

## Exploration & Production activities and markets

Following two banner years for the oil service and supply sector, marked by strong activity and a substantial increase in prices, the Exploration & Production market continued at a frenetic pace in 2007, although certain local markets retreated.

In 2008, activity should stay high and prices should start stabilizing. With services in short supply, companies in the sector have been able to shift the balance of power with oil firms in their favor.

### New business conditions for the upstream service and supply sector

Since the early 2000s, the exploration-production scene has changed radically. In the last few years, the need to boost stretched production capacity, combined with the high crude price has led to strong oil industry demand for E&P equipment and services. However, equipment and services are in extremely short supply after years of underinvestment, which has resulted in a steady increase in prices across the board. The rise started in 2004, steepened in 2006 and persisted in 2007 at a rate that, according to a study by Cambridge Energy Research Associates (CERA), is starting to slow. According to CERA, costs may even reach a plateau in 2008.

With prices for raw materials also high across the board, producer countries are making their presence and their demands felt, which, for the oil services and supply sector, meant the following:

- National companies are increasing their share of client portfolios. As the crude price climbed, state companies in oil countries are regaining control over the development of their natural resources; some are carrying out projects outside their own country. Backed by ever-growing financial resources, they are increasingly turning to the services and supply sector.
- Contracts require greater "local content". Oil services and supply firms are required to carry out more and more construction and assembly operations in the country containing the given development project, and curb their imports. This raises costs, especially because local labor is not always well qualified and the efficiencies of these new installations are often

significantly lower than at yards located in regions with long experience in these operations.

The construction times and cost of equipment (e.g. drilling rigs, production support systems, seismic and subsea pipelay vessels) now constitute the biggest bottleneck in the upstream oil supply sector. To gain better control over these factors, some engineering firms are integrating downstream by investing directly in construction yards (Saipem).

For oil services firms – and oil companies – the recruitment of qualified labor is a key problem. Given the age pyramid in the industry, many workers are and will be retiring in the near future. At the same time, projects are becoming more complex, requiring increasingly qualified personnel that it will be necessary to attract to these technical fields.

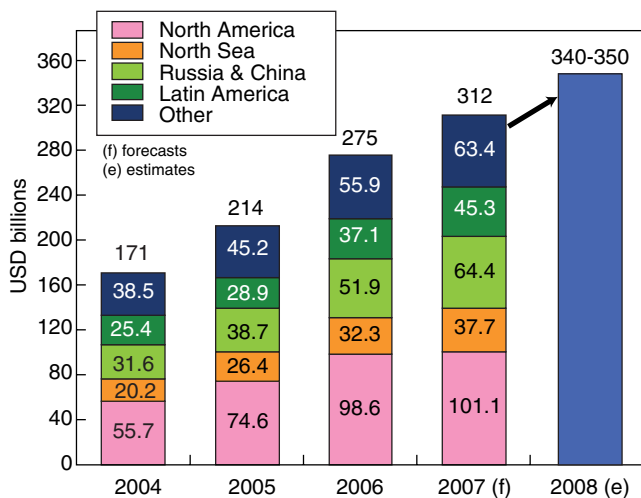
Finally, a very tight market has enabled oil services companies to shift the balance of power with oil companies in their favor, reversing the situation of the early 2000s. Suppliers now find themselves in a position to dictate terms, especially when it comes to risk-sharing. Most of the contracts signed today are "cost-reimbursable" and not "fixed cost" or "turn key" contracts, like those typical of the late 1990s or early 2000s, which left some suppliers in dire financial straits.

### World capital expenditure in exploration-production

In 2006, world E&P investment continue to climb, reaching USD 275 billion. In other words, it was up 29% for the year, 4 points higher than in the previous financial year.

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Fig. 1 - World E&P investment



Note: Oil majors have other expenses besides E&P. One must add operating costs, especially those relative to facility maintenance and repairs (a share of this spending represents a large market for certain companies in the related service and supply sector).

Source: IFP/Economic Studies Division 2007

In 2007, E&P capex grew at a lower annual rate than in the two previous years: it was up 13% for the year to USD 312 billion. Eighty percent of the increase in upstream investment between 2005 and 2007 was generated by higher prices and 20% by the surge in activity. The bulk of capex growth can be credited to Latin America and more particularly to Russia and China, where spending was up 22% and 24%, respectively, to USD 45 and 64 billion.

