W hen W eb S ervices Me et W eb Users

BY HEIDI L WEBER

PESC has often used the pages of The Standard to point out best practices, middleware, programming, development and countless other issues associated with the needs of postsecondary institutions as its focus is on B2B data exchange. Rarely, if ever, has it discussed the needs and expectations of the students, who turn to university websites everyday. Through a series of interviews about one family’s experiences, PESC in an effort to highlight the need for interoperable processes, is sharing with you a look at the postsecondary Web offerings from a student’s perspective.

In today’s acronym world, colleges, universities and the numerous entities that collaborate with and serve them, often become so entrenched in OASIS and W3C expectations when dealing with XML, EDI, HTML, they often forget how the whole process must come together for the U S E R.

When talking about Web Services in higher education, there is probably no greater time of reliance as in the admissions process. Through numerous interviews, I followed one high school student, Chelsea, through the application process from the early stages of FAFSA through five applications and ending with the final stages of enrollment.

Chelsea ultimately applied at and was accepted to five schools —Hofstra University, University of Maryland, University of North Carolina, Emerson College and New York University.

When I first visited Chelsea at her mom’s home, it was evident that hers was not a computerphobic family. With two desktop computers and three laptops residing in this three-person household, I wasn’t expecting to hear about technological barriers—I was wrong.

“I wanted to be able to do all my college application stuff on my laptop so it was with me wherever I went, but I couldn’t,” said Chelsea.

Chelsea’s laptop, a Macintosh Powerbook, was not compatible with some of the websites she needed to use because they often did not support the newer versions of Netscape or Internet Explorer for Mac.

“When I flew down to my dad’s house in Florida with the intention of getting all my [FAFSA] information finalized, I was frustrated to find out I couldn’t access the online version with my Mac,” said Chelsea. “The worst part was he has a Mac too, so I had to stay on the phone with my mom back in Maryland and relay all the information to her to fill in one of our Windows-based machines at the house. The whole trip was a waste from that standpoint.”
Over this past summer, PESC’s Board of Directors and Steering Committee held separate planning sessions to address and resolve strategic and tactical issues that PESC faces. The result of these sessions is a simplified and refined mission statement.

*PESC’s mission is to lead the establishment and adoption of data exchange standards in education. The goals of the mission are to enable the improvement of institutional performance and foster collaboration across educational communities in order to lower costs, improve service, and attain system interoperability.*

PESC will continue to promote and advocate for standards.

A refined mission statement leads to five key points:

1. **PESC will now focus on development AND implementation of standards.** In order to meet the goals of the mission and in order to realize the cost savings, service improvements and to reach interoperability, the standards have to be used. Sounds like a no-brainer, right? Well with a new eye on implementation, the responsibility of actually developing the standards opens up. PESC welcomes completed proposals and submissions for standards (e.g. schemas) developed collaboratively within the community and outside of PESC’s administration. With this new understanding, parties that have a common interest in developing standards can collaborate quickly and freely and then come to PESC to have an item reviewed and approved as a standard. This does not preclude PESC from developing or producing proposed standards, an option that may be necessary when there is no other logical source or entity available.

2. The XML Forum for Education has been renamed The Standards Forum for Education. While XML is being adopted throughout every industry and will continue to dominate the landscape for a few years still, XML is not the only technology. In order for PESC to maintain a standing committee that can react to and meet the needs of the education community, the focus needs to be broadened. The Standards Forum will continue to monitor all technologies, one of the most important being XML. The Standards Forum is the authority on standards, meaning it serves as the body that establishes PESC’s core criteria for how standards are evaluated, validated, and scored. The Forum contains a Review Committee and is governed by a 5 member-elected Steering Committee that reports up to the Board of Directors. A complete Policies and Procedures Manual is in the process of being developed and this manual will outline:

   - Submission, collaboration, and review criteria, including processes, requirements, and timeframes
   - Membership endorsement criteria and voting guidelines
   - Public comment and appeals procedures
   - Maintenance policies and procedures, including version control, issue submission and tracking.

