Gordon Freedman, Submitting for:
National Laboratory for Education Transformation (NLET)
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## Initial Description of Approach

General Approach:  We have assembled an ideal core partnership (College Sky) to develop a certification "marketplace" based on modular and portable sub-certifications. This design has the potential to achieve the lowest possible cost and the broadest possible scale, while continuously adapting to industry needs over time.  The benefits of standalone educational components are not restricted to technical education. Our goal is to develop a model that can ultimately be deployed across technical, remedial, professional and traditional postsecondary education.

**Development Process**:  Our development process is driven by a tight collaboration focused on creating a nationally scalable business model for certificates/certifications that can lead to initial employment, better employment and academic credentials.  The process has already begun.  For the past year a handful of the partners have explored a "community college service cloud" concept aimed at bringing identity-based efficiency to individuals in the high school-to-college-to-workforce progression, and cloud efficiency to providers.  The developmental process stages are as follows:

**Pathways**: Identify best-of-breed providers of certificates in existing relationships with industry to produce industry-validated certificates.  Ensure that providers work out common pathways from "micro" certificates nested in traditional certification that can be nested into credential/degree programs.  Five of our partners already do this at scale and have further agreed in this process to remove barriers for common pathways, with business and ownership details to be worked out in the business planning phase.

**Standards**: Gain agreement among the partners to identity and adopt common meta-data standards for certification data, common standards similar to the common cartridge standard (IMS Global) to move content between providers, common interoperability standards (IMS QTI, LTI, LRMI, Experience or "Tin Can" API) to connect to other technologies, and to define identity standards so the user uniformity can be achieved by learners, providers and corporations. Two of our partners, AcademicPub and Gooru Learning, can assist in bringing meta-data and search standards to the world of OER, self-published and publisher goods.

**Technology**: Gain agreement to explore a technology platform to be used between current and future partners, modeled to optimize portability of learner records and support of ongoing research into placement, retention, and program efficacy.  The partners believe that the time is right for the disaggregation of classroom-based education and training systems into the management of core learning modules, outcomes, assessment, and nested certification components interlinked by new data transport standards and interoperability schemes that allow mixing and matching of components with

flexible delivery and assessment management for end-users.   Through College Sky this group is committed to create smarter, less expensive technologies that can scale to millions.

See Freedman article in the Chronicle or Higher Education, http://chronicle.com/article/Cloud-Technology-Can-Lift-the/131673/

**Business Development**:  The partners have entered preliminary conversations concerning how College Sky would operate, how costs would be spread among the partners and revenues shared.  The partner group is amenable to moving to the next stage of MOUs or legal agreements in defining the collective business plan.  The project team leadership is skilled in these types of negotiations.

In light of the groundwork to date, the College Sky group anticipates minimal challenges beyond normal market research, customer development and negotiations and agreements on details of sharing content and revenues.  This project occurs at a time when opportunities online cannot be marketed effectively by individual campuses and commoditization is on the horizon. There is a clear need to band together to create what effectively will become an online marketplace for modular post-secondary certificates and certification processes.

In the partnership group of five substantial providers of certificates, there are deeply established existing relationships with many industrial employers.  Through College Sky the best practices of these partnerships will be collected and standardized for current and future partners.  This partner group represents the most sophisticated and large-scale providers of certificates, non-credit and credit.  It would be difficult to discuss one certificate here but a representative would be aviation certificates provided by our partner www.NC3.com. Working directly with manufacturers and the FAA, NC3 provides nested and portable certificates that are co-developed and accepted by aviation industry members.  The partnership group is arranged, by design, to have certificate providers, degree providers and employers agree on common pathways.

**Core Development Partners**:

National Laboratory for Education Transformation (NLET), www.NLET.org   is responsible for the management and organization of this project; it provides overall business structuring, technology planning, and supervising of the groups working on shared development and delivery.  NLET will be responsible for the business plan deliverable in this proposal and to define and manage the project as a whole.

National Coalition of Certificate Centers (NC3), www.NC3.net manages a network of education providers and corporations that supports, develops and implements skills-based certificate training in transportation, aviation, energy, and manufacturing. NC3 fosters deep collaboration between business and education leaders in meeting the skills gap challenge and develops turnkey solutions for its education partners to implement stackable, portable, industry-recognized certifications.  NC3 maintains

certification centers on 150 community college campuses and has numerous large-scale corporate and employer partners, who have agreed to work with NLET.

