resilience of public systems, the transition is likely to take longer.

gain popularity in informal and formal (for credit) settings. It may come as a surprise to other Baby Boomers, but MMO revenue is the largest and fastest growing segment of entertainment media. Virtual worlds like GAIAonline, Neopets, and Club Penguin use an elaborate point system and a variety of challenges and rewards to sustain engagement. Early entrants in the learning space include Tabula Digita's Dimension M, a math game, and in the informal space, Grockit, a two dimensional quiz bowl for students preparing for the GMAT.

Social networks will develop around assessment systems and support communities of practice for educators. These peer learning systems will connect teachers facing similar challenges within schools, across networks, and around the globe. More than a dozen teacher social networks joined ePals.com in 2008 and hundreds of specialty learning networks have emerged on Facebook and Ning.com. These networks are making a teacher's ability to recognize and meet specific challenges more relevant than distance.

Open content, or an Open Education Resource (OER), will compete effectively with proprietary products. With leadership from institutions like MIT, open content has a strong foothold in higher education where professors independently design online course offerings. Growth in K-12 education requires more organization, support, and investment and, as a result, has lagged behind. But in the next three years, several frameworks of vetted, organized K-12 content will be developed and supported by a robust economy of student, teacher, and school services in the same way a vendor community has emerged around the free computer operating system Linux. OERs are most likely to develop with foundation support and around recognized standards and assessments—either in a state like California, for new national standards, or for the International Baccalaureate system.

Some states will cling to unique standards and cheap annual multiple choice tests but most will adopt voluntary national standards with fewer, clearer, and higher learning objectives and sophisticated online assessments that quickly zero in on a student's learning level. Built into many learning experiences, these adaptive assessments will provide continuous performance feedback to students, teachers, and content developers. Expert systems will queue content, provide support, make connections, and suggest learning pathways while managing a personal, portable learning profile. Delivery will work seamlessly across a variety of inexpensive personal digital devices.

With powerful new resources online, homeschooling (including students in virtual charters) will double in size, exceeding 10 percent of all students in the U.S. However, given the continuing interest in custodial services and extracurricular activities, the vast majority of students will learn in hybrid environments that blend online and onsite learning—smart, agile schools.[7] Some of these hybrid environments will demonstrate significant productivity gains in learning, staffing, and facilities. Students will attend during convenient times of the day and year, reducing the rigid effects of the agrarian calendar. Well-paid teachers and flexible spaces will serve larger numbers of students at lower costs. In the developing world, hybrid formats and inexpensive devices will extend access to high-quality, low-cost secondary education.

Instead of the closed employment shop (i.e., certification, district employment, and union membership), learning professionals will have a variety of employment and entrepreneurial options including content development, online instruction and tutoring, hybrid school operations, and the facilitation of work- and community-based learning and student enterprise.

Geographies that offer vouchers will see a more rapid shift from institution-centric services to disaggregated student-centered services, as families are enabled to select from a

variety of personalized learning and support services. Investment will follow opportunity in the shift from batch-processing, print-centric mega schools to personalized, digital learning services.

The Role of Government

Given its link to opportunity and citizenship, education is decidedly a public good. As such, governments play a foundational role in framing delivery parameters including goals, access, payment, and quality assurance. Progress of the sort outlined above is obviously dependent on the reduction of government-imposed barriers and the introduction of incentives for innovation.

Governments have traditionally promoted equitable access to education, but this typically results in an ossified bureaucracy that lacks flexibility and has, to date, inadequately served low-income students. The adaptation of private-sector performance contracting—charter schools that operate outside the authority of the local district—has resulted in networks of high performance charter schools in states with strong authorization and vigilant accountability. Non-profit school developers like KIPP and management organizations like Achievement First and Green Dot are producing reliable quality under the most difficult circumstances. With little fanfare, for-profit charter operators have become an even larger force with organizations like National Heritage Academies operating 60 elementary schools mostly in the upper Midwest. In Sweden, Kunskappskolan operates 32 secondary schools with IKEA-like efficiency.

The shift from batch-print to personalized digital services will accelerate the transition to these kinds of contract operations. Companies like K12 Inc., a $400 million international operator of online schools, and Connections Academy, an equally profitable chain, are providing new options to students worldwide. State and local authorities will increasingly look to contracted operators to introduce innovation and to replace schools with weak performance.

