



How to find the Project Managers for big projects



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The E&C Market

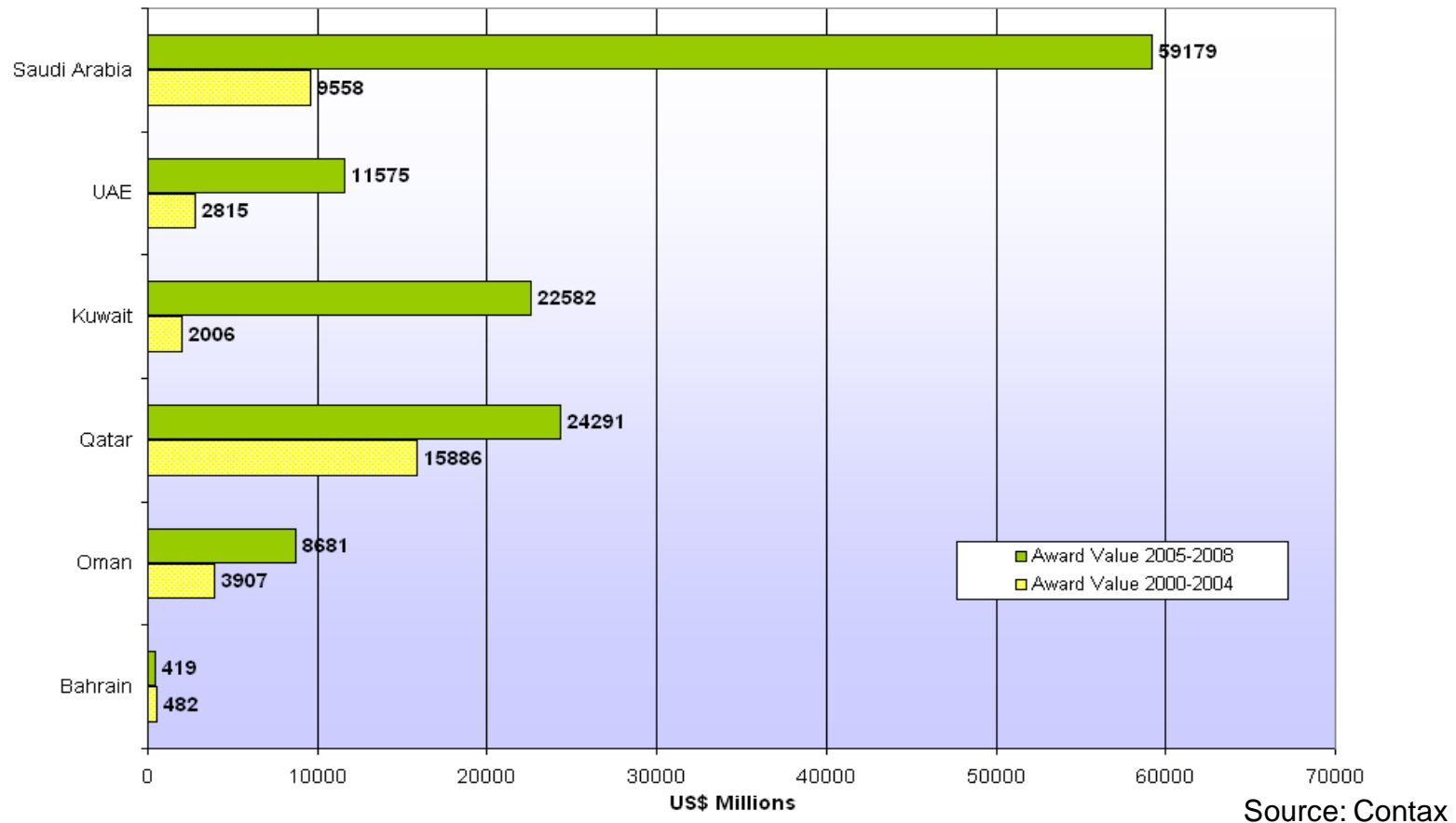
- We have seen a very sharp increase in investment in the oil and gas, LNG, refining and petrochemicals sector during the period 2004-2008
- This period is also characterized by a significant increase in the size and complexity of projects that are planned or already in construction. Some of these are the largest investments companies have ever implemented.
- Examples of mega-projects in development or in construction include:
 - Major multi-billion dollar refineries, chemicals complexes, and integrated refinery/petrochemical facilities in the Middle East and Asia – PetroRabigh, Aramco/Dow Ras Tanura, YANSAB chemicals complex, new refineries at Jubail and Yanbu, new refinery in Kuwait, ExxonMobil Singapore Parallel Train
 - Major oil and gas investments, such as Khurais, Saudi Aramco's largest crude increment programme
 - A large "leap forward" in LNG liquefaction train size from 5 million tonnes per annum (MTPA) to trains in construction at 7.8 MTPA, for example in Qatar