See list of partners who have agreed to work with NLET & NC3:
https://www.dropbox.com/sh/11vez53q4eltivf/06JBvp6SOF

www.Pima.edu system is a core community college partner providing certificates-to-degree programs and providing critical advice to College Sky on all the functions related to student success, education management and certificate development.  Pima's chancellor, a board member of AACC, will assist in building a large group of colleges willing to share development and portability of content.  He has gained AACC's support of the College Sky project.

The core College Sky group has as its primary focus the joint development of a low cost portable credential delivery system among its partners, with participation options across multiple licensing and implementation scenarios.  This is to be accomplished through specific business and legal agreements among all the initial and subsequent partners that coordinate joint action to create the standards and marketplace, but also facilitate independent and competitive provision of certification education.

College Sky intends to start development and testing locally through Pima and then start scaling through the regional and national partner bases of Pima, Capella, UMUC, NC3 and UC Irvine.

**Technology Partners**:

www.ConcentricSky.com is a premier US technology firm with expertise and proven successes in enterprise web development, social media, and mobile application development. The team at Concentric Sky is comprised of over 50 technology professionals who can provide College Sky with portal and technology development, cloud integrations, and user experience design and use data management in a seamless manner across the partner base.

www.PiersonLabs.com represents a new social media, data-mining, and badging platform that can enable shared curriculum development, delivery and peer learning capability to the College Sky partners.

www.Acdemic.Pub  is an enterprise grade content management system that can discover, manage and serve all content forms and from all content vendors (publisher, OER, author-created) and store and interoperate with meta-data and business rules for content from the piece to the creation of an e-book or traditional textbook or learning materials.  There are over 8 million pieces of content available through the system that are pre-cleared and priced.

www.GooruLearning.org  is the most extensive search engine for learning that is open and free and can be adapted for new content, assessment and collection searches.  The CEO was a senior engineer at Google responsible for large-scale systems development.

**Postsecondary Partners**:

www.Capella.edu is a premier online institution and a leader in outcome-based education.  Capella offers pathways from high school to certification to academic degrees and works with employers. Capella's certificate and course offerings are available to College Sky along with advice and guidance on working with for-profit providers.

www.UMUC.edu a large-scale provider of certificates, certifications and online academic degrees. UMUC, as part of the University of Maryland, works with many employers, including Federal government and military organizations.  UMUC can provide guidance on the online management of certificates, courses and degrees that are relevant to employers.

http://unex.uci.edu/, UC Irvine Extension offers 46 certificate programs in a wide range of subjects, from Human Resources Management to Teaching English as a Second Language to Web Intelligence. These programs carry academic credit and many are articulated to degrees granted by other universities. UCI also offers free or low cost university preparation programs such as Pre-Chemistry, Pre-Biology, Pre-Calculus, and Writing.

**Other Resources**:

A variety of other parties have expressed a willingness to participate in this exciting project as well, as seen in the submitted MOUs.

**Capacity**

The National Laboratory for Education Transformation (NLET) is a California non-profit (501C3) based in Santa Clara, CA with MOUs with centers at the University of California Santa Cruz, the University of Texas Austin and the Los Alamos National Laboratory. NLET is skilled at defining, leading and managing multi-organization projects and efforts aimed at creating new businesses in the learning space.  By design, NLET reaches outside of the education community to work collaboratively and constructively with experts, organizations and corporations to analyze, redesign, test, and spin-out key transformations for education.   NLET has been able to successfully conclude each project or operation it is has started.

NLET is currently managing aspects of a NSF DRK12 grant with three core partners, is managing a NIST.gov sub-award (NSTIC) with multiple corporate, non-profit and education entities. It also created and manages the Silicon Valley Education R & D Center in partnership with UC Santa Cruz, and is in the organization stage of an education-based big-data center with numerous partners.   Further, the president of NLET, also the College Sky project team lead, has extensive experience in managing large-scale and technology projects for education including a similar effort in higher education to College Sky called Prometheus which was owned by George Washington University and involved over seventy-five partners.   A number of the College Sky partners were once Prometheus clients or partners.