This transition will likely be bumpy and uneven across political boundaries. States and cities open to innovation will see a rapid increase in learning options—virtual and blended schools, branded networks, and new configurations that include high school and post-secondary certificates. Federal, state, and local governments, in partnership with non-governmental organizations and philanthropies, will play an important role in expanding access to quality learning by investing in research and development and by improving incentives for entrepreneurs including demand aggregation, barrier reduction, start-up grants, and more autonomy for strong performance.[2]

The primary U.S. federal government investment in research and development is through the Institute for Education Sciences' budget of approximately $600 million, about one tenth of one percent of total K-12 education expenditures.[8] If we combine all the other agencies with a learning research agenda it may total two tenths of a percent. If we add the arcane doctoral investigations at universities, it may total three tenths of a percent—an order of magnitude less than any aggressive R&D agenda. Even university and federal research investments, moreover, are driven by investigator interest rather than innovation strategy.

A substantially larger investment and more focused agenda are certainly warranted given the importance of education to international competitiveness. Perhaps the most important government role is creating the policy room to innovate. Federal and state governments can do far more to promote innovation at scale, including:

- Provide facilities or facilities funding to high-performing charter school networks
- Update regulations regarding virtual and hybrid schools and encourage vendor and student participation

[2] One of the best examples of mission-driven demand aggregation is the Clinton Global Initiative's effort to fight AIDS by building sufficient demand developing world for AZT to interest pharmaceutical giant GSK. In education, Achieve Inc. built a consortium of states that issued a request for a common Algebra assessment.

- Match grants for comprehensive OER frameworks and invest in organizations that provide related services
- Aggregate demand for low-cost digital devices
- Invest in venture funds focused on innovative learning tools and formats
- Support equitable funding for low-income students and promote portable need-based student funding.

The Role of Private Capital and Profit-Seeking Organizations

Private capital is particularly useful in producing and scaling innovative products and services. Venture capital firms seek high returns by making risky investments in start-up and early-stage companies. Private equity investments allow revenue-producing companies at or near breakeven profitability to achieve scale and produce attractive returns. These investments in innovation and scaling bring new services to education institutions and students.

In an efficient market, money flows to good ideas. The inefficiency of the U.S. K-12 education sector has hampered investment and innovation. Purchasing is done by 15,000 districts and more than 100,000 schools, leading to diffused and protracted sales efforts. A web of interlocking employment agreements and local policies is compounded by 50 different complex education codes that deter interest from the private sector. The combination of a decentralized system, subtle and outright barriers to entry, and tight budgets has dampened private investment.

Vendors of new learning and educational management products and services find it difficult to find entry points and grow profitably. However, with U.S. public sector K-12 education spending in excess of $600 billion, the for-profit market is still a substantial $25 billion with three large segments: instructional materials, technology infrastructure, and related services including tutoring, professional development, and school improvement.[9] Yet public

employee groups have frowned upon activities outside these accepted roles for vendors, particularly the private management of schools.

New Openings for Private Capital

Five emerging areas are slowly opening the sector to additional investment and innovation:

1. *Inexpensive application development.* Flexible social networking applications like Facebook and Ning.com allow easy group formation and customization. The addition of game elements in Grockit.com provides a fun and useful place for GMAT students to study together. Applications that would not have been possible or would have cost millions can now be rapidly and inexpensively prototyped.

2. *Online learning.* The successful public offering of K12 Inc. (LRN) in December 2007 marked the coming of age of online learning. The segment continues to grow by more than 30 percent annually—more than 50 percent where policies encourage participation—with a growing number of public and private participants.[10] Blended learning, learning while online in a classroom, is the fastest growing segment.

3. *Open content.* While most OER is a product of public effort and foundation investment, the Redhat/Linux model of a robust service economy around open content is emerging in education. Wireless Generation, a Brooklyn startup, purchased a reading textbook, put it online, and gave it away for free at FreeReading.net. Wireless Generation earns money from FreeReading.net by selling aligned assessment, professional development, and customized content delivery. In an exciting development, other entrepreneurial for-profit and non-profit partners have expanded the array of related services. This micro-economy around a free reading text is a small example of the substantial OER vendor community that will develop in the coming decade, as well as organized, vetted, and comprehensive OER libraries.

