Engineering Pathway 2010 Highlights

Engineering Pathway (EP), the engineering education wing of the NSDL, worked hard this year to develop, implement and market value-added educational digital library services and realize a sustainable income stream. An equal or greater amount of time and resources have been spent in our efforts to convert from our proprietary digital library services to an open source platform with the support and tools provided by the Technical Network Services (TNS) team of the NSDL.

Economic Sustainability: Our goal this year was to obtain funding from outside sources including offering in-depth community resources and services designed to appeal to different professional societies, publishers, industry and grant funding. Although the global economic downturn has negatively impacted our progress in obtaining sponsorship funding, we are currently in negotiation with publishers for a combination of collection and sponsorship services and we have been able to obtain renewal fees for ongoing collections and continued industry funding for the Premier Award competition. We have also initiated a partnership with both Amazon.com and Google for pass-through purchases on textbooks and advertising, respectively. In addition, efforts in sustainability have been notable if not in actual profits, but in that the services we offer are attractive enough to have successfully caught the attention of – or have been recommended to – many emerging engineering collections and services.

Move to Open Source Platform: Working with the NSDL TNS services, an understanding of existing data structures and metadata fields of the Engineering data has been developed on both sides; and EP has tallied usage of the metadata fields. A draft resource metadata framework (in XML) for cataloging engineering resources has been developed and activated in the NCS (NSDL Collection System) and a draft of a semantic map between the old and the new metadata format now exists. An XML data dump of Engineering resources has been developed, so that programmatic work can begin when the semantic map is complete. An NCS application dedicated for Engineering's use has now been installed and writes to the NSDL Data Repository (NDR).

EP continued to perform as the engineering "wing" of the NSDL, serving resource providers and users from a broad spectrum of constituencies: elementary, middle and high schools; two/four-year undergraduate programs; graduate and professional schools; and lifelong learners. To date, EP has over 6,000 registered users, 15 collections, and a total of 15,788 catalog records. Collectively, all of the EP collections average over 1 million page views a month. Over 60% of our records have at least one comment or review.

We continued to grow and support our collections this year, and added new components and functionality. We further developed the Broadening Participation in Computing (BPC) Portal and expanded our Mobile Learning activities. For BPC, we implemented a "Match-Maker" service to connect existing and possible NSF grantees who have or need services, projects and activities. We also created a blog for BPC to increase outreach and user traffic. In EP and all our collections, we added the capability to use geocentric data for both catalog and search functions of Mobile Learning and conducted several user studies in K–12 settings, including outreach activities.

Our "Today in History" blog of important technology events and related educational resources continued to be one of the most popular engineering education blogs as measured by Google rankings. Looking toward increasing site visibility and user population, we have initiated experiments with social media activities, including Facebook and Twitter.

EP continued to host the Premier Award for Excellence in Engineering Education Courseware. 2009 winners were CATME/Team-Maker and SimSE. Entries for the 2010 Premier Award have been submitted for judging and winners will be announced at the Frontiers in Education (FIE) conference in October. For more information, please see www.engineeringpathway.org/premier.

Supporting learning for broad and diverse communities, with educator and learner audiences from elementary school through lifelong learners, K-Gray Engineering Pathway continues to be a "one stop shopping" portal of comprehensive engineering education resources within the greater NSDL.