In North America, capex has slackened considerably. In 2007, it should rise by only 8% in the United States to USD 74.7 billion while falling 10% in Canada to USD 26.4 billion. The slowdown in the U.S. can be attributed to the fact that this market is extremely responsive to the steady increase in the cost of services, especially day rates for drill rigs. In Canada, many projects have been postponed due to lower gas demand (hence a lower gas price), rising costs and the difficulty of finding qualified labor.

In the North Sea, investment continued to grow in 2007 but not as quickly as in the past (up 17% to USD 32 billion). A strong rally in drilling activity in Norway was largely responsible for this increase. Initially hesitant, then reassured by the fact that barrel price has stayed high, oil companies showed renewed interest in this zone, where new areas of the continental shelf are to be opened up to prospecting. Capex should continue its upswing in 2008.

Russia and China saw the greatest spending hikes: up 24% to USD 64 billion in 2007. In Russia, the objectives is to raise crude production capacity to 10 Mbbl/d and

cover increasing demand for gas. As for China, the four largest Chinese companies are planning USD 24 billion in domestic investment, according to a Citigroup study. Intensive growth in E&P activity is driven by strong present and future domestic demand for hydrocarbons.

After Russia and China, Latin America had the next highest E&P capex, which was up 22% and totaled USD 45 billion for 2007. Here, Brazil was a driving force with a drilling budget up by 22%. Mexico presents an ambitious development program for 2007-2012 to prevent its oil production from falling to 2.5 Mbbl/d in 2012 (3.3 Mbbl/d in 2006) as currently predicted.

In 2008, the most probable scenario would be a moderate increase in capital expenditure (+10-15%) with inflation playing a lesser role than previously, especially if prevailing trends persist, i.e. high prices (raw materials, services and equipment rental rates); a tight labor market; and difficult access to reserves for international companies.

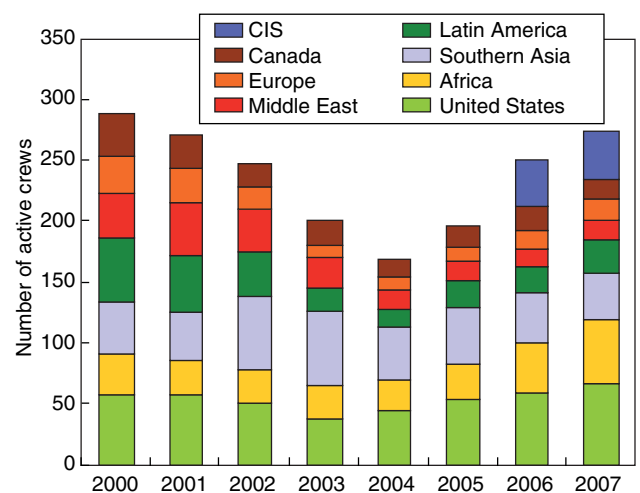
## Seismic

### World-wide activity (number of active crews)

Measured by the number of seismic crews active worldwide (onshore and offshore), seismic activity confirmed its 2006 comeback with a growth rate of 28%. In 2007, a 13% increase in activity is expected, generated mostly by Africa and Europe.

Recovery did not take place on the same scale onshore as offshore. The number of marine seismic crews changed only marginally in 2006 over 2005 (+2%) and remained flat for the first six months of 2007. The

Fig. 2 - Seismic activity, by geographical area, in numbers of crews (not including China)



Source: World Geophysical News - IFP/Economic Studies Division 2007

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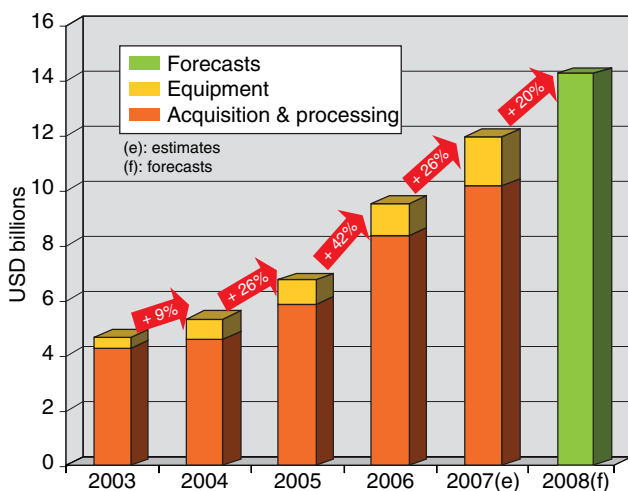
reason is that it takes longer to increase data acquisition capacity for the offshore sector than for onshore. The new seismic vessels will not reach the market until mid 2007 or 2008.