4. *Educational services.* The incorporation of federally sponsored Supplemental Educational Services into NCLB resulted in the rapid expansion of tutoring services. Direct-to-consumer services, both for formal credit accumulation and informal personal development, looks like the next wave of innovation.[11] Numerous online tutoring services like Tutor.com and e-Tutor.com were introduced in 2008 and several sophisticated adaptive learning games will be introduced as subscription services in 2009, such as Dreambox.com, which was launched early this year. With fewer government restrictions than formal education, the career and language training space is growing rapidly in China.

5. *School operations.* After a disappointing introduction with Edison, for-profit school operators have quietly emerged as a multi-billion dollar subsector. Like open content, this trend follows successful introduction at the post-secondary level with a number of scaled

participants operating online and onsite programs including Apollo (University of Phoenix), DeVry, Strayer, Capella, and Corinthian. For-profit education management organizations like National Heritage Academies, Mosaica, and Leona are now collectively larger than non-profit charter management organizations, with over $1 billion in combined revenue. For-profit private school networks like Meritas and American Education Group are acquiring individual schools and building substantial networks.

There is some public activity in these five areas, but it is private investment that is pushing these frontiers as the sector shifts from batch-print to digital personal learning services. These areas represent new entry points and business models for private capital.

The Innovation Agenda

The U.S. education sector is similar to the automobile industry of the 1970s—batch-processing and manual labor. It is one of the only sectors that has not experienced significant productivity improvement as a result of information technology. There are about 10 million computers in American schools, one for every five students, but little to show for it. A 2007 Department of Education report showed no improvement in reading and math scores as a result of the use of educational technology.[12] It is likely, however, that the nominal gains in recent years, particularly in mathematics, are at least partially a result of consistent testing and the use of data systems to improve instruction.

The basic building blocks have not changed—individual students struggling with text or a difficult math problem and schools filled with teachers in 900 square foot classrooms with rows of about 25 students. Productivity breakthroughs will reshape the basic building block and result in improvements in learning, staffing, and facilities productivity. Computers will finally pay off when they become core rather than supplementary, when content is more adaptable to student learning needs and interests than current textbooks, when engaging content supports higher

student-to-teacher ratios, and when online learning comfortably supports better facilities utilization.

The most important productivity breakthroughs will come in learning tools for skills critical to accessing college and careers—language and mathematics—as academic success is heavily dependent on making the third grade transition from 'learning to read' to 'reading to learn' and building the problem solving skills to be successful in higher level math and post-secondary eligibility.[13] Adaptive content has 'game changing' potential in both areas.

The most widely used example of adaptive content is Vivendi's smash hit MMO World of Warcraft. The skill and interests of 10 million subscribers are continuously and transparently assessed and, as a result, their game playing experience is an individualized virtual world. A well constructed game like World of Warcraft makes it easy to enter and hard to master; each player rides a learning curve through engaging content with tools and roles that evolve to meet new challenges.

Why aren't there learning environments as sophisticated as World of Warcraft? Development cost is one reason. World of Warcraft is reported to have cost $200 million to develop.[14] New three-dimensional MMO games routinely cost $20 to 40 million to produce. While that is comparable to what the big publishers spend to develop a new line of curriculum, the limited track record of learning software sales to schools or parents is not currently sufficient to justify a large, risky bet. As development tools and platforms improve, however, costs for developing high-quality games will decline and the number of authors and games will multiply exponentially.

There is a bumpy 30 year track record of learning software with a few mass market hits like Reader Rabbit and Oregon Trail. Recent entrants like Tabula Digita's Dimension M, a pre-

algebra math game, are an attempt to bring adaptive game technology to the classroom. As access to computers has improved, learning software has been used occasionally to supplement core instruction. But it has not yet been used comprehensively and nibbling around the edges of a school district budget has not proven to be a very lucrative strategy.

New entrants to the adaptive learning software space are taking a backdoor strategy beginning with direct-to-consumer sales for informal learning and entertainment, followed by the tutoring/supplemental educational services market, and eventually institutional sales as supplemental curriculum. This multiple channel strategy has the potential to provide a return on a $20 million development budget and may result in a few healthy competitors in the learning tools space. Even a flat comprehensive digital curriculum (i.e., sequential rather than adaptive, with limited multimedia) can cost more than $30 million to develop. Now that K12 Inc. has a $400 million run rate growing at nearly 50 percent annually, it looks like a viable investment.