   The idea here is that once submitted, proposals will be reviewed to ensure they were developed in accordance with PESC’s Collaboration Principles and validated against PESC’s Technical Specification and Data Dictionary, and then proposals will be presented to the PESC membership for approval.

3. To serve the community and to close an existing gap, PESC will serve as a centralized repository (library, catalogue, archive, etc.) for electronic standards. This means that PESC will house on its website, standards for all to view and download. Having a centralized location eliminates the confusion about what standards are available and where they are located.

4. While “student-related” data exchanges have dominated PESC’s activities, the Board, Steering Committee, and membership have clarified that PESC is open to all data exchanges, and not limited in any way.

5. A higher level mission that opens up activities and acknowledges progress throughout the community, raises the need for partnerships to a new level. Existing partnerships will be strengthened through new and innovative ways (eg. AACRAO, EFC, FSA, NCHELP) and new ones will be formed. Outreach is underway between PESC and Educause, IMS Global Learning Consortium, Schools Interoperability Framework (SIF), the American Council on Education’s (ACE) AARTS/SMART Committee, and the Center for the Advancement of Standards (CAS) in Higher Education.
Membership Meeting Update

At its bi-annual membership meeting held Tuesday October 21, 2003 in Austin, TX, the membership held annual elections for the Steering Committee of the Standards Forum for Education, approved seven (7) by law changes while the Board of Directors discussed the refined mission of PESC. PESC is pleased to announce the Steering Committee for the 2004 calendar year. The Steering Committee provides guidance and direction for all activities related to the Standards Forum.

- Ed Hauser, SCT
- Paul Hill, ED FSA
- Bob King, Citibank
- Adele Marsh, AES
- Bruce Marton, University of Texas at Austin

Changes made to the bylaws include:

1. Colleges and universities are able to join as full, voting members.
2. The Treasurer and Secretary are two separate positions.
3. Designated officers of PESC include the Chair of the Board of Directors, Executive Director, Treasurer, and Secretary.
4. The Executive Director serves as president and chief executive officer.
5. The number of elected seats on the Board of Directors is set at ten (10).
6. Quorum for the Board of Directors is set at two-thirds.
7. Organizations new to PESC Membership can initiate annual membership at any time.

Serving officer positions on the Board of Directors are Keith Riccitelli, Director of Global Sourcing at Sallie Mae, who serves as Chair; Steve Biklen, President (retired) of Citibank Student Loans and ASA Board of Directors member representing NASLA, who serves as Treasurer; Mark Jones, Vice President of Marketing and Business Development at the National Student Clearinghouse, who serves as Secretary; and Michael Sessa, who as Executive Director, serves as President and Chief Executive Officer.

PESC Schema policy

As a result of several issues that have come up with regard to development efforts going on within the community right now, the Standards Forum has drafted the following policy:

**PESC will create schemas that conform to W3C standards.** Every effort will be made to conform to the operating parameters of commercial and open source products in popular use. It is PESC’s committed intent to support all widely used technologies that may be available; however, we cannot guarantee usability or fitness of these schemas for any particular application. **Bugs and other errors will be remedied as quickly as time allows in accordance with our published review and change management procedures. PESC appreciates feedback and encourages users to report any errors.**

How to join a PESC workgroup

Interested in joining a PESC workgroup? Did you know PESC has four workgroups?


To join, simply complete the information on the form at [http://www.StandardsCouncil.org/JoinWorkGroup.asp](http://www.StandardsCouncil.org/JoinWorkGroup.asp) and we’ll take care of everything that is needed to get you connected.
New Authentication Workgroup Launched

At its inaugural meeting, 35 representatives came together to discuss current issues and problems that we face within the community. Those representatives include:

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<th>Name</th>
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<tr>
<td>Wagner, Allen</td>
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<td>Ness, Paul</td>
<td>Sallie Mae</td>
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<td>Morley, Bob</td>
<td>University of Southern California, AACRAO, and PESC</td>
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The workgroup is taking its first steps in setting up a listserv, determining who its chairperson will be, and developing a skeleton table of contents for its white paper. Future meetings, progress reports, and key findings will continue to be reported through The Standard. Interested parties are still able to join. Visit www.StandardsCouncil.org to join or contact Michael Sessa in PESC’s offices at 202-293-7383.

