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## Successful Application of Six Key Elements in Integrating People and Technology Toward Quality Achievements of Angsi Field Development Team

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### Abstract

Angsi is an integrated oil and gas development project in offshore east coast of Peninsular Malaysia. It is one of the biggest oil producers in Malaysia, contributing one-sixth of the total national daily oil production. During its planning and execution stages, the project has had many successes and positive outcomes. It has been recognized as the model of success for all domestic and international operations in PETRONAS Carigali Sdn. Bhd. (PCSB).

The uniqueness of achievements in Angsi project relies on the successfulness of integrating its people and technology. With the recent skyrocketing oil price, the trend has been to chase for additional reserves and maximize crude production, and make it happen by whatever means possible (new technologies, joint ventures, aggressive recruitments etc). However, many projects failed to achieve these targets, despite being equipped with niche and advanced technologies.

Angsi project has successfully overcome these obstacles. The secret relies in the six key elements that have been nurtured in the working culture of every team member, which are; *People, Focus, Integrated Approach, Planning, Communication and Feedback Loop*. With this unique culture, it has allowed the team to achieve major successes over the past 5 years.

Among those is the successful implementation of the largest platform-based hydraulic fracturing program worldwide, and first in Malaysia. This allows the development of 0.5 Tscf gas from the otherwise uneconomic tight gas reservoir. The team also managed to increase its reserves level 2.5 times from its initial size. Consequently, it increases Angsi's daily production rate from 65 to 115 Mstb/d. Finally, Angsi project successfully reduces its unit development cost (UDC) by 67%, lowering it from 5.1 USD/boe to 1.7 USD/boe.

This paper discusses how the six key elements have contributed to the successes of Angsi Field Development Project.

### Introduction

The Angsi field is located in the Malay Basin, about 106 miles off the East Coast of Peninsular Malaysia in a water depth of 230ft (**Figure 1**). It is the largest integrated oil and gas development in Malaysia<sup>1</sup>, with four drilling platforms and one production platform. Angsi is a joint venture development between PCSB and ExxonMobil Exploration & Production Malaysia (EMEPMI), with the field being operated by PCSB. The major oil bearing reservoirs are the I-35 and I-68 sands, while the major gas bearing reservoirs are the I-1, I-85, I-100 and the tight K-group sands.



Figure 1 – Location of Angsi Field

The development team comprises people from diverse background. They come from either PCSB or EMEPMI, being multinational, multicultural, with various range of skills and experience level. With this diversity, forming an integrated team within a cooperative environment is not an easy task. In addition, there were risks involved in developing the Angsi field, considering the high level of uncertainties during the initial stages of development. The field also requires the implementation of new technologies to optimise production and reduce development costs. These situations create a real