In addition to adaptive content, comprehensive personalized learning platforms will also include and be supported by:

- Motivational schemes common in MMOs that combine collaborative learning and reward systems including points, virtual currency, status indicators, and avatar enhancements.
- Data-informed teacher social networks that create a community of practice (e.g., Wireless Generation's ARIS network in New York City).
- Aligned student, teacher, and school support services.

As discussed previously, the transition will be accelerated or hampered by federal and state policy. Virtual schools have plowed new ground but are still frequently hampered by clock time and staffing ratio requirements. State standards remain too broad and vague.

Adoption of national standards would reduce development costs and ease multi-state adoption and sales by reducing the need to customize offerings for each state. Federal and

foundation investment can also reduce the financial risk of developing new learning tools by providing grants or aggregating demand. However, the private sector will play the critical role in educational innovation given its unique ability to aggregate capital around disruptive ideas, hire talented teams, and invest in multichannel marketing. These three factors offer distinct advantages compared to non-profits. First, while it is not easy to raise angel and early stage venture capital, it is often easier than raising unrestricted grant funding—risk adverse foundations are less likely to make an early stage bet than an investor seeking profit potential. Second, the ability to offer stock and options to founders and early team members makes it easier to attract world-class talent to for-profit enterprises. Finally, the ability to execute a multichannel strategy—including targeting lucrative markets (i.e., high-income customers) rather than exclusively low-income students and serving a charitable purpose—can make for-profit business models easier to fund and scale. Note that a for-profit service that reaches 10 million students is likely to serve a larger number of low-income students than a non-profit designed specifically for that purpose.

The Scale Agenda

Improving global access to higher education has been the most important contribution of private capital in the sector to date; every emerging economy and many developing economies have a vibrant private higher education sector. Investments by private universities such as Laureate, Apollo, Knowledge Universe, Strayer and many others have introduced cost effective brick-and-mortar and virtual post-secondary education around the world.

Compared to the non-profit and public sectors, private investment in for-profit ventures has significant advantages in achieving quality at scale. Public schools are organized for

compliance and employee protection rather than performance and have little incentive for adopting successful models with fidelity. Non-profits have difficulty raising scaling capital and lack scaling incentives. In contrast, for-profit organizations have strong incentives for satisfying customers and achieving scale and are playing an important scaling role in regard to learning tools, schools, and services.

The growing role of for-profit enterprise in education parallels the growth of the Internet which has expanded access to learning opportunities worldwide. Integration of distance learning and face-to-face courses have increased access to post-secondary learning, improved student performance, and reduced costs. Nearly two-thirds of undergraduate degree programs in the U.S. offer web-based courses[15] with a growing number, especially of private for-profit universities, that offer entire degrees online. Meanwhile, China surpassed the U.S. early in this decade with the number of students engaged in post-secondary education and it's clear that it could not support the shift from elite to mass higher education without embracing online learning and private providers.[16]

The ability to target attractive segments and expand to broader markets is a key advantage of for-profit enterprises. The shift from batch-print schooling to personalized, digital learning will be led primarily by private sector capital. Compared to non-profit entrants, for-profit companies are more likely to develop engaging MMO learning environments, teacher networks, and data, management, and communication tools. These tools will be introduced in public and private schools both domestically and internationally.

Private capital is already bringing quality to scale in school operations. There are about 35 for-profit charter school operators in the U.S. with 350 schools (compared to 250 schools operated by 45 non-profit operators—a small indication that it is easier to scale a for-profit

organization).[17] Operators like National Heritage Academies and Mosaica have quietly and efficiently gained market share while meeting the expectations of 60 local non-profit charter-holding boards. There are also a growing number of for-profit *private* school operators including Nobel, Meritas, and American Education Group. Internationally, for-profit K-12 private education is common and expanding; examples include GEMS in the Middle East, Kunskapssoklan in Sweden, and Nord Anglia in Eastern Europe.