These figures do not cover activity in China, concerning which very little information is available.

### Seismic market sales

In 2005, the sector started to grow again: sales were up 26% and the trend curve for 2006 was even steeper (+42%). 2007 sales rose by 25% to nearly USD 12 billion. As for 2008, the existing backlog indicates that growth will continue and the annual sales forecast is USD 14 billion. In six years (2003-2008), seismic sales will have increased by a factor of three.

Fig. 3 - Sales trend on the seismic market



Source: IFP/Economic Studies Division 2007

### Data acquisition and processing

The data acquisition and processing market was worth USD 8.3 billion in 2006, up 42% over 2005. For 2007, based on sales figures for the first three quarters, it is expected that the market will reach USD 10.1 billion, a gain of 22% over 2006. The years 2000 to 2003 saw a decrease in activity and a surplus of acquisition equipment capacity. When it began to recover in 2005, the market reached saturation on the segment of seismic acquisition equipment, the consequence of many years of underinvestment. The price of services then rose sharply which, in addition to the increased volume of activity, helped boost market sales during the period 2005-2007. To cover demand, market players must renew and expand their production assets, which means building new vessels and/or acquiring companies owning acquisition assets.

### Equipment

On this segment, sales have been rising steadily since 2004. In 2006, they followed the general uptrend on the seismic market (+42%). For 2007, the market should grow by 45% to reach USD 1.7 billion. This growth figure, higher than for the market at large, reflects high demand from data acquisition companies. In 2007, equipment represented 16% of the total seismic market. It is continuing to benefit from the recovery of the oil exploration market and sustained demand for new-generation seismic data acquisition equipment.

### Key market players

In 2006, six companies accounted for 80% of the world market for seismic services. CGGVeritas became Number One on the market after the CGG-VeritasDGC merger, effective January 2007. The new combination represented 27% of the market in 2006, almost tied with WesternGeco. Next come PGS (14%), BGP (7%) and Fugro (5%). BGP's market share should be taken with caution because the company does not disclose financial data.

Table 1

Seismic acquisition & processing suppliers, equipment suppliers and their respective market shares

Total seismic	% market in 2006	Acquisition on processing	% market in 2006	Equipment	% market in 2006
Western Geco	26	Western Geco	30	Sercel	57
CGG	18	PGS	16	ION	27
PGS	14	CGG	12	OYO Geospace	8
Veritas	9	Veritas	10		
BGP	7	BGP	8		
Fugro	5	Fugro	5		

Source: IFP/Economic Studies Division 2007

On the equipment segment, three companies represented 90% of the market. Sercel was still far ahead of the competition with market share of 57%. The second and third players, ION (its new name being Input Output) and Oyo Geospace, accounted for 27% and 8% of the market, respectively.

Consolidation transactions continued in 2007:

- The CGG/Veritas merger came into effect and the new company now owned the largest fleet of data acquisition vessels. Through its subsidiary Sercel, CGG also led the world market for seismic equipment.

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- In August 2007, TGS-Nopec, a supplier of multi-client data and deepwater imaging software, and Wavefield Inseis, a marine data acquisition company, announced their merger.

In the autumn of 2007, mergers and acquisitions took place as companies sought to boost their seismic acquisition capacity on a very tight market:

- In November 2007, Schlumberger bought out Eastern Echo. Started in 2006, the latter launched the construction of four high performance 3D vessels with an option for two new ships. Deliveries are scheduled for year-end 2008, year-end 2009 and year-end 2010 for the two vessels concerned by the option.
- In December, PGS acquired the Norwegian company Arrow Seismic, the owner of two 3D seismic acquisition vessels and three others under conversion to full 2D vessels, with four vessels on order for delivery in 2008 and 2009.

In addition, contractors showed a tendency to team up or buy companies specialized in electromagnetic data acquisition and processing. Combined with seismic technology, it can be used to determine reservoir characteristics more accurately: Schlumberger announced last summer that it was buying Geosystem, PGS made a deal to purchase MTEM, and CGGVeritas formed a strategic alliance with the British company OHM.

