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Attracting, developing and retaining a talent pipeline to meet future challenges in the oil and gas industry

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The demographics of the workforce are rapidly shifting and technological advancements are imposing a greater demand for skilled workers. Not only is attracting the right individual for the right job a challenge but retaining, developing and optimizing their performance is a major concern for most organizations. The objective of this presentation is to address the various challenges and limitations in talent attraction and retention that the petroleum industry faces. In addition, the presenters will focus on the value of implementing a competency-based approach to close skills gap, help fast-track talents in high demand positions and as a strategy to develop the capabilities necessary for sustaining talent pipeline. By identifying the right competencies, firms will be able to recruit and manage talents in the most effective way, hiring the right people with the right skills and putting them in the right roles with the abilities to perform at their maximum potential. Job-based HR processes are inadequate to address the complexities needed to address local variations of employment; a talent development framework that supports transnational strategies focusing on competency-based human resource processes and practices in a competitive global economy. This approach supports a more nimble workforce matrix while jobs and structure act in secondary support roles. Every day organizations are seeking solutions to an ever-growing obstacle, building and sustaining a strong talent pipeline. However, not only do companies have trouble filling their talent pipelines due to shifting demography and workforce preferences but they also must develop new capabilities as they invest in new technologies, develop new partnerships and globalize their operations. This presentation will focus on the results of a study that identifies the various challenges and limitations in talent attraction and retention within the oil and gas industry. In addition, the authors will offer solutions to addressing talent challenges. Based on the work of the world-renowned author Dr. William J Rothwell, this presentation will provide an overview of a competency-based system as a strategy to develop and manage an effective talent pipeline. Presenters will provide tools so that participants will be able to not only attract and hire the right people but also can educate and develop the right people for the right job.

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Hydrocracking of vacuum residue by homogeneous catalysis

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The heterogeneous catalytic hydrocracking process of residues convert heavy hydrocarbons including asphaltenes into light distillates, removes sulfur and nitrogen, saturates aromatics and olefins and retains heavy metals (Ni, V, Fe, Cu, etc.). One of the greatest problems of the hydrocracking process is the high catalyst consumption due to its fast deactivation, the logistic of the supply of fresh catalyst and disposal of wasted catalyst may become very complicated because of the environmental regulations. In order to overcome this problem it has been proposed the use of more active poisoning resistant, however, this has only solved partially the problem. As an alternative, we propose the use of a liquid catalyst which has a strong acid function for cracking heavy hydrocarbons and a hydrogenation function to promote sulfur and nitrogen removal. This catalyst can be recovered and reactivated to be used again in the process with the additional advantage of being cheaper than solid catalysts. Experimental results show that by hydrocracking heavy oil using this liquid catalyst, more than 60 wt% of asphaltenes and heavy molecules were transformed into lighter hydrocarbons in the boiling range of gasoline, diesel and gasoil. Likewise, sulfur and nitrogen were removed by 60 and 30 wt% respectively. In this work the experimental results are presented and discussed.

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