PESC 2.0

Unlocking the Power of Data℠
PESC 2.0

UNLOCKING THE POWER OF DATA™

November 12, 2009

© Copyright 2009. Postsecondary Electronic Standards Council. All rights reserved.
# Table of Contents

1. Executive Summary .............................................. 1  
2. About PESC ........................................................... 4  
   - Mission, Vision and Goals  
   - History  
3. Why PESC ......................................................... 6  
   - The Landscape  
   - The Evolution  
   - The Value  
4. Products and Services ............................................. 9  
   - Current Products and Services  
   - Initiatives in Process  
   - Future Initiatives  
5. Adoption and Impact ............................................. 19  
   - Seal of Approval and HotSpots  
   - Best Practices  
   - Implementations  
6. Scale and Market Incentives ................................. 20  
   - Political  
   - Economic  
   - Strategic  
   - Technical  
7. Financials ............................................................. 24  
   - Historical Business Model  
   - New Business Model  
   - Projected Budget  
8. Leadership & Governance .................................... 28  
   
Appendices  
   a. PESC Board of Directors  
   b. PESC Membership List  
   c. Membership Brochure and Dues  
   d. Articles and News  
   e. Endorsements  
   f. Hearings and Testimony
EXECUTIVE SUMMARY

Better, faster, and of course cheaper. Familiar demands that drive all industries. Higher education is no different. Students now growing up in the golden age of technology expect a certain level of sophistication throughout their higher education experience. The student is the most valuable asset of higher education and stakeholders must work together and support, as our highest priority, the success and achievement of the student along the entire lifecycle.

After all, finding and applying to the right college, taking the required tests, getting the appropriate financial aid, acclimating to the campus environment, and choosing the right career path while juggling life and employment obligations are all difficult enough. Emerging technologies, international health and financial crises, a constantly changing global economy, and new laws and regulations continue to shape, and sometimes disrupt progression along this lifecycle. Welcome to the new normal.

A significant level of complexity is added now too with the increase of adult learners and with the majority of students either transferring to multiple institutions or enrolling simultaneously in multiple institutions. As many of these factors continue to shift, the ability to measure success and achievement has subsequently become more difficult and more costly. Reliance on and demand for quality data to drive and inform decision-making and on cost-effective solutions has therefore emerged.

Yes, data, like students, are constantly in motion. Yet due to long-standing proprietary methods and lack of a common, sustainable infrastructure, our ability to communicate data about a student effectively and efficiently is, at best, disjointed and exceedingly costly. Our current systems were simply not built with mobility of data in mind; and consequently we all pay the price. We can and must do better.

Mobility and changing learning patterns together obsolete long-standing paradigms and drive the reengineering of how data systems are built and used.

The ability to create, collect, store, share, exchange, federate, report, anticipate, and protect education data must be automated through an open, accessible, and easy-to-use process. PESC – the Postsecondary Electronic Standards Council proposes EdUnify, an agnostic, federated, decentralized network for postsecondary student data as the solution. Similar networks, like the ATM network in banking, already exist in other industries and serve as a best practices model. Like the ATM Network, EdUnify will simplify access to data, improve data quality, lower the cost of managing data and data systems, and accelerate performance and service over the long-term.

Establishment of EdUnify requires that we first agree on student achievement as our highest, shared value. We must commit to work together in coopetition, that is competitors and stakeholders working together in cooperation for this greater common
good. We must agree on the use of common data standards and to their implementation as systems are being developed and built.

These values speak to the heart and mission of PESC. Stakeholders in higher education came together voluntarily in 1997, and with a proactive spirit, formed PESC as the non-profit leader and centralized clearinghouse dedicated to cost-effective connectivity between data systems, acceleration of performance and service, simplification of data access and research, and improvement of data quality along the higher education lifecycle.

Powered by the strength of volunteers from its membership base, PESC maintains a trusting, open and transparent environment. With this unique perspective we are breaking down costly, proprietary barriers, and we have mapped out a common, strategic path for the future. This path includes continued development of common data standards, establishment and support of data networks and infrastructure, common authentication and web services protocols enterprise-wide, seamless connections bridging postsecondary education systems to secondary and labor and workforce systems, and an eye on emerging technologies like social networking.

Together we are not only helping students across the country and all over the world, but with collaboration as a cornerstone principle, we are supplying administrators and executives, admissions officers, registrars, financial aid officers, CIOs, and architects the tools they need to do their jobs better. The political will and demand for improvement have never been greater and continue to increase with time as budgets tighten and common solutions like standardization are being viewed as wise, cost-saving investments.

With membership from all leading stakeholders in higher education, PESC was designated as the umbrella organization to coordinate and advocate for standardization and interoperability across higher education. We boldly accepted that mission and have worked diligently to establish a proven record of success and achievement. We now elevate the mission to the next level.

Now is the time. PESC is the place.
Embrace common standards and data systems so we can know where we stand and how to move forward.

– Bill Gates

National Conference of State Legislatures
July 21, 2009
ABOUT PESC

MISSION STATEMENT
Through open and transparent community participation, PESC enables cost-effective connectivity between data systems to accelerate performance and service, to simplify data access and research, and to improve data quality along the higher education lifecycle.

VISION STATEMENT
PESC envisions national and international interoperability, that is a trustworthy, interconnected environment built by and between communities of interest in which data flows seamlessly from one system to another and throughout the entire eco-system when and where needed without compatibility barriers but in a safe, secure, reliable, and efficient manner.

GOALS OF THE MISSION AND VISION
To achieve the mission and the vision, PESC organizes activities to:

- **Accelerate Performance & Service**
  - PESC develops and identifies tools for operational efficiencies and performance improvement in student data exchange from postsecondary preparedness and initial access of the student from high school into the college environment through successful completion of the education experience and into the workforce.

