

Rice University bridges the gap between academia and Oil and Gas Industry with PetroChallenge

Case Study: PetroChallenge gives students hands-on experience and helps in time to autonomy

Rice consistently ranks among the top 15 universities in the United States. Rice ranks in the top five for scientific impact, has a top five nanotechnology program and the Baker Institute's Center for Energy Studies is the second globally ranked energy think tank. The Jones Graduate School of Business offers a wide array of programs and degrees that serve traditional MBA students and mid-career and executive professionals, placing a strong emphasis on the vital role of entrepreneurship in developing new technologies that address the energy challenge.

The Challenge

For decades, the university education has provided a base foundation and prepared students to join the workforce. Despite the technical foundation, students lack practical exposure. To bridge the practical knowledge gap, the industry has launched various short duration interns/externs programs. Even then these programs are not broad enough to provide a holistic understanding of the Oil and Gas Industry.

Solution

NExT's OilSim*, an upstream learning simulator, is used in the PetroChallenge* for Schools and universities program, designed to raise awareness of the oil and gas industry and encourage the study of science, technology, engineering and mathematics (STEM) subjects. The OilSim* upstream learning simulator supports interactive training techniques, tools, and strategies that can be applied in structured learning experiences as well as targeting teamwork competency. It takes users through the entire exploration and production business process—from acquiring a block to its development, production, and abandonment. In this innovative training method, participants are divided into teams

that challenge each other to achieve the best results, based on strategy-selection and decision-making in a realistic business and technical environment.

The OilSim simulator comprises of seven modules: initial screening to identify basins; prospecting; exploration and appraisal drilling; depletion planning; facilities planning; a construction project, and production operations. Each of these modules enables experimentation with different scenarios, supporting the learning experience through engaging participants in interactive activities. Using the simulator in a multidisciplinary team environment stimulates peer-to-peer learning and helps users build an understanding of interdependency planning in the exploration and production (E&P) cycle.

In 2015, the Energy and Environment Initiative (EEi) of the Rice University partnered with NExT and launched the inaugural 2015 PetroChallenge in Houston. The event marked a phenomenal impact in students' learning and understanding of the oil and gas decision making process. The students were grouped into integrated teams of 3 or 4 participants, such as, an engineer, geoscientist and a business major student forms a team. Each team then acted as an oil company being fully exposed to the complete upstream cycle of the oil and gas industry using the web-based simulation, OilSim. Throughout the event, these teams made E&P decisions and their actions and decisions were then judged by NPV of their company. The winning teams were declared based on the combined highest NPV and credibility points earned through their decision making process and corporate social activities and engagements.

Result

40 graduate and undergraduate students participated in the event. Participants experienced firsthand the challenges, opportunities, and dilemmas of real-world exploration and learnt from their successes and mistakes. They were able to better understand the functions, roles, and responsibilities of companies at every stage of the industry life cycle. PetroChallenge provided an overview of the technologies, workflows, and processes that enable the oil and gas industry to explore, appraise, develop, and produce hydrocarbons. Participants learnt the risks and rewards associated with the industry as well as the real-world impact of decisions.

As the E&P companies' are making a stride to reduce the "Time to Autonomy" for their new recruits, an event like the PetroChallenge was a good enabler for students to be better prepared when joining the workforce.

In these unique events, the sponsoring companies have an opportunity to evaluate potential recruits in action, not only from a technical perspective, but also, the business acumens like team work, collaboration, negotiation skills, risk taking and decision making which helps minimize uncertainties and make informed decisions. In the same token, students get an opportunity to network with their potential employers.

ABOUT NExT

NExT, a Schlumberger company, provides training, competency and professional development services for the oil and gas industry. With a portfolio of over 600 courses, training programs, and competency services covering technical and software skills, NExT, assists in developing the petrotechnical expertise needed to meet today's increasingly complex industry challenges. Covering the entire breadth of the E&P domain, NExT has been recognized as the 'Education/Training Provider of the Year' by Getenergy in 2013, 2014 and 2015.

Quotes:

It gave an exhaustive overview within just two days of what is a complex business. The interdisciplinary nature of the challenge helped understand areas beyond our own area of specialization and also how to manage team dynamics. Overall, very exciting and was a lot of fun.

Divya Chandran

Rice PetroChallenge 2015

It offers an opportunity for our students to experience the real oil and gas industry work. After the event, I realize that our geologists should also have some economic courses in their further study.

Hualong Zhang

Rice PetroChallenge 2015

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Charles McConnell, Executive Director, Energy and Environment Initiative (EEI) at Rice University with the winning teams



PetroChallenge in action at Rice University