### Drilling

#### World activity 2006-2007: a slowdown in growth

The number of wells drilled worldwide totaled 101,600 in 2006, up nearly 8% over 2005. In 2006, activity rose in

all parts of the globe, with the CIS countries reporting the largest increase (25%). For 2007, the number of wells drilled grew by 3.5% to 105,000. 2008 should see a small increase of about 2.6%. 96% of the wells drilled worldwide are onshore and 4% are offshore, and these proportions change little from year to year.

#### Onshore

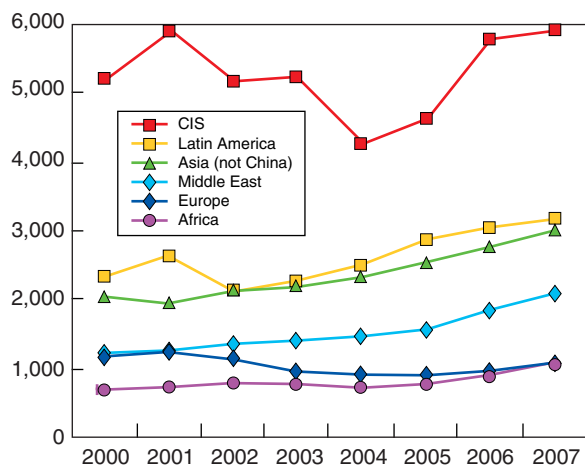
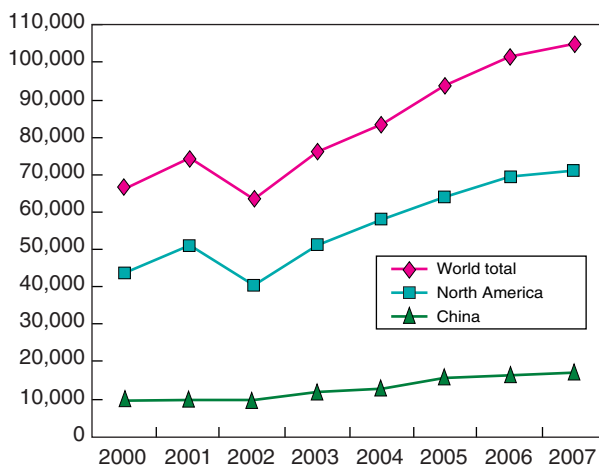
The bulk of onshore drilling operations usually take place in North America (69% in 2007) and China (17% in 2007). In 2007, world onshore activity rose by 3.5%. In North America, the increase came to 3%. The latter does not reflect the fact that there were two contradictory trends at work: while activity climbed 13% in the U.S. in 2007, Canada saw a 25% decrease in the number of wells drilled compared to 2006. This was due to the slump on the gas market and to weather conditions unfavorable to drilling in the second quarter. In the rest of the world, onshore drilling was up 9% in 2007, with Africa (Egypt and Libya) and the Middle East reporting the largest increases (+17% and +13%, respectively).

In 2007, day rate for onshore drilling rigs in North America fell 7% year on year to about USD 19,500 a day, according to Spears & Associates. This was due to the depressed gas market in Canada and to the arrival on the market of newbuilds or converted older rigs. In the rest of the world, however, demand was high, with day rates rising steadily since 2003. In 2007, they were up by about 27% for an annual average of USD 28,000.

#### Offshore

Offshore activity is not as concentrated, geographically speaking. For 2007, it is thought that 37% of the wells

Fig. 4 - Number of wells drilled worldwide



Source: IHS Energy, Spears & Associates, AEUB - IFP/Economic Studies Division 2007

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drilled offshore will be in Asia (not including China), 18% in the US, 15% in Europe and 7 to 8% in Latin America and China. In 2007, activity grew more slowly, at a rate of 1.4%. It showed the biggest decline in the United States (down 15% over 2006), where offshore operators are turning away from low-potential shallow waters to more promising deepwaters where the wells are more complex and take longer to drill, and are therefore fewer in number. Latin America registered the largest progression in terms of wells drilled (+25%), thanks to Brazil and Mexico. This illustrates their desire to get offshore exploration going again to maintain or even boost current levels of production. Asia saw growth in the vicinity of 4 or 5%, driven by Australia, India and Malaysia.