- **Reduce Cost**
  - PESC promotes cost effectiveness of data alignment across disparate systems and across sectors that help mitigate costs for state and local governments and institutions struggling to keep up with the demands of technology and real-time data exchange while maintaining competitive tuition rates.

- **Lead Collaborative Development**
  - PESC leads the establishment and facilitates the adoption and implementation of data exchange standards through direct community participation. Workgroups are continuously formed and follow specific policies and procedures, governed by the Steering Committee of the Standards Forum.

- **Set & Maintain Common Data Standards**
  - PESC serves as a standards-setting & maintenance body with open, balanced policies & procedures. The Change Control Board (CCB) is the standing committee that reviews and approves standards.

- **Promote Best Practices**
  - PESC highlights and supports successful business models for data standardization, access, and exchange. A competition is held each year and awards are provided each spring.

- **Link Public & Private Sectors**
  - PESC maintains collaborative relationships with public, private, governmental, and international stakeholders in a balanced, neutral, and trusting environment.

- **Serve as Data Experts**
  - PESC continuously improves its expertise and core competency in XML architecture and data modeling. The Technical Advisory Board (TAB) is the standing committee that provides technical expertise.
HISTORY

On August 18, 1997, a critical meeting was convened at the National Center for Higher Education at One Dupont Circle in Washington, D.C. which resulted in the formation of PESC – the Postsecondary Electronic Standards Council. At that time, several major factors relating to modernizing data systems and standardization were emerging and the higher education community had reached the tipping point where a new, centralized, community-funded organization to promote and facilitate the use of electronic standards for data sharing and reporting was needed:

<table>
<thead>
<tr>
<th>Y2K</th>
<th>• The advent of the new millennium created a fear that systems may be compromised when the year 1999 rolled over into 2000. In preparing for Y2K, a global awareness emerged of “COBOL” and the importance of data and standards.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electronic Transcripts</td>
<td>• Electronic data exchange in the admissions and registrar functions (transcripts, test score, admissions application, etc.) were in the process of being developed and deployed. Benefits of standardization were being realized and other sectors of higher education were interested in realizing benefits as well.</td>
</tr>
<tr>
<td>FDSLP</td>
<td>• The launch of the Federal Direct Student Loan Program (FDSLP) in 1993 by the U.S. Department of Education as mandated by the U.S. Congress through Reauthorization of the Higher Education Act of 1965, which circumvented all bank and other private involvement in the loan process, introduced a single standard and banks found themselves needing to respond with standards as well.</td>
</tr>
<tr>
<td>Project EASI</td>
<td>• The U.S. Department of Education launched its Project EASI (Easy Access for Students and Institutions) “modernization” effort to reengineer their convoluted and disparate thirteen stovepipe systems. Maintenance and development costs for those systems were increasing exponentially; yet accessing those systems was difficult and obtaining accurate and reliable data took weeks and sometimes months.</td>
</tr>
</tbody>
</table>

Three major legislative items also helped in the creation of PESC:

- **The National Technology Transfer and Advancement Act (NTTAA):** Section 12 of the NTTAA, passed in 1995, states that “all Federal agencies and departments shall use technical standards that are developed or adopted by voluntary consensus standards bodies.”
- **OMB Circular NO. A-119:** The Office of Management and Budget (OMB) issued in 1998 Circular NO. A-119 which provides guidance for agencies participating in voluntary consensus standards bodies and procedures for satisfying the reporting requirements of NTTA.

---

Section 143 of the Higher Education Act of 1965: Language was added in 1998 which directs the Secretary of Education and the Chief Operating Officer [of Federal Student Aid within the U.S. Department of Education] to “encourage and participate in the establishment of voluntary consensus standards and requirements for the electronic transmission of information necessary for the administration of programs.”

On August 4, 2000, the PESC Board of Directors founded the Standards Forum for Education. XML development and applications were emerging in all industries, but PESC had identified an absence of any single organization responsible for developing XML business standards for the postsecondary community. The community embraced the Standards Forum for Education and together worked to develop and produce the first PESC approved standard, the XML Postsecondary Transcript, in July of 2004. Numerous development efforts have since taken place within the Standards Forum for Education and more and more are being proposed from within the community.

PESC has successfully created the environment envisioned in 1997 and now with its largest membership in its history and with its standards being implemented across North America, continues to serve the needs of the higher education community. The benefits of standards, once realized, spark the need for more standards, education and training, and other supporting mechanisms.

Why PESC?

The Landscape
Building, maintaining, and managing education data systems require significant resources, both human and financial. Systems providers must ensure they are meeting client needs while systems users must ensure they are providing satisfactory service to their customers whether those customers be students, parents, faculty, administrators, or regulators. Education presents one of the most complex challenges society faces. Stakeholders in education struggle with a number of competing and sometimes conflicting themes:

- **Education is a true American value that should be available and affordable for all.** We as a society hold near and dear to our hearts that every American is entitled to a good education. We struggle to make that education as affordable as possible without regulating or intruding too deeply into the autonomy of higher education.