Private capital investment will also be important in developing aligned instructional services. It is difficult for U.S. schools to purchase aligned curriculum, assessment, tutoring, professional development, school improvement services, and data management services. In fact, the market is so fragmented that it requires an intricate engineering and correlation feat to piece together services that correspond to state standards and comply with local, state, and federal guidelines. For example, after converting to for-profit status, America's Choice is better able to target its services toward expanding its teacher and school support services and aligning these products with most local and state standards. With the assistance of philanthropic support, private investment could produce a comprehensive and engaging OER offering, supported by a robust service economy and providing student, teacher, and school supports. Like IBM and Redhat support for the free computer operating system Linux, a good early example of an emerging OER ecosystem is FreeReading.Net, introduced by Wireless Generation and now supported by several vendors.

This will be a very difficult transition for existing institutions with shifts orthogonal to basic structures: from batch to personalized content, print to digital media, sequential to adaptive curricula, and supplemental technology to comprehensive learning platforms. The transition will take place as more comprehensive digital offerings are developed, as access to devices becomes

ubiquitous, as virtual schools gain share, as more schools blend online with onsite learning, and as new hybrid formats and learning networks are developed. They will look more like Starbucks than juvenile detention centers. They will combine the personalization of Facebook and the portability of an iPod. They will offer a career plan like Re/Max.

Most traditional public school districts in the U.S. will struggle to make this transition. Schools slow to act will lose enrollment; many will close and some will be replaced. The U.S. system has proven resilient—but the transition will not be smooth and in many places it will not be rapid.

Impact-Seeking Capital: Combining Philanthropy and Profit-Seeking Investment

The dramatic increase in young software billionaires has been accompanied by a dramatic increase in education philanthropy that is oriented more toward new ventures and is less bounded by the roles and rules of traditional charity. Philanthropic investors are increasingly pressing non-profits to develop a sustainable business model and scaled solutions. With support from a few of the new money foundations, a cadre of business advisors to non-profits including Bridgespan, McKinsey, BCG, Parthenon, and New Profit is pushing non-profits to think like for-profits.

Big problems in health, energy, and education will require collaboration between governments, non-governmental organizations, markets, and emerging fourth sector organizations that attempt to create market incentives for public benefit. Philanthropic collaborations with the private sector bring two critical benefits. First, foundations can take a long-term view while profit-seeking capital is typically focused on a five to seven year time frame and companies are concentrating on quarter-to-quarter results. Second, foundations can

mitigate risk for private investment by offering credit enhancements or by aggregating demand of market segments that for-profit firms might otherwise find unattractive.

A number of organizations already blend philanthropic grants and profit-seeking investments to achieve strategic impact objectives. Examples include Google.org, Omidyar Network, and the John Doerr sponsored New School Venture Fund. (The Aga Khan Development Network has been doing this successfully for decades in the Middle East and North Africa.) There are a growing number of examples from the global health sector that blend philanthropic and profit-seeking capital, including the Clinton Global Initiative's effort mitigating market risk for pharmaceutical giant GSK by aggregating demand for HIV treatment drugs. In addition, the X PRIZE Foundation, a fourth sector organization, offers large incentive prizes that encourage entrepreneurs to produce public benefits. In education, one local Chicago initiative to increase college matriculation rates is supported by BCG Consulting and includes the foundation-sponsored adoption of for-profit curriculum vendors and performance management tools.

Though frustrated by IRS regulations and barriers between for-profit and non-profit organizations, this impact-seeking capital combines strategic focus, smart business practices, milestone funding, and a double-bottom-line that seeks both social benefit and a return on capital.

The shift from batch-print education to digital personal learning services will require coordinated impact capital, both philanthropic and venture. In the next few years we will see more examples of this blended capital. This might include development of an OER with comprehensive adaptive curriculum or a quasi-public resource with Advanced Placement or International Baccalaureate curricula and aligned services. Such an effort may require $50

million of philanthropic capital and $50 million of venture capital. Other collaborations likely to develop include the development of for-profit financial services for charter schools with philanthropic credit guarantees[3] or an investment in for-profit private school operations in voucher cities and states that provide incentives for serving low-income students or taking over failed public schools.