Tech Summit Presentations

A special thank you to all the presenters at PESC’s Technology Summit:

- Saundra Schuster, Senior Assistant Attorney General, State of Ohio
- Phil Patton, Registrar, University of Northern Iowa
- Doug Holmes, Programmer/Analyst, Ontario University Application Centre
- Charlie Miller, CIO, Rhode Island Higher Education Assistance Authority; NCHELP Meteor Advisory Team
- Barry Ribbeck, Director of Systems Integration, University of Texas Health Science Center at Houston
- Jerry Bracken, Chair, ANSI ASC X12 Subcommittee A on Higher Education Administration; Software Engineer, Brigham Young University; and Chair of Single Institutional Identifier Workgroup
- Ed Hauser, General Manager for Banner Student and Financial Aid Systems, SCT; Chair of PESC’s Standards Forum Steering Committee
- Robert King, Director of Strategic Development, Citibank; Chair of PESC’s Web Services Workgroup

All presentations are posted on PESC’s website and available now for downloading. Visit www.StandardsCouncil.org.
According to the Department of Education’s FAFSA website, they currently support Netscape browsers for Mac up to version 4.8—Netscape is currently on version 7.01.

Editor’s note: Version 4.8 can be downloaded from Netscape’s archives, however it is not compatible with Mac’s newest operating system, OSX. The end result with this compatibility issue is that students using newer Macs may or may not successfully complete the FAFSA online. In confirming this information, officials at FSA indicate that for the 2004-2005 financial aid cycle beginning this January, FAFSA on the Web will support Netscape 7.1 and Internet Explorer 5.2. Please see http://www.ifap.ed.gov/eannouncements/1110FOTWSupportedBrowsers.html, for a list of FSAs supported browsers posted November 11.

In referring to admissions, Chelsea’s mom, Janine said, “What I couldn’t believe was the number of plug-ins we had to download to go through the process.”

While both mother and daughter agreed that all the plug-ins were easily accessible and relatively easy to download and install, they both felt that the time spent going through the procedure and restarting the computer every time was cumbersome.

“The worst part about the whole ‘flash is required to access this site’ was when I tried to work on the applications at school during career planning class or study hall, I couldn’t,” said Chelsea. “At our school you can’t download and install anything on the computers so if I needed to do something at one of those sites I had to put it off until I was home again.”

Chelsea admits that she eliminated a “few schools” from her list of possible candidates based on their websites or technological requirements alone.

“I don’t want to go to a school that doesn’t support my computer,” she commented referring to her Mac laptop. “I wouldn’t have dealt with the [FAFSA] based on that if I didn’t have to,” she added.

Janine’s alma mater, which she has asked us not to name, was one of the school’s Chelsea had been seriously considering until she began the online application.

“Nearly the whole application was coded, but the numbers you needed to use weren’t readily available,” explained Chelsea.

A little confused by her explanation, I visited the school’s site. Powered by Peoplesoft, according to the logos on the site, after filling in the initial personal information I quickly realized to what Chelsea was referring.

Next to nearly every information field was a look-up key for the specific code the school needed to process the applications. For example, when entering country, you needed to click on the look-up icon, type in United States, and it would tell you USA was the needed code.

While this was relatively simple, I never did manage to get it to give me the code for Maryland even after typing in MD, Maryl (maximum amount of characters it allowed in look-up field) or Maryland in the description field, nor could I get it to find the code for a previous degree in Communication. In total, of the 15 fields I attempted to look up the code for, it replied “no matches found” in 11 separate cases, all of which were standard requests.

Chelsea’s other major complaint was with the navigation systems on some sites.