Day rates in the North Sea in 2007 averaged USD 240,000 a day for jack-ups and USD 430,000 a day for semi-subs, versus USD 177,000 and 372,000 a day in 2006. In the Gulf of Mexico, offshore activity targeted deepwaters instead of shallow depths. At the same time, new rigs reached the market. As a result, jack-up rental rates fell by USD 68,000 a day in November 2007 compared to USD 105,000 a day one year earlier. On the other hand, semi-sub rates set new records: USD 515,000 a day in July 2007. In South-East Asia, day rates for semi-subs soared by 93% during the first eleven months of 2007 compared to 2006, reaching USD 390,000 a day on average. The prices for jack-ups stabilized in 2007, with a 4% increase over 2006.

### The drilling market

#### Drilling sales

Driven by volumes and prices both, the drilling market showed a 42% increase between 2005 and 2006, when it

set a new record, estimated to be close to USD 43 billion. The onshore segment grew by 35% in 2006 to USD 17 billion. Offshore sales climbed 48% to USD 26 billion. The price impact was greater impact on the offshore sector than onshore.

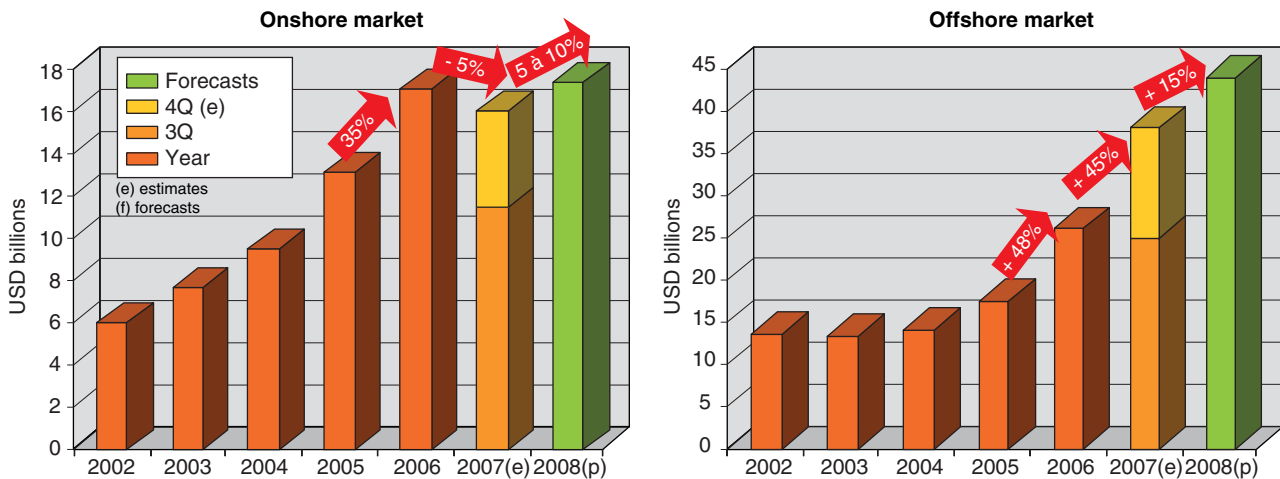
Based on the figures for the first three quarters, the onshore market in 2007 was worth about USD 16 billion, down 5%. This fails to convey that the market is slumping in North America but flourishing in the rest of the world. The onshore market is primarily concentrated in North America, where it depends heavily on gas demand. Since early 2007, demand for onshore drilling has grown by 3% in this region while rental rates have been falling. In the rest of the world, the number of wells drilled has risen by 9% and rental rates are rising.

Based on information contained in financial reports published by key players, the offshore market should grow by 45% to USD 38 billion in 2007. This growth has been mainly generated by prices. The number of wells drilled worldwide in 2007 is up by a modest 1.4%. As for the rental prices, only jack-up rates in the Gulf of Mexico are down; otherwise, they increased from 4 to 93% for 2007, compared to the previous year.

Looking to 2008, judging by new orders and business forecasts, it is expected that:

- Offshore drilling will grow more slowly (+15-20%) and reach USD 44 billion. The main reason is that day rates will not be rising as quickly.
- Onshore drilling will see a rise of 5 to 10% as the situation in North America returns to normal. Activity in the rest of the world will increase by about 10%, according to Spears & Associates.

Fig. 5 - The drilling market



Source: IFP/Economic Studies Division 2007

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### Key players on the drilling market

Whether they operate onshore or offshore, all players on the drilling market reported higher sales and a positive bottom line in 2006.