- **Yet**

  - **Education is a true American industry that includes the private sector.** Business stakeholders provide high quality products and services and expect, like in any business line, a profitable margin for providing those products and services.
<table>
<thead>
<tr>
<th>Organizations compete to attract better students, faculty, and/or funding.</th>
<th>Yet</th>
<th>A unified education system requires collaboration. Stakeholders must work together in a common mission and purpose to ensure equal opportunity and service. Tradition and competition sometimes hinder collaboration.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Competition can hinder collaboration as to protect competitive edge, openness is not always encouraged.</td>
<td>Yet</td>
<td>Complexit commonly leads to unintended consequences. The complexity dealing with data and application incompatibilities is usually rooted in the methodology an organization employs in a specific sector or business process. Connecting to other sectors, other stakeholders or other applications is not incorporated in development plans. So rather than one system being able to snap or plug into another, a single-use and very cumbersome connector is built between systems. The unintended consequence is lack of support for analytics, longitudinal studies, and other forms of interchange.</td>
</tr>
<tr>
<td>Yet</td>
<td>We accept and condone high IT costs by allowing them year after year. The historical use of information technology exaggerates costs by taxing institutions and stakeholders when data movement, reporting and interfaces are required across or between systems. The expenditures on information technology across education is spent locally by schools and institutions and departments, with little oversight and coordination. One can't build a city without a city plan, codes and enforcement. Data systems can't work together if expenditures are not managed to foster the goals of interoperability and interchange.</td>
<td></td>
</tr>
<tr>
<td>Yet</td>
<td>Unique nuances of certain institutions require customized integrations and implementations, sometimes very costly. As institutions struggle with keeping up with emerging technologies and with ensuring appropriate enrollment, single-use turnkey solutions seem the best approach.</td>
<td></td>
</tr>
<tr>
<td>Unique nuances of certain institutions require customized integrations and implementations, sometimes very costly.</td>
<td>Yet</td>
<td>Autonomy is often a muse for keeping the status quo. The proprietary designs and deployment are reinforced by “not invented here” motivations. Innovations are incremental and generally proprietary, reinforcing motivations to defend isolation and separation of systems and the management of data. Also, the governance of academic institutions complicates how systems are viewed inside and across the education ecosystem. Maintaining the status quo in data management is inefficient and ineffective use of the annual investment society makes in education data systems.</td>
</tr>
</tbody>
</table>

Achieving a superior level of data quality and integrity requires a systemic and highly organized approach. Data is a language and to fully understand the meaning and significance of data, the same tools are needed for data as language. Language requires the use of a vocabulary and dictionary governed by rules or grammar. Two entities not using the same vocabulary and grammar will not be able to communicate or hold a conversation, and therefore not succeed in reaching mutually beneficial desired goals and outcome. An interpreter who understands both languages can communicate to each in its own language and therefore enable a conversation to happen.
THE EVOLUTION

Due to its history and mission and the organizations that help support the organization, PESC creates a uniquely balanced and trusting environment in which all these factors are considered. Yes many factors may conflict with one another, but all must be considered nonetheless; none should or can be ignored. PESC works to ensure that all factors are identified, that discussion and development is open and transparent, and that all stakeholders are made aware of how progression will occur.

In higher education, before PESC, there was no single language for data. In order for organizations to communicate, excessive time and money was required to identify and implement data exchange protocols. Over the years, IT costs have continued to soar into the billions, and higher education stakeholders now understand, driven by customer demand, the need for a certain level of cost containment and mechanisms to manage the overall process.

Because of PESC’s unique disposition, PESC approved standards are used in almost every college and university in the country and throughout the provinces of Canada. Significant outreach is occurring as well to European organizations looking to build and maintain standards. By creating and reinforcing proactive development of data and process specifications, education data systems will evolve to address the problem far better than random pressures.

PESC is a community of organizations gathered to share data and process definitions, evolve interoperable methods of data exchange, foster reforms, improve measurements, and enable aligned efforts through community participation. As a community based, voluntary organization, PESC is chartered to address the development of data management specifications across stakeholders who desire reuse of data definitions, clarity on how data and processes interact and evolve a software development community reinforcing adoption.

The call for better data management is powerful, whether at the macro level serving policy, at a governance level serving administration of schools and institutions or at the micro level serving learners. Developing comparable data measures and managing data movement has never been harder or more costly to education. Tracking academic progress spanning institutions, through the student life cycle, from the onset of aspirations to the success of learners and attainment of various milestone credentials is critical. The industry needs electronic bridges and pathways to optimize student assessment, placement, progress reporting and the interchange of data along the pathway of achievement.

THE VALUE

PESC exists because organizations need data standards to operate in today’s national and international markets. In serving the public and its members, PESC is an objective,
501(c)(3) non-profit organization overseeing the data specification process that creates a trusted, open and collaborative environment ensuring neutrality and a common meeting place. PESC is the only data standards-setting body in higher education that identifies higher education as its primary target audience. PESC membership spans all sectors and stakeholders of education from colleges and universities; to data, software and service providers; to commercial and non-profit organizations; to state and federal government agencies, and; other higher education associations.

PESC understands that standards require constant nurturing and maintenance. As a result, PESC has developed an industry neutral data dictionary and has implemented open, transparent processes to govern and update that dictionary. Use of a single dictionary to communicate data presents a number of challenges and PESC mitigates those challenges through "coopetition", that is the creation of a collaborative environment of "cooperation among competitors" for the greater common good. Overall, PESC’s value includes:

- Broad public/private representation in a growing membership
- Experience and success in creating XML schemas
- Agility and a focused mission
- Strong, active, and engaged Board of Directors
- Fundamental, strong partnerships with AACRAO, DQC, FSA, IES, NASFAA, NCHELP, SHEEO, and SIFA
- Significant involvement of major vendors
- Minimal financial burden to participate
- National and international recognition and credibility
- Solid and proven infrastructure
- Deployed XML Registry & Repository
- Collaborative work processes
- A trusted, balanced and neutral environment
- Core competencies in XML architecture & data modeling