“It took me longer to click-through and find the online application for the University of Maryland than it took me to fill it out,” said Chelsea laughing.

I visited the site myself from her computer at that point and had to acknowledge that the navigation was a little more than confusing. From the homepage, clicking on “Prospective Students” didn’t get you there. From the Prospective Students page, clicking on undergraduate studies didn’t get you there and for that matter neither did nine other links listed at the top of the page. It wasn’t until you clicked on “Undergraduates and Transfer” could you access a link that indicated an online application.

However, it wasn’t all criticism for the University of Maryland.

“Maryland let me skip around all over the place on the application, which was really helpful,” said Chelsea.
Janine explained that often times when filling in applications Chelsea needed a piece of information that just wasn’t readily available and the schools that allowed her to skip that part of the application and add it later, while still being able to continue on with other parts, were extremely helpful.

“Like with my essay,” said Chelsea, “once I wrote it I wanted to drop it into all the applications right then, but I couldn’t at UNC for example because I couldn’t jump around within the application.”

“Applications that pre-filled the information for me from the registration page, were very helpful,” said Chelsea, adding that only UNC and NYU provided that service.

Chelsea also felt that having the ability to electronically sign the application as opposed to printing out a signature page and sending it separately gave her a kind of “sense of security.”

“I just kept wondering how they were going to match all these signatures up with all these applications from thousands of people without losing anything,” said Chelsea, “and of course I always worried it was mine they would lose!”

This concern carried through to the schools that were not equipped to accept the personal essay online, as well. She much preferred to be able to submit it all at once then trust that it would all get successfully mated together in the end.

“I personally preferred the schools that only allowed the application to be submitted if payment was made at that time,” said Janine. “We had so much going on at that point, I was just terrified that I would forget to send a check to one of the schools she applied to and she wouldn’t get in because of me.”

Although all the schools that Chelsea applied to had some sort of virtual tour available, she physically visited all the campuses except Emerson, which was omitted based on scheduling issues only.

“After looking at a couple of schools’ tours you realize that they are all basically the same,” said Chelsea. “You really don’t get a feel for the school from perfect pictures of smiling students in front of picturesque buildings.”

Janine laughed when Chelsea made this statement.

“She ruled out a number of schools in the beginning based on their pictures on the web,” said Janine. “I remember one incident when she was looking at some school in Minnesota, I don’t remember which one, when she exclaimed in near horror that she was not attending anywhere with that much snow!”

Janine did admit that visiting the campuses did make a big difference when it came to Chelsea ranking her preferred schools, but knows that the earliest narrowing down of schools was based predominantly on the image they portrayed through their websites.

Chelsea estimates that she spent about 25 hours filling out applications and getting all the materials together and sent, not including the ultimate filing for loans and other forms of aid.

“I have to admit it took a lot of time, but in the long run it was a lot easier than trying to do everything on paper,” said Chelsea. “I tried the paper application for one school that I did not end up actually applying to and I think I would have gone blind or lost all desire to apply to schools if I had to do that every time.”

Ultimately, Chelsea chose to attend Hofstra University in New York even though it was one of the schools that made her print a signature page to send separately, shows mainly smiling students and picturesque buildings in its pictures, did not require payment at time of application submission, did not pre-fill in the application and from my experience does not have the greatest navigation.

“None of the schools I was considering had a flawless website,” said Chelsea “but it met my major criteria—It supported my Mac and never crashed.

“It also had one feature that none of the others did, it allowed me to email pages from the website directly to my dad by clicking a button,” said Chelsea. “I just felt like (Hofstra) really worked to keep me connected to my family even though I was hundreds of miles away from them myself.”