Table 2

Key players on the drilling market (offshore and onshore) in 2006

Company	Market share Onshore drilling	Company	Market share Offshore drilling
Nabors Industries	18%	Transocean	15%
Patterson UTI Energy	13%	GlobalSantaFe	10%
Ensign Resources	10%	Diamond Offsh.	8%
Helmerich & Payne	6%	Noble Drilling	7%
Precision Drilling	5%	ENSCO Int.	7%
Grey Wolf	5%	Pride Int.	6%
Unit Corp.	4%	Rowan Cies	4%
Pride International	2%	KCA Deutag	4%
		Seadrill	4%

Source: IFP/Economic Studies Division 2007

In 2006, Nabors Industries stayed in first place in onshore drilling, with about 18% of the market. Patterson UTI Energy and Ensign Resource Service represented 13% and 10%, respectively. Given the slump in North America in 2007, corporate earnings depended heavily on the geographic distribution of their operations. In 2006, Ensign lost two percentage points and Precision Drilling dropped down one place, holding 5% of the market. The sales of these companies went up less than the market overall, because the bulk of their activity is in Canada, where a slowdown in onshore drilling began in 2006 and became more pronounced in 2007. To maintain market share, these firms are seeking to diversify geographically, especially by reinforcing their operations in the United States or Latin America.

One highlight on the offshore drilling scene in 2007 was the announcement that the Number Two, GlobalSantaFe, would be absorbed by the Number One, Transocean. This combination will produce a giant in the oil services sector, representing 25% of the offshore drilling market, way out in front of its nearest competitors. The rationale for this transaction lay in the great technical complementarity of the two parties involved, which translates into a more diverse client portfolio: GlobalSantaFe specializes in the shallow offshore projects preferred by national companies whereas Transocean leads the very deep offshore sector, where the bulk of clients are international companies.

On a smaller scale, Seadrill won full control of Smedvig in early 2006 to become the seventh largest company on the offshore drilling market.

Finally, for companies like Diamond Offshore, firmly entrenched on the deep offshore segment where rental rates stayed high, the market was very favorable.

As for drilling equipment suppliers, we might mention the December 2007 acquisition of Grant Prideco by National Oilwell Varco (NOV). NOV specializes in the design, construction and sale of equipment for oil and gas drilling, production operations as well as the supply of services to the oil industry. Grant Prideco works mainly in the development of drilling technology (bits, pipes, etc.) and associated services. This acquisition should give NOV access to new segments of the market.

In addition, in late October 2007, the French tube manufacturer Vallourec announced an agreement with Grant Prideco to buy Atlas Bradford, TCA and Tube-Alloy. This deal, which will strengthen Vallourec on the oil and gas market in North America, will be honored even though Grant Prideco was bought out by NOV.

### Construction of offshore production infrastructure

#### Offshore construction: very busy in 2006 and 2007

The offshore construction activity, measured by the number of installations under construction, was down (-16%) for the first ten months of 2007 compared to the same period of 2006. Fixed platforms were hardest hit, down by nearly 30%, and subsea installations fell by 15%. Only floating support systems went up (+38%).

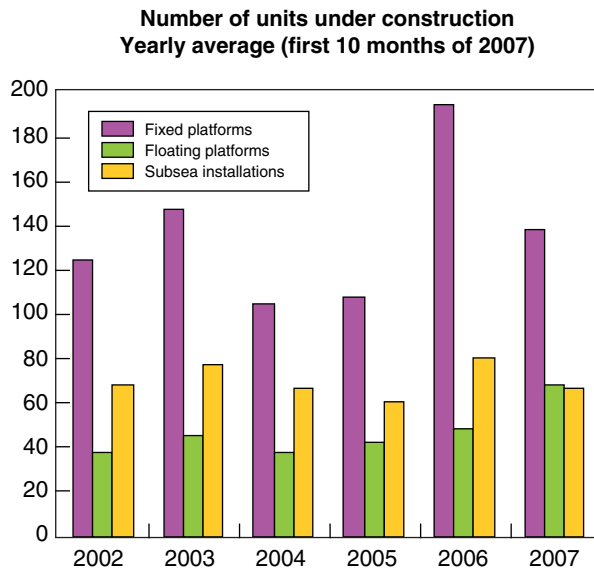
For the first ten months of 2007, fixed platforms fell by 30%. In 2007, there were an average of 138 platforms under construction versus 195 in 2006. Fifty-four percent of them were located in the Middle East and South-East Asia. All regions of the world except for the Middle East saw a drop in activity. This reflects the fact that exploration-production in the Middle East is currently vigorous as well as the shift in activity away from shallow offshore areas in favor of deepwaters in mature zones.