Project Team:

The project team in charge of developing the business plan for this proposal has deep expertise in education, finance, new business strategy and product development.  Team members Gordon Freedman, Kevin Lyons, Terry Miles and Dana Offerman will create the deliverable by bringing their experience with all aspects of business planning, academic operations and technology development to work with our institutional partners in education and industry.

## Alignment

Our goal is to create a modular system for delivering industry-valued credentials at the lowest cost to students, lowering the barriers to postsecondary achievement and increasing the Return on Investment for students. This is completely aligned with the Gates Foundation goals in this RFP.

**Proposed Activities, Methods, and Deliverables for the Design Phase**

The central tasks for the CollegeSky partnership are to gain general consensus and agreements on the best structure of an institution-agnostic modular certification framework. This will require organizing the vast collective knowledge of the partnership and supplemental research that helps define the initial products and services, including standards development, technology selection and management and required business agreements and processes.

The vision starts with a registrar system for inexpensive and stackable "micro" and "nano" certifications based on accomplishments with standalone value to employers. By building up from demand driven nano-certifications (days) that can cluster into micro-certifications (weeks) which cluster into traditional certifications (semesters) and then degrees (years), students get the lowest possible barriers to postsecondary education, with return on investment than can be validated at each step. By enforcing modularity throughout the stackable framework, industry gets a perpetually flexible, responsive and competitive system for efficiently updating and delivering state-of-the-art knowledge and skills to students over time.

Key elements of our framework have already been demonstrated by one of our partners (NC3) in technical education. Vendor-sponsored nano-certifications are offered that apply to using specific equipment like a specific multimeter or a particular digital torque wrench. These accomplishments have standalone value to employers and comprise the building blocks toward micro-certifications like "Multimeter" or "Torque" that can be achieved by getting additional nano-certifications for operating related equipment. The mastery of specific equipment operation, diagnostic tools or manufacturing calculations builds to independently accomplishing specific multicomponent tasks or projects and a breadth and depth of domain-specific knowledge in line with degree credentialing.

**Methodology**:

We will use a lean startup and customer development methodology to build, test and refine the business plan. Specifically, we expect to address:

a) <u>Define jointly developed products</u> – the creation of

   (i) ***A sharable standards-based modular certificate/certification*** templating system to be used by all partners for product delivery;

   (ii) ***A standards-based transcription*** and work record system for managing learner progress with permission-based ports for sharing with colleges and employers;

   (iii) ***A sharable standards-based social learning platform*** for conducting and delivering joint work, for coordinating with corporate partners, and for learners to work with each other and find resources;

   (iv) ***Sharable standards-based APIs*** and secure linkages with assessment vendors and testing centers.

b) <u>Define jointly developed and operated services</u> – The creation of a (i) CollegeSky web portal system that provides service to learners, certificate creators, vendors and employers, (ii) general and specific marketing for shared products and delivery, (iii) data strategy, policies and sharing of usage and performance data, and (iv) reports and guidance published by CollegeSky electronically and in print for learners, colleges, corporations and public.

**Proposed Deliverables & Timelines**

<u>October 2013</u>

Introductory conversations and meetings between project team and College Sky partners. Determine initial model certificate focus for CollegeSky technology platform that addresses an existing pathway from high school courses to community college certificates to degree programs.  Initial specification of the portal system to connect vendors and employers, types of jobs, and qualifications needed.

<u>November 2013</u>

Organize product, service, governance and business strategy data from conversations into user stories and value propositions. Explore and verify model cost reductions due to shared development and delivery.  Discuss and build initial cost, donation/subsidization, revenue and reinvestment model.

December 2013

Define and refine core product and services for initial certificate models including, specification development, costing, initial vendor and partner requirements, licenses and other agreements.

By December 30 have initial product and service specifications and an organizational model worked out for testing with partner staff and potential customers.

January 2014

Refine product and service plans based on partner and customer feedback. Outline formal business plan production tasks. Review desired new partner discussions, legal agreements, IP agreements, and cash flow. Outline processes for licensing, standards development, and codification of all business and product documents.

February 2014

Finalize product and service specifications, including preliminary standards, timetables, deliverables and cost estimates.  Create roadmap with first shared offerings, next shared offerings, sales and market rollout and geographic scaling.  Plan marketing and outreach campaigns with industry partners.  Validate financial models with customers. Update or add MOUs as required.