The E&C Market

- We are also seeing increased technical complexity related to projects using new technologies, or scaling up emerging technologies to commercial/world scale.
 - These include major planned coal-to-liquids and coal-to-chemicals projects in countries with large coal reserves, such as China and South Africa
 - New GTL facilities in Qatar and Nigeria
- New project execution strategies are being developed to deal with resource constraints
 - For example, the fifth liquefaction at the North West Shelf Complex in Australia was designed and built in 75 modules in Indonesia. This is the first onshore LNG train to be designed and built in modular form.
 - Pluto LNG, also in Australia, has been designed in modular form – over 250 modules are being constructed in Thailand

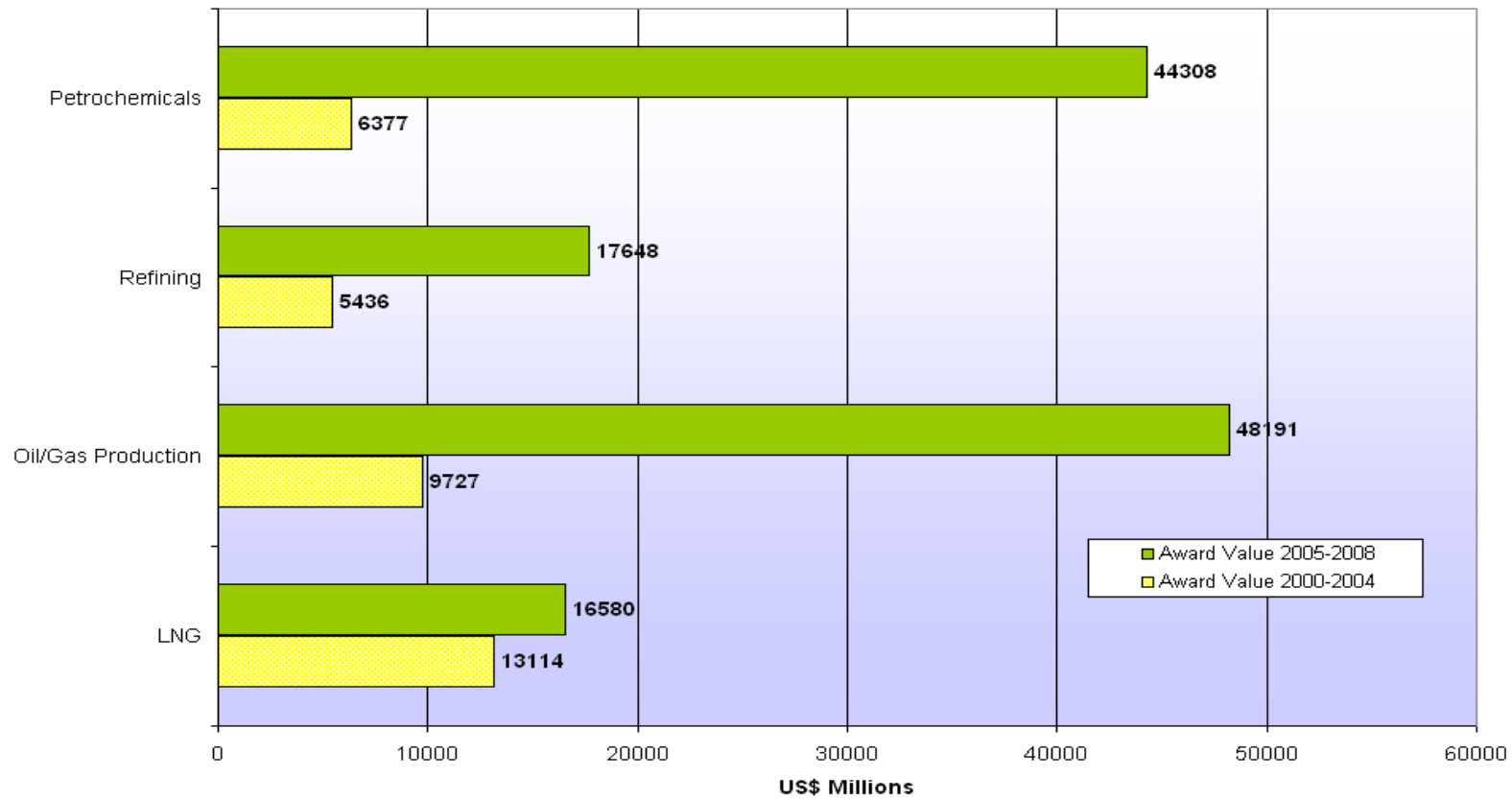
The E&C Market in the Gulf Co-operation Council Region