On the other hand, construction projects were up substantially (+35%), from 321 units for the first ten months of 2006 to 416 for the same period in 2007.

The number of floating platforms under construction for the first ten months of 2007 came to an average of 69 units, versus 50 in 2006. Of these, 25% were in Latin America and 22% in South-East Asia. The 38% increase in the number of units under construction between October 2006 and October 2007 can be attributed mainly to North America, South-East Asia and Western Europe. In other parts of the world, growth rates were lower.

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Fig. 6 - Offshore construction



Source: ODS-Petrodata - IFP/Economic Studies Division 2007

The number of construction projects was up (+16%) from 59 units in the first ten months of 2006 to 67 for the same period of 2007, with South-East Asia and West Africa primarily responsible for the increase.

As for subsea installations, the number of units under construction fell (-15%) from an average of 80 units in the first ten months of 2007 to 66 for the period in 2006. Of these, 32% were located in Western Europe, 18% in West Africa and 16% in the Gulf of Mexico. The biggest decreases occurred in Latin America and the Gulf of Mexico, each down by 6 units in 2007.

The number of construction projects rose 42% in 2007 over 2006, up from 175 to 240 units. The number of projects announced in Europe and West Africa both doubled in 2007 compared to 2006. In contrast, the number of projects in the Gulf of Mexico decreased by 7%.

### The market for offshore engineering and construction

#### Sales

We define this market to include the construction of platforms as well as the construction and supply of subsea equipment, but not maintenance services, other production support activities or floating installation leasing services.

The offshore construction market grew by 30% in 2006 over 2005 to USD 35.5 billion. In 2007, the earnings for the first three quarters posted by companies on this market, as well as indicators such as the construction of

Number of units planned (Yearly average (first 10 months of 2007))

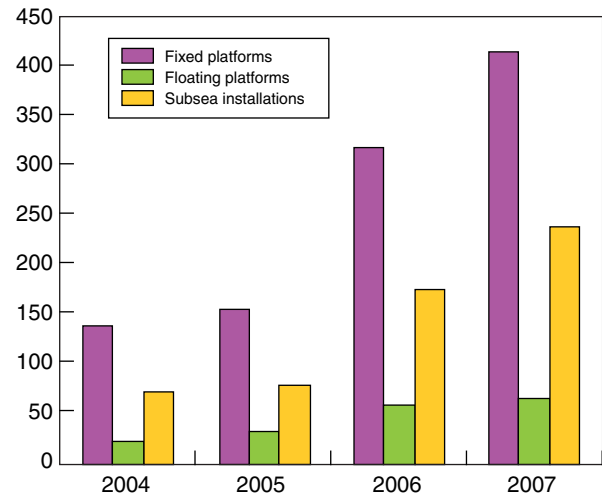
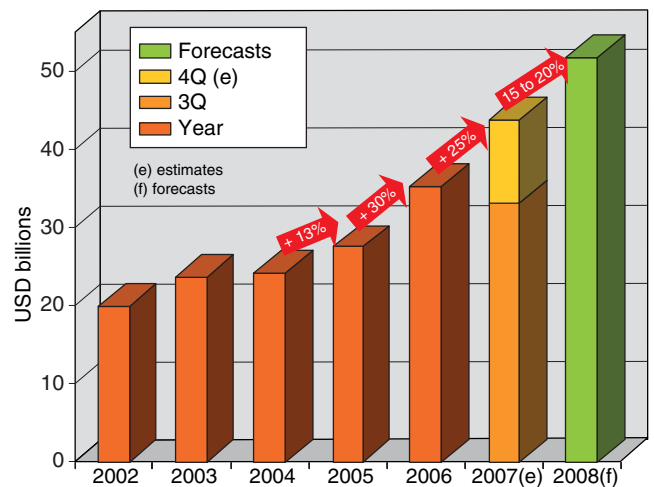


Fig. 7 - The market for offshore engineering, equipment and construction



Source: IFP/Economic Studies Division 2007

floating or subsea support systems, seem to indicate that the market will increase by about 25% to USD 44 billion.