March 1-15, 2014

Prepare presentation materials, finalize business plan that includes an interoperability plan, scenarios, and a product road map for procurement and development and submit.

**Intellectual Property**

Our project will create an actionable and customer-vetted written plan for creating a fully modularized certification marketplace, starting with model participants and certificates.

We anticipate describing the functional architecture of software standards and the design of technology components that will be needed, but will not be building any in this exploratory phase.

We expect to test our product ideas with various students, administrators and employers for their feedback as potential customers.

**Project Team**

**GORDON FREEDMAN**, *President, National Laboratory for Education Transformation*

Freedman serves as president of the **National Laboratory for Education Transformation**, www.NLET.com, a Silicon Valley, CA non-profit corporation devoted to the redesign of public education systems and personal learning solutions, on par with corporate, consumer and governmental services. NLET believes that education lags far behind the digital, data and identity-based systems common in the social and commercial sectors.  To remedy this imbalance, Freedman founded NLET in 2010 as an organization that partners with the most capable organizations and individuals across a broad base of expertise inside and outside education.  The core partners of NLET are centers in the University of California, the University of Texas, at the Los Alamos National Laboratory and with a number of technology, social media and media companies.  NLET designs and participates in Federal, foundation and corporate grants as well as developing new non-profit incubated businesses to promote strategic and culture change in the education enterprise.

*Blackboard, Inc*. From 2005 through the end of 2011 Freedman was Vice President Global Education Strategy for Blackboard, Inc., www.Blackboard.com, and Executive Director of the Blackboard Institute. In these capacities Freedman traveled to many countries and U.S. states exploring the boundaries of education change.

Freedman was the leading international and domestic education speaker for Blackboard and author of numerous white papers and organizer, speaker or attendee at education conferences worldwide. During his service at Blackboard the company grew substantially, from a publicly traded company (2004) to a purchase (2011) by Providence Private Equity.

*Knowledge Base, LLC,* From 1998 Freedman has been owner and general manager of Knowledge Base, LLC, www.KB-LLC.com, a higher education strategy consultancy established in 1998 to help education technology corporations, publishers, research institutes, museums and government agencies manage their strategic transitions into technology and media-driven markets.  Knowledge Base has a fifteen year history of providing strategy, business and market development services to a wide range of traditional, emergent and disruption organizations and corporations.  Through his consultancy, Freedman is able to develop and maintain a substantial network of technologists, educators, business and government leaders.   Select Higher Education Consulting Clients include: University of California Santa Cruz , University of California Irvine, Capella University, Michigan State University , George Washington University Case, Rochester Institute of Technology, Western Reserve University, and California State University Monterey Bay.

***TextCentric, Inc***., Acting CEO, 2002-2004: Freedman led this Carnegie Mellon-associated early pioneer in digital textbook and digital conversion for the textbook publishing industry.  Clients: Pearson Choices, Key Curriculum Press.

***Prometheus***, Executive Vice President, George Washington University, 2000-2002: Freedman helped build and lead to market the innovative learning management system (LMS) Prometheus. The organization based at George Washington University was the first enterprise LMS and a pioneer in the distribution of digital text and learning resources.  Freedman managed strategic sales to numerous leading universities in the U.S. and made alliances with high-tech firms.

***HungryMinds.com***, Vice President University & Publisher Relations, 1999-2000: At the first Internet portal for online education and online textbooks, Freedman ran alliance development and managed strategic accounts with publishers, universities and technology vendors.

***California State University Monterey Bay***, New Business Officer, 1996-1999: An early hire in the start-up university, Freedman ran business development for science, media, and technology.  He assisted in the building of a fee-for-service media business, did early planning for the science building, and served as liaison to UC Santa Cruz's MBEST Center, UC Berkeley's Extension, University of Michigan's Academic Outreach, New York University Online, and UMUC.

**KEVIN LYONS**, *Director Business & Finance, National Laboratory for Education Transformation*

Kevin Lyons is a serial entrepreneur and professional investor with a passion for deeply reforming education and promoting disruptive innovation in other institutional settings.  He has academic experience as a student who has studied in elite doctoral programs in chemical engineering and business administration. He has also been a professor and developed major and class curricula at the college level. He brings a wealth of expertise in finance, business strategy and technology development to the project and has advised numerous companies in all aspects of new business development.