**Products and Services**

**Current Products and Services**

PESC serves its members and higher education not only through the development of standards but through a variety of events and activities. Over the years PESC has held national annual meetings and conferences, hosted a number of standing committees and workgroups, initiated the Standards Forum for Education in 2000 which is presently developing a number of XML standards, administered the XML Registry and Repository (with FSA), produces a high quality monthly newsletter a number of white papers, and has the highest number of organizations in its membership to date. With the major stakeholders participating, evidenced by our Membership, PESC correspondingly
garners respect within the higher education community. Main events and activities include:

### MEETINGS, CONFERENCES, AND TRAININGS

<table>
<thead>
<tr>
<th>Event Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Annual Meeting on Technology and Standards</td>
<td>Innovative and emerging technologies are presented and discussed by leading industry experts, held each spring in Washington, D.C.</td>
</tr>
<tr>
<td>Bi-Annual Membership Meetings</td>
<td>Are held during fall and spring summits and provide an opportunity for the Board and the membership to drive PESC forward.</td>
</tr>
<tr>
<td>Annual Fall &amp; Spring Summits</td>
<td>Include in-person meetings of all workgroups and committees.</td>
</tr>
<tr>
<td>Training Sessions</td>
<td>At numerous annual conferences including AACRAO, Datatel User Group (DUG), Educause, FSA’s Electronic Access Conferences (EAC), NASFAA, NCHELP, Oracle’s Open World, SHEEO, SunGard Summit, among others.</td>
</tr>
</tbody>
</table>

### WHITE PAPERS

<table>
<thead>
<tr>
<th>White Paper Title</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Briefing on the Assessment of Documentation Standards</td>
<td>Reviews the most common documentation standards and provide strengths and weaknesses of each as input toward determining if a documentation standard should be set for PESC; and recommends further PESC action</td>
</tr>
<tr>
<td>Extensible Markup Language for Electronic Transactions in Higher Education</td>
<td>Assists the members of PESC and the broader postsecondary education community in making sense of XML developments and how they relate to the needs of the PESC community.</td>
</tr>
<tr>
<td>IFX and ebXML</td>
<td>Provides a brief overview of the differences between IFX Forum standards and ebXML technical specifications and standards based on them</td>
</tr>
<tr>
<td>Namespaces and Schema Organization</td>
<td>Provides a brief introduction to namespaces and schema organization</td>
</tr>
<tr>
<td>Public Key Infrastructure and Higher Education</td>
<td>Examines the purpose of PKI and how it works in general, shows how it has been implemented to date in higher education and elsewhere, discusses various models of PKI and the issues involved in an open PKI system, and presents our recommendations for PESC support of PKI in higher education</td>
</tr>
<tr>
<td>Student Identifier</td>
<td>Looks at identifiers that might have potential as single student identifiers to be used when appropriate across the higher education enterprise, advantages and disadvantages of various identifying numbers, and presents policy makers with the pros and cons of using potential single identifiers.</td>
</tr>
<tr>
<td>Web Services</td>
<td>Studies, analyzes, and reports on Web Services. Included in this white paper are definitions and descriptions along with examples of web services in higher education today, and recommendations on how PESC and the education community should address and structure web services</td>
</tr>
</tbody>
</table>

### ONLINE RESOURCES

<table>
<thead>
<tr>
<th>Resource Title</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>XML Registry &amp; Repository</td>
<td>Built and administered by the U.S. Department of Education to store all PESC approved standards in a free and open environment</td>
</tr>
<tr>
<td>Technical Resource Center</td>
<td>A resource on PESC’s website that hosts various articles, information, and links on technological topics, such as XML, Web Services, EDI, Authentication, Data Transport, and Open Source, among others</td>
</tr>
<tr>
<td>Code Lists</td>
<td>A variety of code lists are hosted on the PESC website</td>
</tr>
<tr>
<td>Technical Specification Process</td>
<td>Outlines the methodology and architecture supported by PESC and the U.S. Department of Education’s Office of Federal Student Aid (FSA)</td>
</tr>
<tr>
<td>PESC Website</td>
<td>Provides technical information, stores standards and data, and serves as a</td>
</tr>
</tbody>
</table>
PESC convenes its membership activities and events twice per year, once in the spring, and once in the fall. Full programs are arranged, leading experts and speakers are brought in to discuss emerging technologies, and workgroups meet to progress the development of new standards. Examples of some of those meetings and events are illustrated on the next page.
PESC’s newsletter – The Standard – reports on the latest activities of PESC and highlights major announcements from member organizations and partners. Data exchange statistics, industry meetings and events, informative interviews, and news from the U.S. Department of Education are also included. A sample of The Standard is illustrated to the left.
Systems must be designed to meet the standards and guidelines of NCES...including the schemas of PESC...

– Grant RFA for Statewide, Longitudinal Data Systems

American Recovery and Reinvestment Act of 2009
July 24, 2009
INITIATIVES IN PROCESS

- New source control tools – PESC’s Technical Advisory Board (TAB) is on the continuous lookout to improve the process and integrity of the schema development, storage and look up functionality. Due to the current size and complexity of PESC’s work, the TAB is analyzing a number of technical tools in order to make final recommendations to PESC’s Board Directors.
- **Seal of Approval** – an assurance granted by PESC to signify that an implementer meets the intent of how the standard and/or service was intended to be used. Administrative and operational policies and procedures are being developed and implemented so that the Seal of Approval can be launched shortly.
- **User Groups and Task Forces** – the following committees were formed to focus on successful end results of broader business processes and topics.
  - Electronic Authentication and Authorization Task Force (EA2), which serves as an informational clearinghouse on authentication and role-based access and coordinates implementations of best practices.
  - Education Record User Group (ERUG), which manages the enhancement and maintenance of existing PESC approved standards that make up the higher education record.
- **Workgroups** – membership-based workgroups are currently meeting for the development and implementation of the following common data standards:
  - Academic Progress
  - Course Inventory
  - PDF Transcript