- Taking the Gulf region as an example, we have seen a huge increase in the US\$ value of projects awarded since 2005, compared with the previous 5 years



Growth in Size of Investments – e.g. GCC

- The same data is presented below by business sector

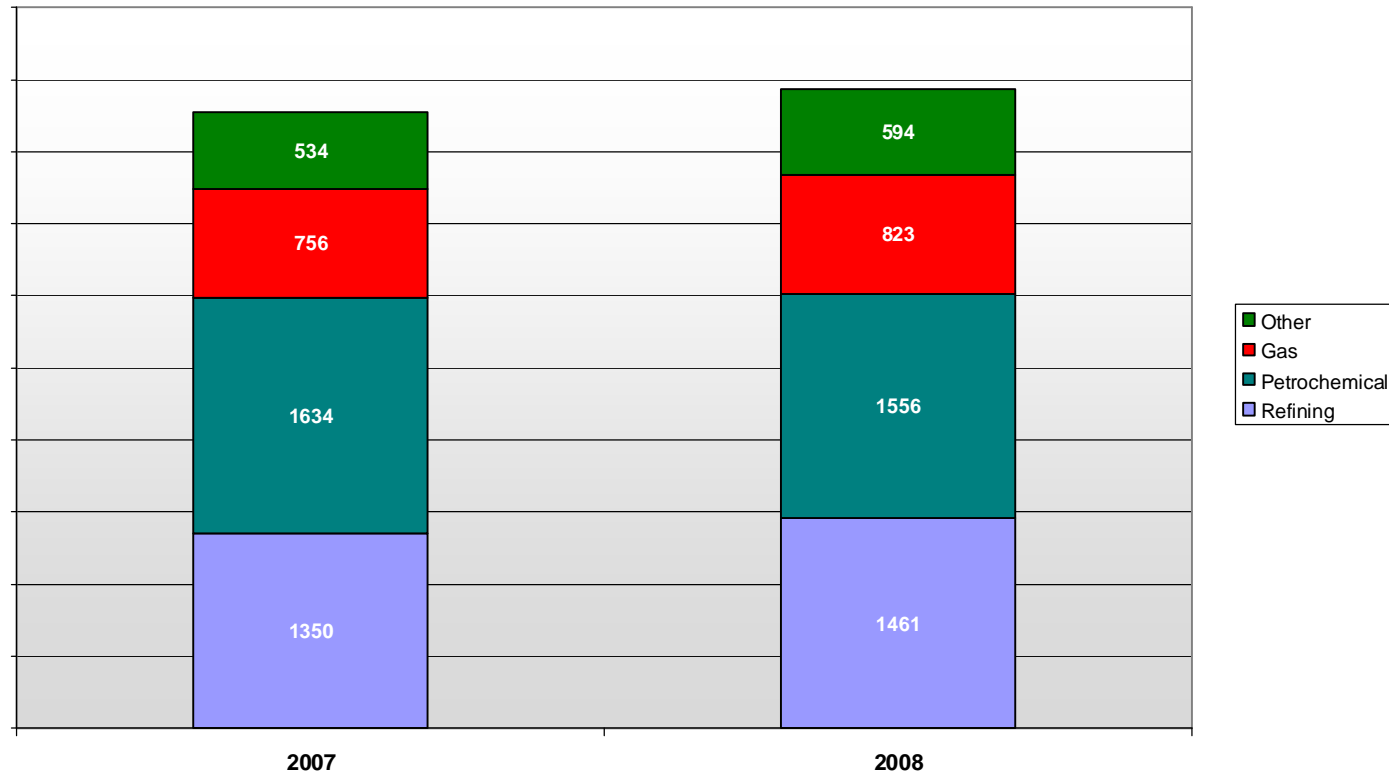


Source: Contax

Changes in Contractors' Capacity

- According to Hydrocarbon Processing's Annual Construction Boxscore, which covers gas processing, refining and petrochemicals, the total number of active projects continued to grow between 2007 and 2008.

Count of Total Active Projects Worldwide (February 2008)