Mr. Lyons has spent the last 17 years in finance, high-tech business and engineering, most recently as founder of a hedge fund and several privately held software companies and beginning from 1996 to 1999 with work in corporate and business development at Symyx Technologies (Nasdaq: SMMX), where he reported to the President. Prior to being recruited to join Symyx, Mr. Lyons was enrolled in the PhD program in Business Administration at the Haas School of Business at the University of California at Berkeley where he researched a variety of behavioral economics, transaction cost and complex valuation topics. He has received an M.S. in Business Administration from the University of California at Berkeley, where he concentrated in Law and earned an Olin Law and Economics Fellowship. Mr. Lyons also holds an M.S. in Chemical Engineering from the University of California at Santa Barbara where he was a University Fellow, and a B.S.Ch.E. from Cornell University where he was the top undergraduate in his major.

**TERRY MILES**, *Director of Technology, Assessment & Instructional Design, National Laboratory for Education Transformation*

Terry Miles has worked successfully on all elements of the online assessment value chain:  business development, content development, test design and delivery, hand and machine scoring, program management, program evaluation, and the design and delivery of all technology systems needed to perform in this market space.  He has helped his teams win over $100 million in assessment and education technology revenue, allocate over $150 million in product development and implementation, and direct the strategy and execution of business units from 3 to 120 full-time employees.

Terry has been fortunate to build and manage assessment programs for K12, Higher Education, and Human Capital Management (HCM) audiences.  With Measured Progress, a K12 assessment provider, he led business analysis, user experience design, technical communications, and technical product support teams for Measured Progress as the company replaced all major applications in its technology portfolio.  As a representative of IT, he liaised with assessment and curriculum design teams to build new content and articulate it online, including the development of centralized and distributed scoring systems.  Terry also served as the inaugural Director of Educational Technology and Secondary Curriculum & Assessment for a school reform project in the United Arab Emirates (UAE).

The American Public University, the United Arab Emirates University, and the University of Ulsan (South Korea) afforded Terry with the opportunity to design assessment item banks and online assessment systems, managing technology and instructional teams.  An important commonality among these efforts was the initial lack of structure in terms of program-wide learning objectives and standards and an eventual installation of extant frameworks, such as the Common European Frameworks and 21st Century Learning Skills, that could unify (if not standardize) assessments among courses and even departments.  His current work involves the selection of courseware for an American online university that has adopted a competency-based approach, deepening his interest in building frameworks that can both standardize assessments and make them more authentic in terms of the tasks that learners demonstrate.

Terry's HCM experience includes the design and installation of training and assessment systems at Norfolk Southern Railroad; OmniSource, Inc. (a US Steel subsidiary); and for the staffs at Ministries of Education and Higher Education in the UAE and South Korea.  In addition, Terry has consulted on instructional projects with a variety of clients including Johnson & Johnson, Merck, DuPont, Novartis, Schering-Plough, Roche, Bristol-Myers Squibb, American College of Physicians, AIG, Liberty Mutual, Sharp Electronics, Matsushita (Sony), and Panasonic.

**Dana Offerman**, *Academic Advisor and Project Consultant*

A passionate and proven higher education leader with demonstrated ability to successfully articulate a vision and execute strategies within all sectors of higher education:  public, private not-for-profit, and private for-profit institutions as well as a complex and diverse state university system.  Accomplished in gaining consensus and support for an institutional vision, planning, development, execution, assessment, and team building—human resource management, faculty development, curriculum, change management.  Demonstrated ability to achieve results, adapt to change, collaborate and innovate.  Committed to high quality academic standards, business efficiency, diversity, and access.

- Vice President Academic Affairs, Rio Saldo College, 2012-2013
- Provost and Chief Academic Officer, Excelsior College, 2006-2011
- Vice Provost, Assessment and Institutional Research, Capella University, 2002-2005
- Interim Director, Office of Curriculum Development, Capella University, 2005
- Director and Senior Academic Planner, PK-16 Initiatives, University of Wisconsin System, 1994-2001
- Director, Continuing Education and Outreach, University of Wisconsin-Stevens Point, 1988-1994