FUTURE INITIATIVES

1) Launch of **EdUnify**
2) Continued development of common data standards
3) Increased education and awareness of EA2
4) Publications and Communications
5) Services & Training
6) Launch of Social Media & Networking Task Force
7) Establishment of PESC Executive Advisory Committee

**EdUnify**

**EdUnify** is a common, agnostic, federated, and decentralized business-to-business network for services related to postsecondary student data and data exchange. The main functionality features include:

- Delivery and exchange agent
- Lookup agent
- Transfer of credit agent
- SIFA/PESC agent
- Seal of Approval
Its first phase will be offered by PESC in the fall of 2010. EdUnify will provide a national network for data exchange and will be developed to advertise, secure, track and access the data exchange services offered by stakeholder applications utilizing a shared platform. It will enable machine-to-machine lookup of integration and data exchange services, interrogation of protocol, method, payload, rules, verification and authentication.

EdUnify will be federated and licensed to EdUnify Registrars responsible for recording and servicing the shared directory, following strict procedures jointly created and managed by a PESC sponsored Task Force. The Lookup Service would be seamless and enable system interoperability across technology stack, enabling stakeholders, including system implementers and integrators, to secure and trust EdUnify to augment their request and reply services independently.

The first phase of the Lookup Service includes the identification of Registrars and representatives to serve on the development Task Force which will be established in the fall of 2009. Once established development encompasses two components: first, the development of the directory functions and second, the development of the lookup services. Once developed, the EdUnify Registrars would be given a license to deploy and host the Lookup Service on servers connected together in a federated network. They will be responsible for availability and maintenance of the hardware and the deployment of the software infrastructure following the anticipated specifications. Registrars will follow ongoing maintenance procedures governed by the EdUnify Task Force and administer the fees for using the Lookup Service according to the price schedule published.

The organizations that host the EdUnify servers will be designated as HotSpots, which are intelligent directory nodes that meet a minimum set of standards-based requirements. HotSpots and PESC’s Seal of Approval together will communicate to the community an organization’s support of efficiency and cost-effectiveness.

The fees will generally cover the registration of integration services and the use of the lookup functions by authorized users who register with the service. Registrars could add additional services and products linked to the EdUnify directory. There would be a common front-end application to automate and monitor the directory and Lookup functions, which would complement the machine-to-machine automated interface that would be logged and audited by the Registrars.

Important to note is that no central repository or direct user access exists with EdUnify. EdUnify maximizes an organization’s functionality for its own client base. In being a business-to-business service, it does not impede in the stakeholder application’s client relationship but enhances it as an organization through hosting of the EdUnify network provides the connectivity needed.
Following establishment of this first phase, PESC will focus on expanding the use of this common federated network by the fall of 2011 with phase 2 to include delivery and exchange and a SIFA/PESC agent. Phase 3 for the fall of 2012 will include a transfer of credit agent.

**Continued Development of Common Data Standards**

The results of an online survey conducted by PESC to its membership during the summer of 2009, rated *recruitment* as the sector most in need of standardization. In continuing its focus on access and to ensure that standards are included as recruitment processes are being impacted by new and emerging social networking technologies, PESC is launching a Recruitment and Enrollment Workgroup in the fall of 2009. For the same reasons and due to the same circumstances, PESC will launch an e-Portfolio Workgroup in the Spring of 2010.
Other processes will be monitored to determine the feasibility of standardization and the PESC membership remains able to propose new ideas and workgroups as needed. PESC is working very closely with states to help identify the need and development of state-based longitudinal common data standards. As this sector begins to unify, PESC has ensured that standards development is considered at initial systems development and not as an afterthought. The exchange of standards is envisioned to travel over the EdUnify network.

**Increased Education and Awareness of EA2**

PESC identified electronic authentication many years back as an important and long-term priority and has been providing much needed education and coordination of efforts. As the market sector supporting electronic authentication has since matured, the leaders of EA2 now believe it is time to initiate several additional strategic efforts:

- Identify and communicate how federated identity benefits students, parents, and faculty
- Educate senior leadership at colleges, universities, and states on the importance of EA2 and the cost-effectiveness of good implementations
- Establish a working group to standardize attributes that are passed and shared among various identity management applications
- Engage FSA to launch a number of pilots and to collaborate with existing federations in higher education
- Seek out grant opportunities to support the above initiatives

Some of these topics will be worked on or morphed into other initiatives. Education, outreach and communications may be directed to the Executive Advisory Committee or to Services and Training, both detailed below. Specific tasks that are unique to the EA2 will be identified separately.

**Publications and Communications**

A series of publications and communication mechanisms (webinars, white papers, etc.) will be published to educate the community and policymakers about the importance of standards. To continue the theme of open collaboration, PESC will partner with strategic organizations based on topics and core competencies to develop the series.

Proposed topics include:

- **Decoding the DNA of Data Systems: The Value of Common Data Standards in Higher Education**, partner with Educause and SHEEO.
- **Resistance is Futile: Emergence of Federated Networks**, partner with Educause, Georgetown University, InCommon, and Meteor.
- **SOA in Higher Education**, partner with IBM and U.S. Department of Education.
- **Strategic Integration and Cost-Savings with Electronic Standards**, partner with Kuali Student and NACUBO.
Theme papers will be developed to ensure consistency of message as the communications may be executed through various mechanisms. One completed topic per year will be delivered from 2010 through 2013.

Services and Training
As PESC approved standards and tools continue to be implemented, the need for technical and implementation support increases. To ensure support is provided, current Workgroups, User Groups, and Task Forces voluntarily answer questions, review case scenarios, and provide direction to the many inquiries that flow through the PESC office.

