



The Computerworld Honors Program

Honoring those who use Information Technology to benefit society

Final Copy of Case Study

YEAR:
2012

STATUS:
Laureate

Organization name:
SIVECO Romania

Organization URL:
www.siveco.ro

Project Name:
eSchool Portal

What social/humanitarian issue was the project designed to address? What specific metrics did you use to measure the project's success?

eSchool Portal is a nationwide project initiated by the Ministry of Education, Research, Youth and Sports and aims to modernize the education system by creating digital competencies and introducing information technology into the learning and teaching process. Within this project, SIVECO Romania was chosen to provide 1,410 high schools in Romania with virtual labs, functioning exactly as real labs and allowing students to use specific instruments in order to conduct experiments for Chemistry, Physics and Biology in a safe and cost-effective environment. In this respect, 96 virtual labs were made available online through the eSchool Portal. This way, the project offers access to an online virtual platform and collaborative virtual labs to over 300.000 students in pre-university education. The project also involved training the 4,230 high school teachers in the use of ICT in education. The virtual labs offer an optimal mix of pedagogy and entertainment, combining experiments, simulations, films, interactive activities and tests, all of them aiming at motivating the different types of students. This way the learning process is transformed into an interesting activity, a way to discover and explore, to observe the complex scientific principles and to apply the abstract theories into day-to-day activities. All the experiments carried out in the virtual labs imply the direct activity of students, while the interactivity consists in gradual feedback provided to the user during the experiment's development. From SIVECO Romania's point of view, the metrics for success were represented by the successful reach of the project's objectives: offering a solution that grants access to an

online virtual platform to over 300,000 students in pre-university education in 1,410 high schools and also training 4,230 teachers.

Please describe the technologies used and how those technologies were deployed in an innovative way. Also, please include any technical or other challenges that were overcome for the successful implementation of the project.

The integrated solution that SIVCO Romania implemented for the national public education is based on cutting-edge Microsoft technologies and techniques and proved to be adaptable, flexible and cost-effective. The Microsoft technologies used within the project are Windows Server 2008, SQL Server 2008, SharePoint Server 2007, Visual Studio 2008, SharePoint Designer 2007 and Microsoft Office 2007. The portal allows further extensions with new functionalities and virtual labs and integration with other systems used for the educational process. The portal allows controlled access to resources and provides collaboration and communication features. The technical design of virtual labs implies both the conformity with the pedagogical specifications and curricula and with the recommendations, standards, norms and conventions specific for designing the educational digital content (acquired through large psychological research), as regards ergonomics or functionality. The portal has a Service-Oriented Architecture, based on a flexible web turnkey platform that uses a single technology for the graphic interface. The portal allows integration of multiple web sites and applications meant to offer beneficiaries access to specific information and collaboration functionalities. The portal allows integration with the Office 2007 suite that is used in schools. The portal uses open standards, including XML, XSL, HTML and CSS. The solution is in accordance with the standards for quality management system ISO 9001.

Please list the specific humanitarian benefits the project has yielded so far.

SIVCO Romania succeeded to implement one of the most complex and effective nationwide solutions for improving the Romanian education system. Thanks to this project, students and teachers in all Romanian high schools benefit from a motivating and secured teaching and learning environment. The implementation of the eSchool project assures not only access to high added-value educational resources to students and teachers but also provides a framework for ICT and collaboration competencies development that will lead to economical and socially sustainable development of the entire society. The project eSchool comes as an important step in a larger strategy for preparing students for a better future and modernizing the education system, by offering a broader range of education, training opportunities and further education. Through this project, all high school students in Romania have access to an exciting repository of high-quality, innovative educational resources, encouraging them to search, extract, combine and discover the information they need, in order to transform education in a personal experience. To conduct an experiment in a virtual lab means to place the students in the position of conceiving and practicing by themselves in order to observe, study, prove, verify and measure results (examples in Appendix 1,2,3). It is a deliberated challenge/trigger of a phenomenon under determined conditions, with the purpose of observing the behavior, of researching the causality relations, discovering the governing laws and checking hypotheses. By introducing the computer-based experiments in schools, students can conduct "real life" situations at their own pace. They can simulate on a computer a certain process, changing the parameters, monitoring the results, irrespective of their degree of danger or complexity. The virtual labs provide new learning methods that improve the school performance and contribute, by reaching the set operational objectives, to building skills, capacities and competencies.

Please provide the best example of how the project has benefited a specific individual, enterprise or organization. Feel free to include personal quotes from individuals who have directly benefited from the work.

Through the eSchool project, the involvement of students and teachers and also parents, civil society and public and private companies will increase in the educational process. As a result, the overall economy has some clear long-term benefits. Within a few years, the human capital will have a better education, thus they will be better able to face the challenges of a knowledge-based society. Seen from the schools' point of view, using virtual labs instead of real labs leads to cutting costs with experiment materials and also reduces the risk of accidents by using substances or operating equipment.