In 2006, key market players reported higher sales and a bottom line in the black. Operating margins were up and companies were able to improve their financial status. Demand for offshore engineering and construction is so great that market players can actually pick and choose the contracts they wish to accept. They can dictate their terms, especially in the area of risk-sharing. The

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contracts of the early 2000s – still "turn key" – have been increasingly replaced by "cost-reimbursable contracts"; in other words, if project costs increase, they are no longer borne by the supplier alone but shared with the oil company.

A recent study by IFP points out that the number of new deepwater fields (i.e. at depths exceeding 1,000 m) coming on onstream during the period 2007-2012 is expected to be higher by a factor of three than for 2001-2006. More than half of these developments are expected to rely on subsea tie-backs with the FPSO being the next-best preference of operators. This seems to indicate that the offshore engineering, equipment and construction market will prosper in the next few years. According to a survey by Infield Systems, demand in West Africa and Latin America for subsea and floating equipment is expected to be especially vigorous; their capex is expected to grow by 35% and 15% respectively for floating systems in 2007-2012.

As far as 2008 is concerned, key market players saw higher backlogs at the end of September 2007, year on year. More construction projects were in the works in 2007 than the year before. This suggests that the market could continue to grow at a rate ranging from 15 to 20% in 2008 over 2007, driven by the subsea activity, to reach USD 52 billion.

### Key players

Aker Kvaerner, Technip and Saipem were still the front runners, with market share of 13.5%, 12% and 10%, respectively.

Table 3

Key players on the offshore construction market

Company	Market share 2006
Aker Kvaerner	13.5%
Technip	12%
Saipem	10%
FMC Technologies	6%
SBM Offshore	5.5%
Aceryg	5.5%
Subsea7	5%
Mc Dermott	4.5%
Global Industries	3.41%
Helix – Cal Dive	3%
KBR	3%

Source: IFP/Economic Studies Division 2007

In June 2007, Cal Dive announced its intention to acquire Horizon Offshore and that the transaction would be finalized before year-end. This merger gives Cal Dive access to international markets where it had previously operated on a small scale, such as Latin America or

West Africa. Another reason was the complementary nature of the businesses of each party: Cal Dive specializes in support ships and Horizon in pipelay and pipebure activities. The new company will be able to offer an integrated offering in the installation of subsea pipelines.

In April 2007, Halliburton separated completely from KBR, spinning it off as an independent concern. This move, planned since 2005, allows Halliburton to concentrate again on upstream services. In 2006, KBR represented nearly 43% of Halliburton sales.

### Conclusion

After a record year in 2005, 2006 was a banner year for the oil services and supply sector. Investments across the board, as well as the markets analyzed, showed growth rates that were up by 29 to 48% compared to 2005. While the "price effect" is partially responsible, activity is also very intense: there have never been so many wells drilled or offshore units built and, in the seismic sector, the number of active crews has been rising steadily since 2004.

In 2007, the frenetic race – which is what the exploration-production market has become – continued, even if individual segments, like onshore drilling in Canada, saw a downturn. Given the increase in raw material prices and the supply shortages affecting the equipment manufacture and construction segments, some field development projects had to be postponed for lack of available equipment.

It is estimated that, between 2005 and 2007, 80% of the increase in upstream investments is due to the "price effect" and 20% to the "volume effect".

Table 4

Change in the level of investment and on key service/supply markets

	2005	2006	2007	2008
E&P investments	+25%	+29%	+13%	+10 to 15%
Seismic	+25%	+42%	+20%	+ 20%
Onshore drilling	+35%	+35%	-5%	+ 5 to 10%
Offshore drilling	+25%	+48%	+45%	+ 15%
Offshore construction	+13%	+30%	+25%	+ 15 to 20%

Source: IFP/Economic Studies Division 2007

The overheated market should cool off a bit in 2008: the markets examined here should see growth that is lower yet substantial nonetheless, ranging from 5 to 20%. Activity should remain strong and prices should begin

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to stabilize, on the drilling segment especially, now that newbuild rigs are available.

Between 2004 and 2006, the oil services major companies reported sales gains of 60% and multiplied their net income by 3. The record profits posted by these companies during this two-year period allowed them to recover from difficult financial situations (Halliburton) and finance large-scale consolidation operations such as the CGG/Veritas merger, Schlumberger's purchase

of a 30% interest in WesternGeco from Baker Hughes or the GlobalSantaFe-Transocean merger. In addition, the fact that oil services are in short supply has enabled them to turn the balance of power around and dictate their terms to oil companies, especially in the area of risk-sharing.

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