As all development and implementation efforts must meet specific timelines and milestones though, the ability to provide immediate guidance must also be formalized as a high priority. Untimely response can be a significant obstacle in systems development and sometimes voluntary support is simply insufficient.

To ensure that those in need of support have an immediate and responsive sets of resources, PESC envisions formation of a pool of independent consultants that meet certain requirements to provide support under a PESC umbrella. This program is envisioned to roll out by the fall of 2012.

Launch of Social Media & Networking Task Force
The impact of social networking in today’s world is unmistakable. A recent study, “Social Media and College Admissions: The First Longitudinal Study” by Nora Ganim Barnes and Eric Mattson of the University of Massachusetts Dartmouth Center for Marketing Research, found that between 2007 and 2008 there was a thirty-two percentage point spike in the use of social networking applications in college and university admissions offices.

Student and consumer behavior changes how data is shared and pushes the need for mobile data to another yet higher level. In order to keep pace with the impact of social networking on the higher education lifecycle, PESC proposes the formation of a Social Media and Networking Task Force for the Spring of 2010. This Task Force will study the use of social networking, how it is being used, the media and devices that support social networking, and recommend future action for the PESC community.

Establishment of PESC Executive Advisory Committee
Many organizations are directly engaged with PESC and many others are interested yet either cannot provide financial or human resources to help support the daily development effort or are unable to serve on the Board of Directors. To ensure that communications, strategy, and transparency are maintained with all primary stakeholders, an Executive Advisory Committee will be formed in the Fall of 2010.

The Executive Advisory Committee may meet a few times a year in person or by phone and will serve to advise and direct the PESC Board of Directors on the needs of the higher education community. The committee may also serve as a stepping-stone to the
PESC Board of Directors. Organizations which fit these criteria include but are not limited to:

- CCSSO – Council of Chief State School Officers
- DQC – Data Quality Campaign
- Educause
- FSA – Federal Student Aid of the U.S. Department of Education
- IES – Institute for Education Sciences of the U.S. Department of Education
- InCommon Federation
- Kuali Student Open Source System
- NACAC – National Association of College Admissions Counselors
- NACUBO – National Association of College and University Business Officers
- SHEEO – State Higher Education Executive Officers
- SIF Association
- States of California, Georgia, Indiana, Ohio

ADOPTION AND IMPACT

SEAL OF APPROVAL & HOTSPOTS

The PESC Seal of Approval helps the community to determine what products and services have received a Seal of Approval and which are in the application process when distinguishing between a number of different products and services. The Seal of Approval also offers market exposure to these products and services as well as an affirmation by the PESC members that the approved products have followed certain PESC standards and processes.

The program is designed to advance interoperability by providing recognition to organizations that have adopted and implemented the data exchange standards as approved by PESC’s members. The program, operated and carried out by PESC members, is voluntary and open to any organization’s product or service meeting the conformance requirements.

A designation as a HotSpot helps the community to determine which service providers host and are connected to the EdUnify network. With EdUnify connectivity to the network is the key and a designation as a HotSpot can be marketed as a company’s or organization’s high level of service in being connected to the network.

PESC’S BEST PRACTICES COMPETITION

Now entering its eleventh year, the Best Practices competition is held to promote innovation and ingenuity in the application of standards for solving business needs and
their implementation. First instituted in 1999, the competition is open to associations, organizations, institutions and individuals that have made a concerted effort to design and implement an electronic standardization initiative via a published article or other medium.

In 2008, *California Statewide Electronic Exchange Program* (CCCTran) submitted by the California Community College System tied for first place along with *Implementation of High School and Postsecondary XML Transcripts* submitted by the University System of Georgia Board of Regents. Both submissions involved successful, large scale implementations of PESC approved standards that required strong project management and open collaboration.

In 2007, Sinclair Community College and Wright State University submitted the *Exchange of Electronic Transcripts via Ohio Board of Regents Articulation and Transfer Clearinghouse*. This submission involved a smaller scale implementation of PESC approved standards as users of a state-based hub-and-spoke network model.

Winners receive national recognition through many channels and are provided the opportunity to present their winning submissions during PESC’s annual meetings and events.

**IMPLEMENTATIONS**

PESC approved standards for financial aid (federal grants and loans) are implemented in almost every college and university in the country. Many states and systems have also adopted and implemented PESC approved standards for transcript processing (California Community College System, University System of the Georgia Board of Regents, States of Ohio and Indiana, etc.) along with the provinces of Alberta and Ontario in Canada.

True interoperability requires that all stakeholders participate at some level of uniformity. With more and more implementations occurring with common data standards, organizations are now realizing the importance and need for a connected network. PESC will leverage its accumulated strength and momentum to impact the market to ensure unification under a common network.

**Scale and Market Incentives**

**Political Factors**

As no single law or mandate can standardize higher education in its entirety, PESC reaches out to a number of organizations to partner, manage, and track political activities.
Partnerships

PESC maintains eight very important and primary partnerships with:

1. the U.S. Department of Education’s Office of Federal Student Aid (FSA)
2. the U.S. Department of Education’s Institute of Education Sciences (IES) and its National Center for Education Statistics (NCES)
3. the Standardization of Postsecondary Education Electronic Data Exchange (SPEEDDE) Committee of the American Association of Collegiate Registrars and Admission Officers (AACRAO)
4. the Electronic Standards Committee (ESC) of the National Council of Higher Education Loan Programs (NCHELP)
5. the Technology Initiatives Committee of the National Association of Student Financial Aid Administrators (NASFAA)
6. the SIF Association (SIFA)
7. the Data Quality Campaign (DQC)
8. State Higher Education Executive Officers (SHEEO)

“We’ve been in an economic crisis for a year or so. But we’ve been in an education crisis for decades.”

