Building the U.S. Digital Depository
Policy innovation to prepare our students for the 21st century

The digital transformation is underway – but serious roadblocks remain

The last few years have unlocked a wave of interest in bringing our public education system into digital age. Educators are eager to experiment with blended learning models that combine regular classroom time with computer-based learning; to replace heavy print textbooks with laptops, tablets and mobile devices to deliver digital content; and to introduce other innovative modes of instruction tailored to the personal learning style of each student.

But there's a problem. Our schools lack the basic technology infrastructure to make the transition. In a recent survey by the Federal Communications Commission of schools funded by the e-Rate program (which is intended to provide broadband to schools), almost 80% reported that their connections were inadequate. And outside of school, home broadband adoption rates have stalled for the past three years, and are holding at 65%.[1]

In addition, 46 states have adopted rigorous, common academic standards, and will be moving to computer-based assessments in the next 2-3 years – yet most are woefully underprepared for this transition. In one survey of 30 participating states, 66% stated that having sufficient computer access is a major challenge to using computer-adaptive assessments, and 50% stated that inadequate internet access and bandwidth poses a major challenge as well.[2]

Moreover, we are at serious risk of falling further behind other nations that understand the promise of education technology. New Zealand, for example, is investing $1.3 billion in its Ultrafast Broadband in Schools project to ensure that by 2016, 97.7% of its schools will have access to high-speed fiber connections.[3] It's worth noting that New Zealand serves a student population roughly the size of Alabama's.

The challenge is not simply one of funding. We believe that the overarching problem is the fragmented structure of our public education system itself, with more than 14,000 local school districts serving widely varying student populations. This disconnection fosters inefficiency and stifles entrepreneurial activity in a variety of ways:

- **Lack of local capacity.** With rare exception, public school administrators are not IT experts. Nor do they have training in business decision-making or in calculating return on investment. As a result, most lack the expertise needed to make good decisions regarding building digital network infrastructure. We don't fault school administrators for this – they have a lot on their plate – but we know they need help.

- **The procurement nightmare**. The sales cycle for procuring new technologies in school districts lags far, far behind the development of new technologies. Two or even four year procurement cycles are not uncommon, and the arms-length RFP process is itself an impediment to

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[1] http://www.setda.org/c/document_library/get_file?folderId=353&name=DLFE-1515.pdf
[2] http://www.cep-dc.org/displayDocument.cfm?DocumentID=391
[3] http://elearning.tki.org.nz/Ministry-initiatives/Learning-without-Limits2/The-Ministry-of-Education-s-priorities. And the remaining 2.3% will be guaranteed wireless connectivity.

entrepreneurial activity.[4] And it's extraordinarily difficult for new entrepreneurial organizations to survive the "valley of death" between startup and maturity as they attempt to navigate the Byzantine labyrinth of rules and regulations. The procurement process should be shorter and simpler.

- **Barriers to scale.** Because of our education system is incredibly disconnected, school districts today by and large develop their own "homegrown, fragmented, one-off" technology platforms and programs.[5] Even if these programs are successful when piloted, they struggle and are all but doomed to fail at scale because of the lack of inter-district collaboration in their development and adoption, often due to a mismatch between operating systems, hardware, or Internet connectivity.

To address these myriad challenges, we propose a two-part solution to (1) create a Digital Depository that will support (2) regional multi-district school consortiums eager to embrace technology and 21st century learning.

A Digital Depository serving regional multi-district school consortiums

If the major challenge facing school modernization is the fragmented, disaggregated structure of the public education system, the solution is to aggregate. And indeed, already a handful efforts are aimed toward this goal, including Digital Promise's League of Innovative Schools, the Department of Education's Regional Innovation Clusters, and more organic state-driven efforts.[6] We find these efforts encouraging, but we know that many districts – particularly rural and smaller districts -- lack the capacity to pursue this solution on their own. Absent a meaningful incentive, most districts will simply continue with the status quo.

The Digital Depository is our proposal to create that incentive. To foster the creation of multi-district school consortiums working together to build digital capacity, the Digital Depository would provide a number of services:

1. **Building infrastructure capacity.** The Depository would hire network design and IT experts to assist the consortiums in developing their digital infrastructure. The Maine Learning Technology Initiative, for example, serves 373 schools in Maine and helped build digital infrastructure to support more than 73,000 laptops – and yet, the MLTI is staffed by six people. The potential for scaling this type of support is enormous.

2. **Reforming procurement practices.** The Depository would hire sophisticated employees with backgrounds in business that would provide support to consortiums in negotiating technology purchases and finding cost efficiencies, and developing common procurement practices. The Depository's "procurement consultants" would help change this culture by developing a more sophisticated approach to product purchasing. Programs such as the U.S.

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[4] http://www.aei.org/files/2007/10/25/20071024_BergerStevenson.pdf.
[5] http://blogs.hbr.org/innovations-in-education/2011/03/the-innovation-mismatch-smart.html
[6] A handful of state-based efforts are taking on procurement challenges in particular, including those in Texas (http://www.tetpc.net/), Maryland (http://www.meec-edu.org/governance.html), and North Carolina (http://cloud.fi.ncsu.edu/projects/consortium.php).

Chamber of Commerce's "Business Corps," which encourage pro bono service by business professionals, could provide additional staffing support at little cost.

3. **Innovation at scale.** The process by which the Depository will help bring schools into the digital age will unfold in two stages. First, the Depository will focus its initial efforts on building the digital infrastructure schools need and reforming procurement practices to facilitate rapid adoption – in other words, create the backbone around which innovation can occur. Second, after developing relationships and assisting in the formation of the regional consortiums, the Depository will on a project-by-project basis, provide funding support to consortiums to support technology adoption. This funding could leverage public dollars by matching them with private or philanthropic capital. As the Depository builds a portfolio of projects, it can gather evidence of effectiveness to share with other consortiums.

A different kind of support

To ensure the Digital Depository serves its mission of fostering innovation within education, we think it's vitally important that the Depository itself reflect a professional, entrepreneurial spirit that's not often associated with government entities. To that end, we propose that the Depository be "quasi-governmental" in nature, meaning that:

- The Depository would have a cross sector board of directors made up of key government officials appointed by the Administration and Congress, as well as prominent business officials, technology experts, and educators.

- Employees of the Depository would serve on limited term basis and not be civil-service protected (a staffing structure somewhat similar to DARPA).

- The Depository would foster a culture of collaboration rather than compliance, and be dedicated to transparently reporting the success or failure of the projects it supports. By adopting a "portfolio" approach and mentality, the Depository will embrace a tolerable level of risk and understand that the general "fear of failure itself" is far more inhibiting to innovation than the failure of any particular project.

Once established, the Digital Depository would ***only*** serve regional school district consortiums of a certain size (perhaps more than 50,000 students) and comprised of multiple school districts. By incentivizing the creation of these consortiums, the Depository will empower districts as market participants, and help build local expertise to ensure that schools will continuously improve and adapt to new technologies as they are introduced.

The promise of digital learning is enormous – and we need to take action to deliver on that promise to every student in this country.

If interesting in discussing this proposal further, please contact Benjamin Riley, policy director for NewSchools Venture Fund, at briley@newschools.org or (202) 664-1042.