Following are three blended impact capital examples, mixing philanthropic and profit-seeking capital, likely to be executed in the next 24 months:

- Affiliated non-profit and for-profit funds that act in concert on large constructed opportunities that leverage bodies of content or groups of people (e.g., OER service economy, Teach For America Alumni fund)
- Foundation program-related investments (PRI) of venture debt in for-profit funds and companies
- A non-profit supported by grants that invests in education venture funds with a charitable intent of producing innovative learning tools and formats with partially recycled profits to extend impact potential indefinitely

In some respect these strategies are an effort to mitigate the restrictive federal regulations regarding non-profits that were a well-intentioned response to abusive activities. Aggressive but well researched and documented foundation activity will play a critical role in creating a healthy double-bottom-line that produces attractive returns and substantial public benefit.

The Backlash and Beyond

Primary and, to a slightly lesser extent, secondary education is increasingly viewed globally as a public good and a civil right. In most countries, private schools augment the public delivery

[3] Three factors substantially inhibit charter schools' ability to borrow funds for operations or facilities, or to access other market rate financial services. First, charter schools operate independently of local education authorities and lack the statutory ability to impose and collect taxes. Second, most charter schools receive less income per-pupil than local public schools. Third, charters are held by independent non-profit organizations. Foundations can improve the ability to borrow—directly or through a financial intermediary—by pledging a certificate of deposit or guaranteeing a loan.

system for families that can afford it and for students with special learning needs. Even in slums surrounding Nairobi and Mumbai, low cost private schools offer an attractive alternative to the few public schools. Profit-seeking textbook, school supplies, and business service vendors are widely accepted as an integral part of public delivery systems. However, some people believe that profit-seeking companies cross the line when they propose to take on operational responsibility for schools.

Opposition to for-profit public school operations appears to be a mixture of philosophical, pragmatic, and political rationales.[18] The thought of tax dollars producing a return to shareholders in exchange for educational services is simply offensive to some, despite similar arrangements with road contractors, hospital operators, or private prisons. American society has also accepted a diverse post-secondary market subsidized with public scholarships, but remains cautious about private operation of primary and secondary schools. While pitched as philosophical or pragmatic, a portion of the opposition is led by public employee unions.

In recent history, there was substantial union opposition to Peter Hutchinson's consulting contract to act as Minneapolis superintendent in the mid-1990s; Education Alternative's management contracts with Hartford, Miami/Dade, and Baltimore in the mid-1990's; Edison's current contracts for managing schools in Philadelphia and West Chester;[19] and the 2003 Alvarez & Marsal contract to turnaround St. Louis schools. While these large scale private management schemes may not become common, the relative success of private charter operators appears to have opened the door for several national and large regional chains to achieve quality at scale.

After Edison's high profile struggles to enter public school management, it is interesting to note the quiet and effective growth of several private for-profit, non-union school management companies including National Heritage Academies, Mosaica, and Leona. Online learning

providers K12 Inc. and KC Distance Learning Inc. are rapidly expanding through virtual charter schools and are increasingly reaching into classrooms in public schools by offering credit recovery for students that are behind and academic acceleration opportunities for advanced students. AdvancePath operates hybrid drop-out prevention academies in public high schools.[4] Perhaps these well-managed backdoor strategies signal a turning point for private operations of public schools. Their success is certainly attracting private investment.

Private investment in for-profit enterprises will be critical to expanding global access to quality education by producing and scaling innovative learning tools and formats. Hybrid formats that blend online learning with onsite support have the potential to deliver low-cost, high quality secondary education worldwide. Both government and private enterprise will be involved in making the capital investments necessary to expand access to innovative formats.

Public policy and investment can accelerate the contributions of the private sector by creating incentives for software developers and school operators. Federal and state policies that will maximize private investment include:

- Federal innovation grants, open to for-profits, focused particularly on language acquisition and middle grades mathematics
- Incentives for high-performing charter operators, including full funding and access to public facilities or public facilities funding
- Vouchers or private school scholarships that allow low-income students full school choice
- Incentives for organizations, including for-profit operators, to takeover or replace failed public schools

Profitable growth in education typically requires demonstration of educational impact. This natural double-bottom-line encourages most for-profit participants to improve their

[4] Revolution Learning owns a stake in AdvancePath Academics, Inc.

educational outcomes as well as their profitability. There will certainly be unscrupulous organizations warranting continued vigilance but the same is true for public administration and non-profit organizations. With adequate monitoring and thoughtful contracting, for-profit organizations can leverage public investment in educational R&D spending and will undoubtedly produce critical innovations in learning tools and formats.