– Bill Gates

National Conference of State Legislatures
July 21, 2009
With all eight partners, PESC holds joint meetings and events, cross promotes events and activities, and works collectively across all sectors of higher education. New laws and regulations, approaches to foundations, and all major political influences are discussed and coordinated appropriately.

**Liaison Relationships**
PESC’s Executive Director has maintained a seat on Oracle Corporation’s Higher Education Executive Advisory Board, the SIFA’s Education Advisory Panel, as Chair of the Electronic Authentication Partnership (EAP), and Co-Chair of the Liberty Alliance’s Identity Assurance Expert Group (IAEG). Additionally, the following organizations are active with PESC and are either aware of or engaged in our efforts:

1. Council of Chief State School Officers (CCSSO)
2. HR-XML
3. IMS Global Learning Consortium
4. InCommon Federation & Internet2
5. Joint Information Systems Committee (JISC) – UK
6. OASIS
7. Office of the Undersecretary of Education
8. Open Source Student Services System
9. U.S. House of Representatives
10. U.S. Senate

**ECONOMIC FACTORS**
Working collaboratively in an open, common environment presents many challenges especially since every organization looks to promote its uniqueness.

“Coopetition”, that is cooperation among competitors for the greater common good, is achieved under PESC due to the following factors:

1. The PESC community agrees to not compete on data exchange, that the education network/super highway is a necessary commodity.
2. Standards development is consensus-based and implementation is voluntary.
3. PESC community agrees to compete on price and service.
4. There are a small number of SIS vendors that make up most of the market.
5. The sales cycle for systems and/or implementing standards and the retention rate for purchased or leased systems are multi-year.
6. As it is not a data, software or systems provider, PESC itself does not benefit from the national standards agreed upon by the education community.
7. Ability to rely on consistent, accurate data standards saves time, money, and frees administrators up to focus on the needs of students.
8. PESC networks and standards are business-to-business based allowing data, software and systems providers to connect to one another in a federated exchange
network and thereby enabling those providers to offer and manage services to their customers through the network.

**STRATEGIC FACTORS**

Shifting paradigms are increasing the need for standardization and coopetition:

1. The traditional student (4 years at the same institution) is no longer the major model of student behavior.
2. The rate of transfer students and adult learners; and dually enrolled and simultaneously enrolled students is increasing.
3. Leaders are now demanding data driven decision-making and are providing the political will and funding.
4. The need for longitudinal data and data alignment along the entire student lifecycle PK20 is emerging.
5. The focus for the future is on student achievement.
6. Collaboration - our cornerstone principle - through PESC, a neutral objective third party, levels the playing field and allows a trusting environment.
7. Pressure for real-time data exchange and inquiry will continue to prompt development over the next several years.

PESC’s target market are those organizations that exchange (send and/or receive) student data. Since eighty percent of colleges and universities buy student information systems from vendors and commercial organizations, PESC’s target includes SIS vendors as well vendors providing Software as a Service (SaaS). Originators of student aid (loans and grants) are PESC targets too.

**TECHNICAL FACTORS**

While all various industries can be described as unique and unlike another industry, peculiarities of higher education include:

1. Higher education lags other industries in the use of standards and in the level of efficient interoperability.
2. Policymakers and decision-makers either believe that the infrastructure for standards and interoperability has already been built or that the current methods, even if cost-prohibitive or inefficient, are acceptable and condoned.
3. While the number of vendors may not change, the number of students entering the higher education sector will be increasing over the next several years. This increase in numbers of students will bring with it, higher demand for interoperable products and services as experienced in other sectors and a testing of our currents systems.
4. The technology is available and has been for a number of years. The technology itself is not the obstacle. Business interoperability must coincide with technical interoperability in order to achieve maximum overall interoperability.
FINANCIALS

HISTORICAL BUSINESS MODEL - REVENUE

PESC’s business model has historically been fueled by tiered membership dues which account for about ninety percent of total revenue while conference and meeting registration fees, sponsorships, and interest account for the remaining 10 percent.

Historical Revenue Model

Annual Revenue Generation

FY (July 1 - June 30)
Even with no outside funding or grants and with unexpected and unbudgeted changes in staffing, PESC has continued to operate with diligent fiscal responsibility over the years. Much of this success is attributed to the strength and dedication of volunteer efforts through the membership community. However, PESC is approaching its capacity to further grow and expand under its current business model.

PESC has entered a pivotal turning point in its history. Since its founding, PESC has enjoyed unparalleled support from banks and the student loan industry. With the recent student loan and economic crises, PESC experienced a dramatic decline in that membership and support segment. As such, PESC has been aggressively focused on off-setting those lost memberships. Maintaining membership consumes time, energy and resources; and growing membership consumes ever more. PESC has, however, been successful in replacing much of the lost membership. Due to the limited diversification of revenue streams though, PESC has been unable to invest in key programs to further PESC’s mission and still remains subject to volatile economic markets.

The Board of Directors has set a three year goal to change the business model and diversify the revenue streams to provide significant growth and opportunity towards fulfilling PESC’s mission.

**HISTORICAL BUSINESS MODEL - EXPENSES**

Through diligence, transparency, and accountability, PESC has effectively controlled and managed expenses in alignment with revenue. A key part of managing expenses has been to focus on absolute necessities to operate while often postponing investment in key new programs and additional staff.

