

**ENABLING CAREER DEVELOPMENT AND TECHNICAL VITALITY:
Introducing the IEEE Professional Development Institute (PDI) and the IEEE
CareerNavigator**

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IEEE's mission emphasizes professional development and lifelong education. IEEE sponsors more than 300 conferences and workshops a year and holds thousands of meetings by regional and technical organizational units throughout the world. IEEE's prodigious publishing effort accounts for approximately 30% of what is published in its fields of interest.

During the mid-90s, IEEE organized three 2000 workshops to ascertain industry needs related to the technical vitality of engineers. These led to several recommendations that IEEE promote lifelong education and professional development. Industry 2000 underscored the desirability to exploit electronic technology to deliver relevant, timely, flexible and cost-effective continuing education to engineers.

To meet the demand for electronic delivery, IEEE published electronically, including the creation of IEEE Xplore that provides powerful Web-based searching tools. IEEE marshaled its resources to increase the use of electro-technology in education, such as the development of web courses, CD-ROMs, videos and multiple media self-study courses. IEEE is also promoting the quality of Web-based education through the IEEE P-1484 Standard development effort

IEEE sought to increase the pace of development for the Web. A partnership with a company, Softcom, resulted in Video on Demand, a service that brings video/PowerPoint presentations to the desktop. In addition to transforming its self-study courses for the web, the IEEE is also brokering courseware developed by universities and other providers. Agreements have been signed with Stevens Institute of Technology, PACE University, New Jersey Institute of Technology, and the American Open University. Additional partnerships are under discussion.

IEEE also explored partnerships with industry, starting with a workshop to ascertain industry interest in working with IEEE to exploit the Web. At the workshop for industry, held in Chicago in October 1999, the industry participants expressed great interest in working with the IEEE. According to them, the IEEE can add great value through the following activities:

- Brokering industry content. Many companies, especially those that have developed educational materials of a non-proprietary nature, said that the IEEE could perform a valuable service in brokering or reselling industry-developed courseware.

- Creation of an IEEE Learning Portal. Several participants said that the IEEE should enable its members and customers to learn about continuing engineering education resources on the web. This portal would include information about IEEE and non-IEEE products.
- Marketing. The IEEE can work with industry to assess the needs of IEEE members and customers. The IEEE can help find out how to find, create, and deliver web-based education.
- Best Practices. The IEEE is in a position to identify best practices in the development, delivery and evaluation of web-based educational programs and courseware.
- Virtual working groups. There is a great interest in developing courseware to support the development of those who are in virtual working environments.
- Search engine cataloging of content. There is a great need to link the content of continuing education to specific needs.
- Hosting of modules for testing standards. There is a lot to be learned about designing courseware for the web. The IEEE could work with industry to develop a test bed for web-based courseware.
- Document guidelines for development. The IEEE can further the "state of the art" by developing guidelines for authors who wish to develop for the web.
- Promote joint development including universities. The IEEE can play a significant role in increasing the scope of available courseware through co-development and co-sponsorship of development. The IEEE can encourage further development by providing a neutral ground for industry and universities to work together.

IEEE is followed up the contacts with industry, including visits to Siemens, Telcordia, Texas Instruments, and Motorola. IEEE became a member of the Global Wireless Education Consortium, an industry-based group. Other relationships are being explored.

The recommendations from industry were in large part echoed at the Web-Ed Workshop, held in Washington, D.C. in December 1999. This workshop, attended by IEEE volunteers from industry and universities, focused on what IEEE's in supporting the work of its Technical Societies in disseminating the "intellectual capital" from its conferences and publications to IEEE members and customers. Their recommendations focused on curricula development, production standards, marketing, and evaluation.

IEEE funded initiatives to develop projects based on the needs identified through workshops. Two of these projects are the IEEE Professional Development Institute (PDI) and the IEEE Career Navigator. Both are web sites with a distinct purpose. The IEEE PDI is essentially a resource center and clearinghouse for lifelong education. PDI will provide information about lifelong education and "house" courses offered by the IEEE and its university and industry partners. The IEEE CareerNavigator, a joint Initiative of IEEE-USA and IEEE Educational Activities, is an interactive career planning tool that serves as a single, central, integrated Web resource for all of the IEEE's engineering career-related offerings.

The IEEE Professional Development institute brings together the elements needed to successfully deliver professional learning experiences any time, any place and at an affordable price. These elements are:

- Curricula – IEEE members and customers need a wide range of lifelong learning resources needed to maintain technical and professional vitality. By establishing a process for defining curricula, the IEEE can facilitate proper choices of topics, related to specific discipline and applications areas. The IEEE needs to provide an organized “road map” to accredit learning resources, provided by outside providers as well as the IEEE.
- Content - The IEEE through its technical societies, sections and individuals members can provide the subject matter needed by professional peers as well as other seeking educational materials in the fields of interest to IEEE. To provide this material electronically and cost effectively will require a change in the way courses are developed.
- Instructional Design - Traditional educational methods have been designed to provide a learning experience in a classroom environment. Over time some of these practices have been adopted to delivery of courses in a different venue and using evolving media. However, most courses developed in this way are a simple emulation of the traditional educational process. For the information era, new methods must be developed along with the tools that instructors need to present subject matter in the new information technology environment.
- Delivery System - Electronic media is in a stage of rapid development. Many systems concepts and associated software are being developed. The technical infrastructure and basic business model are being developed through the IEEE Internet initiative. The IEEE PDI will make use of these developments and integrate the educational components of content and instructional design with the system and business processes being developed through the web initiative.

The IEEE PDI web site includes: career resources, fields of interests in electrical and computer engineering, curricula maps, information about accreditation/recognition, listing of conferences and educational activities, gateway to publications and journals. It also links to a catalog of educational resources including courses offered by IEEE and other providers, and discussion groups. Curricular maps will link users to learning resources through discipline and application areas. Core divisions include technology, professional development, business and industry, faculty development, and services.

The IEEE CareerNavigator, currently under development, will the following services: resume builder, skills assessment tools/CAM Online, career planning tools, such as the Career Asset Manager, Engineering Job Data Bank, IEEE Career Services for Employers, Monitored Career Issues Chat Groups, Field/Industry Newslink, Networking/Private Online Meeting rooms, Sloan Careers Website and Q&A, and Salary Calculator/Survey.

The IEEE CareerNavigator will have an integrated system of links with the IEEE Professional Development Institute.

Visit the IEEE web site: www.ieee.org to learn more about IEEE programs. The current home page lists under “About IEEE” a link “careers and employment” as well as a “quick link” for “educational activities.” The IEEE Professional Development Institute can be reached directly: www.ieee.org/pdi/ The IEEE home page will undergo major changes in the coming year as it is redesigned as a portal to enable users to customize their preferences.

For more information, contact education-services@ieee.org