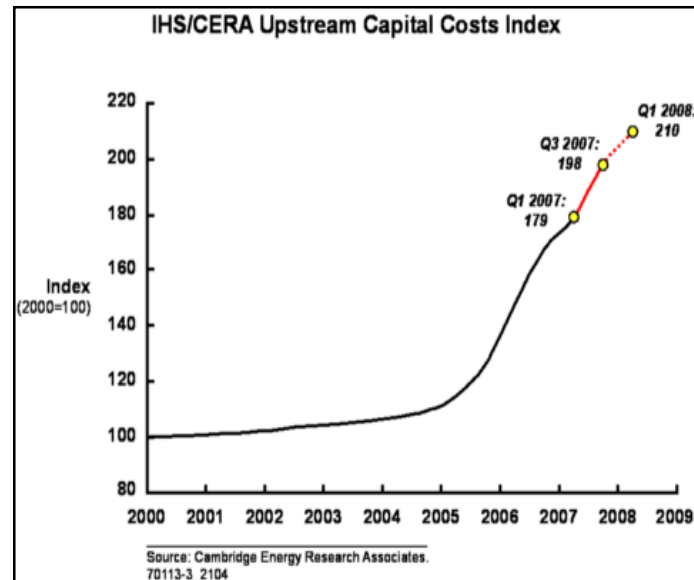
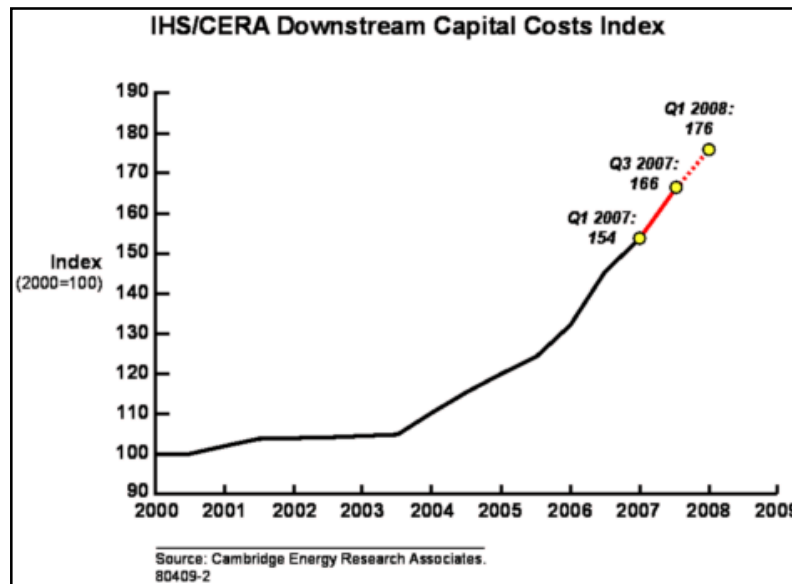
Source: HPI Boxscore 2008

Increasing Costs in a Heated Market

- Capital costs have risen sharply during the investment boom which started in 2004/5

The costs associated with constructing new oil and gas upstream facilities have reached a new record high, according to Cambridge Energy Research Associates (CERA)

Upstream costs have doubled since 2005



The costs of building new oil refineries and petrochemical plants have continued to rise, reaching an all-time high in the first quarter period ending in March '08.

Changes in Contractors' Capacity

- Contractors' resources remained relatively flat or even declined during the 90s. Many contractors have achieved an order of magnitude increase in technical personnel since 2004.
- A survey of 7 leading E&C contractors show that between the beginning of '05 and today, these companies increased their total capacity by 65%. This increase includes acquisition and organic growth.
- We have seen substantial addition of capacity in low cost areas e.g. India and China
- Foster Wheeler has more than doubled the size of its E&C Group since the beginning of 2005, including the establishment of a very significant low-cost engineering operation in India, significant growth in AsiaPacific, and also significant growth in its high-value added operations in Houston and the UK.

Risk and the Consequences for Contractors

In essence, the E&C market of the last three-four years has become “more risky” with several consequences for the E&C contractors

- Different allocation of risks between owners and E&C contractors
Joint management of risks as the most effective way to manage cost contingencies
- As a consequence, contracting schemes are moving from lump sum to reimbursable
- Demand for more integration between owner and E&C contractor organizations to proactively manage owner’s investments
- Implementation of challenging and innovative execution plans to cope with shortage of construction labour and vendors’ workload
- Demand for higher quality and broader scope of estimating and project control services
- Need to manage “quality” and “productivity” issues as a result of fast addition of new engineering capacity

Project Management

- Therefore, there is greater demand for project management
 - Capacity
 - Experience
 - Broader skills

How has FW addressed this Challenge?

- **Competing on the market for project management resources**
 - Selective additions
 - Not more successful than others
- **Internal development**
 - Senior project directors promoted to project executives in charge of more than one project
 - Promotion of project managers to project directors
 - Training of younger project managers in finance, project control, contracting to upgrade their skills and be able to work under the project directors on more complex projects
 - Continued to hire young engineers to be internally developed
- **Selective additions of experienced individuals in key technical functions in the “production” engine and careful control of the amount of work executed in low cost locations**
- **Direct involvement of senior management**
 - Executive project reviews at Operating Unit (OU) level with the participation of OUs’ senior management
 - Corporate project reviews with participation of CEO/COO/CFO in addition to local management
 - Project sponsorship of senior management, including CEO/COO of Corporation directly involved in major project sponsorships