- **Salaries and Benefits**: PESC has two current fulltime staff which account for almost two-thirds of all expenses. In order to attract and retain staff, PESC offers competitive salaries and benefits such as health insurance and retirement.
- **Travel Expenses**: With international membership and presence, serving as a speaker, attending important meetings and events, and being able to vend at key annual conferences is ultimately important to the success of PESC and accounts for about 13% of overall expenses.
- **Other Expenses**: Operating and administrative expenses have been kept low and PESC runs with little to no waste or excess.
Important to note is that while PESC grew its revenue over the years, it also expanded the programs and services offered, therefore, expanding its expenses. Note that expenses in FY03 increased significantly due to an unbudgeted three-month overlap in executive directors.

**New Business Model**

PESC’s immediate goal is to secure three-year funding through mechanisms other than membership dues. Grants and usage fees of *EdUnify* are the primary targeted resources and are critical to the development and realization of PESC’s future.
initiatives. As the vision of the future initiatives is put into action, associated revenue will also be realized as increased development and implementation of common data standards will drive growth in membership, increased sponsorships, and greater event attendance.

The new sources of revenue are allocated to expanding organizational capacity, improving the quality of service, developing new standards and increasing the implementation of standards through training and awareness campaigns supported by implementation and technical services.

As programs and services grow, PESC will experience expansion which allows diverse sources of revenue and reduces reliance on membership support.

**PROJECTED BUDGET**

PESC will continue to support development of standards through its base of membership volunteers and to produce annual fall and spring in-person meetings. Efforts will still be directed to growing the membership and obtaining sponsors and registration fees for meetings and events. Existing online resources like The Standard and the PESC website will continue to be produced.

For new services like *EdUnify* which require constant support and maintenance, PESC will use existing staff to the extent possible and supplement those resources through additional staff and consultants.

**Proposed Revenue Model**

![Pie chart showing the distribution of revenue sources.](image-url)
- **EdUnify**: Expenses are projected for the ongoing operation, maintenance and support of the common federated network for postsecondary student data. While the responsibility of running operations and hardware may be assigned to third parties, PESC staff will play a key role in management and oversight of network performance. Usage revenue, along with fees from Seal of Approval and HotSpot designation, are expected to surpass expenses and continue to serve as a new, long-term revenue stream for PESC.

- **Consulting, Implementation, and Training Services**: Expenses are required in the development and delivery of service offerings, training materials, marketing and distribution of publications and materials. Revenue generation for these services, however, should exceed the expenses and provide a small but new revenue stream for PESC.

- **Standards Development Support**: This program requires consistent, technical resources to augment volunteer, membership-based efforts. Functions to be supported here include technical writing, project management of development efforts, meeting support and logistics, marketing, and overall support for development workgroups and user groups.

- **Technical Resources and Support**: The dramatic growth of new standards, combined with constant emerging technologies requires consistent support and deployment of state-of-the-art XML tools and solutions to ensure community access, development and maintenance.

- **Education and Outreach Support**: Consistent, accurate and centralized resources are needed to communicate efforts and initiatives through The Standard, through various social networking media, through the various communication initiatives proposed and with the various User Groups and Task Forces.

**Proposed Expense Model**

- Salaries & Benefits, 64%
- Operating Expenses, 25%
- Support Services, 3.5%
- EdUnify, 7.5%
The proposed expense model, based on figures from the table attached, illustrates how the salary and benefit expenses percentages will remain consistent and new products and services are initiated.

**LEADERSHIP**

PESC is governed by an international team of industry professionals and experts that provide strategic and financial guidance as members of the Board of Directors. The current roster of the PESC Board of Directors includes:

- **Chair** William Hollowsky, General Manager, SunGard Higher Education
- **Vice Chair** Francisco Valines, Director of Financial Aid, Florida International University
- **Secretary** Richard Skeel, Director of Academic Records, University of Oklahoma, Representing AACRAO
- **Treasurer** Doug Falk, Vice President & CIO, National Student Clearinghouse
- **At Large** Jeffrey Alderson, Director of Development, ConnectEdu
  - Brian Allison, Vice President of Technology & Industry Initiatives, Represents NCHELP
  - Russell Buyse, Vice President of R & D, Edudstructures/Pearson
  - Manuel Dietz, Managing Partner, unisolution
  - Russell Judd, Chief Industry & Government Relations Officer, Great Lakes Educational Loan Services, Inc., Representing NASLA
  - David Moldoff, Founder & CEO, AcademyOne, Inc.
  - Michael Sessa, President & CEO, PESC
  - Andrew Wood, Senior Director of Higher Education Development, Oracle

The standing committees of PESC include:

<table>
<thead>
<tr>
<th>Committee</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Steering Committee</strong></td>
<td>Governs the daily operations of standards development work within the Standards Forum for Education.</td>
</tr>
<tr>
<td><strong>Change Control Board (CCB)</strong></td>
<td>Governs the process by which a format or industry standard becomes a national standard.</td>
</tr>
<tr>
<td><strong>Technical Advisory Board (TAB)</strong></td>
<td>Provides technical expertise to all workgroups and committees of the Standards Forum for Education on XML, systems and data architecture, and data modeling.</td>
</tr>
<tr>
<td><strong>Workgroups</strong></td>
<td>The working foundation of PESC, workgroups are established for the definition and development of national standards, implementation guides, and instance documents.</td>
</tr>
</tbody>
</table>

PESC’s members and the collaborative environment created are the most important assets PESC has. PESC’s membership consists of colleges and universities; professional and commercial organizations; data, software and service providers; non-profit organizations and associations; and state and federal government agencies.
PESC’s hierarchy when all initiatives are fully implemented is illustrated below.
PESC – Postsecondary Electronic Standards Council
1250 Connecticut Avenue, NW
Suite 200
Washington, D.C. 20036
202-261-6516 (phone)
202-261-6517 (fax)
www.PESC.org
info@PESC.org
Tax ID#: 52-2179499
Version 1.0.0

PESC 2.0

UNLOCKING THE POWER OF DATA℠