Editors Note: Chelsea has been at Hofstra since August and has yet to have a phone connected, relying solely on email and instant message technology to keep in touch with family and friends. “I’ve never had a technology problem yet, except for forgetting my password,” said Chelsea smiling.
Dare Obasanjo, claims “W3C XML Schema (WXS) possesses a number of features that mimic object oriented concepts, including type derivation and polymorphism. However real world experience has shown that these features tend to complicate schemas, may have subtle interactions that lead tricky problems, and can often be replaced by other features of WXS.” In his article, XML Schema Design Patterns: Is Complex Type Derivation Unnecessary?, he explores both derivation by restriction and derivation by extension of complex types showing the pros and cons of both techniques, and alternatives to achieving the same results. The article may be accessed at http://www.xml.com/pub/a/2003/10/29/derivation.html

Microsoft recently released InfoPath, its new XML-based application in Office 2003 that allows users to organize and share data. But the security of its signatures has been called into question on a W3C discussion forum. The W3C recently released the IBM and Sun Microsystems backed specification for XForms 1.0, which allows the creation of interactive forms to help automate the exchange of corporate data. Dr. John Boyer, a research scientist at e-forms specialist PureEdge Solutions, and co-author of the XML Dsig standard and the XForms 1.0 recommendation, said that businesses cannot rely on InfoPath signatures for security, according to a VNUNt.com article. He claimed that, in under five minutes, PureEdge managed to change a signed InfoPath form from an ‘Employment Applicant Rating’ form to a ‘Prisoner Registration’ form. “The InfoPath signature remained valid, but the signer was proving a rating of a job applicant, not agreeing to go to prison,” said Dr Boyer.

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**UT Austin Internet Server ‘SPEEDEs’ Along**

September 2003 volume included:

- 32,087 TS130 transcripts
- 24,091 TS131 acknowledgements
- 5,277 TS997 Functional acknowledgements
- 18,261 TS189 Admission Applications
- 4,001 TS138 test score reports
- 96,477 total transactions
- 123 entities sent transcripts (plus about 300 Florida schools not counted as separate entities.)
- 179 entities received transcripts (same qualifier as above.)
While identity management system implementation is a complex project, often requiring years to complete, they address the top two concerns of CIOs. According to a survey of more than 7,500 top IT execs cosponsored by CIO and PricewaterhouseCoopers, the top two strategic security initiatives for CIOs during the coming year are to block unauthorized access to systems and to monitor systems activity, both of which are achievable through an identity management system. Additional information about implementation issues and the benefits of implementation visit www.cio.com/archive/101503/crisis.html.

A new Educause study titled, Information Technology Security: Governance, Strategy, and Practice in Higher Education, examines how higher education is coping with the growing cost of information technology security and with the tensions between preserving confidentiality, ensuring data integrity, and maintaining an academic environment in which information is easily available to authorized users. The study is based on a survey of 435 postsecondary institutions and 42 technology executives, managers, and faculty members at 18 institutions. The study may be accessed at http://www.educause.edu/ecar/email/ers0305-2/track.asp?id=toc.

Another study by Educause, which was based on a survey of 621 institutions, focuses on staffing levels in departments responsible for instructional technology or research computing. “The report, along with a new database service Educause has developed, provides benchmarks for colleges to use when analyzing their own information-technology practices,” according to a Chronicle of Higher Education article. Information about the report may be accessed at Educause’s website, http://www.educause.edu/.

According to a November 10 letter from the Department of Education’s Office of Federal Student Aid’s Central Processing System, as of January 1, 2004, the FAFSA on the Web and FAA Access to CPS Online sites will no longer be accessible using browser versions lower than version 5.0, for both Internet Explorer and Netscape browsers. FSA indicates that this change is an attempt to utilize the latest browser standards which also benefit web users with disabilities.

Earlier this month the Department of Education posted the 2004-2005 EDE Technical Reference. The document is available on the Department’s Federal Student Aid Download website, located at http://FSAdownload.ed.gov and on the Department’s Information for Financial Aid Professionals (IFAP) Web site, located at http://IFAP.ed.gov. Record layouts are included for the electronic application, correction, duplicate request, ISIR, signature record, School Web Student Signature Hold Information, Federal Data Requests (State Agencies), and Renewal Application and PIN requests.