[1] Fast Facts, National Center for Education Statistics, Institute for Education Sciences, http://nces.ed.gov/fastfacts/display.asp?id=66 (accessed January 1, 2009).

[2] Child Research Net, *Basic Research on Academic Performance: International Survey of Six Cities*, http://www.childresearch.net/RESOURCE/DATA/SPECIAL/SIXCITIES/FIGURE2.html (accessed January 1, 2009).

[3] Extending the School Year and Day, ERIC Clearinghouse on Education Management, Eric Digest, Number Seven, http://www.ericdigests.org/pre-922/year.htm (accessed December 26, 2008).

[4] Public Agenda, "Reality Check 2006: Are American Parents and Students Ready for More Math and Science?" February 15, 2006, http://www.publicagenda.org/press-releases/what-me-worry-new-survey-shows-american-parents-and-students-satisfied-current-mathscience-education (accessed February 3, 2009).

[5] Clayton Christensen, *Innovator's Dilemma* (Cambridge: Harvard University Press, 1997). Christenson suggests that it is difficult for established competitors to invest in new products and services that compete with existing offerings thus dampening innovation in sectors where barriers to entry are relatively high.

[6] James Tooley and Pauline Dixon, "Private Education can Benefit Poor People," Mercy Corps, June 14, 2005, http://www.globalenvision.org/library/8/767 (accessed January 1, 2009).

[7] KnowledgeWorks Foundation, "Map of Future Forces Affecting Education," http://www.kwfdn.org/map/node/agile,_smart_schools.aspx (accessed December 26, 2008).

[8] Institute for Education Sciences, "Major IES Updates," http://ies.ed.gov/director/board/reports/20086005/updates.asp (accessed December 26, 2008).

[9] Laurence Bloom, "K-12 Education: 2007 Final Market Size and Share Report," Outsell, Inc., 2008, http://www.outsellinc.com/store/products/747 (accessed December 26, 2008).

[10] John Watson, et al., "Keeping Pace with K-12 Online Learning: A Review of State-Level Policy and Practice," 2008, Evergreen Consulting Associates, 27, http://www.kpk12.com/ (accessed April 10,2009).

[11] KnowledgeWorks Foundation, "Map of Future Forces Affecting Education," http://www.kwfdn.org/map/node/an_expanding_learning_economy.aspx (accessed December 26, 2008).

[12] Institute for Education Sciences, "Effectiveness of Reading and Mathematics Software Products: Findings from the First Student Cohort," Report to Congress, March 2007, http://ies.ed.gov/ncee/pubs/20074005/ (accessed December 26, 2008).

[13] Achieve, "Closing the Expectation Gap," 2008, http://achieve.org/files/50-state-2008-final02-25-08.pdf (accessed February 3, 2008) 8.

[14] Social Exec, "Contents of World of Warcraft Cost of 200 Million Dollars," September 19, 2008, http://socialexec.com/2008/09/19/contents-of-world-of-warcraft-cost-of-200-million-dollars/ (accessed December 2, 2008).

[15] Ron Owston, "The World Wide Web Revisited," Keynote Address, Mid-Western Educational Research Association, 2006; National Center for Academic Transformation notes similar findings in a 2005 study, http://www.edu.yorku.ca/~rowston/MWERA_article.pdf (accessed January 1, 2009).

[16] James C. Taylor, "Open Courseware Futures: Creating a Parallel Universe," *Instructional Science and Technology*, October 2007, http://www.usq.edu.au/electpub/ejist/docs/vol10_no1/papers/full_papers/taylorj.htm (accessed January 1, 2009)

[17] Author interview with Robin Lake, Associate Director, Center for Reinventing Public Education, October 6, 2008.

[18] Craig E. Richards, Rima Shore, and Max Sawicky, "Risky Business: Private Management of Public Schools," EPI Books, 1996, introduction, http://www.epi.org/content.cfm/books_riskybizintro (accessed December 26, 2008).

[19] Brian Gill, et al., "State Takeover, School Restructuring, Private Management, and Student Achievement in Philadelphia," RAND Education, 2007, http://www.rand.org/pubs/monographs/MG533/ (accessed December 26, 2008).