

# Exploration-Production Activity and Market

*After rising by 10% in 2004 to \$125 billion, world investment in E&P (not including the CIS or China) is expected to rise in 2005 to \$135 billion due to the high oil price, which passed the \$50/bbl mark in the second half of 2004*

## Capital Expenditure in 2004 and Outlook for 2005

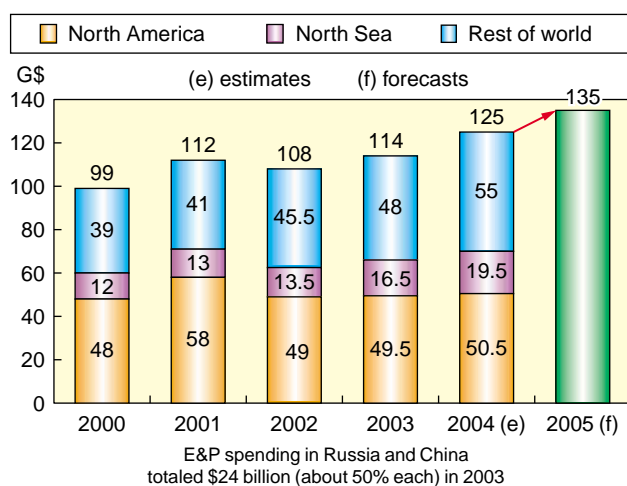
In 2003, world capital expenditure in E&P (not including the CIS or China) rose by 5.6% to \$114 billion, where it had stood in 2001. This is because the Brent price climbed during the second half of 2002, when oil companies plan their spending budget.

In 2004, E&P expenditure (not including the CIS or China) grew by nearly 10%, double the 2003 rate, to \$125 billion. The high oil price was a contributing factor: the Brent averaged \$30/bbl for the year 2003.

In North America, spending only rose 2%, with the United States and Canada showing contrasting trends:

- activity in the U.S. was up 5% due to a rally in the Gulf of Mexico;
- it dropped by 4% in Canada as largest Canadian companies made spending cutbacks.

Fig. 1 Capital expenditure, E&P (not including the CIS or China)



*N.B.:* 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/Economics Studies/2004

In the North Sea, investment continued to climb, driven by Norway and the United Kingdom. The latter would like their oil production to peak as late as possible and to develop their gas supply. In 2004, total capex reached \$20 billion, up 18%.

Taking a constant 2002 exchange rate terms to get a better idea of volume variations, we obtain \$16.5 billion for E&P investment in the North Sea, or an increase of only 10%.

In the rest of the world, expenditure rose twice as fast as in 2003: spending took off in Latin America following a slowdown last year in Venezuela, and also in Asia, led by India.

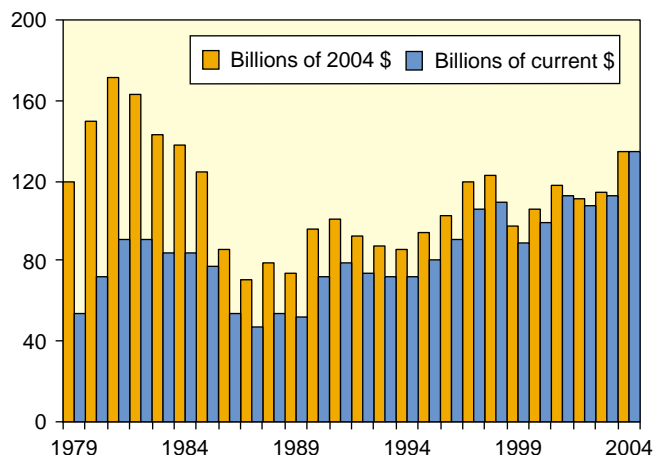
World E&P capex totaled nearly \$150 billion in 2004, including Russia and China. In 2003, the latter spent \$24 billion, relatively evenly divided between them.

In 2005, world E&P investment (not including the CIS or China) is expected to reach \$135 billion as the oil price, which recorded record highs in early 2004 and exceeded \$50/bbl in the second half of 2004.

## Capital Spending over the Last 25 Years

*Expressed in 2004 dollars, world investment in the exploration-production sector (not including the CIS or China) peaked in 1981 at \$170 billion. At the time, the Brent price stood at \$70/bbl (in 2004 dollars). It then declined very substantially, in step with a barrel price that fell below \$80 billion during the countershock of 1986.*

Fig. 2 Variations in E&P investment, in billions of current and constant dollars (2004)



Source: IFP/Economics Studies/2004

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During the 1990s, capital spending rallied although its level was not as high as in the early 1980s. In the wake of the 1986 countershock, it fluctuated with the barrel price, given that a rise in barrel price will trigger a rise in E&P capex after period of 6 months to 1 year; a price decrease will produce the inverse effect.

*Since the early 1990s, the elasticity of investment to the price per barrel has averaged about 0.4-0.5.* In other words, a 10% price increase has translated, on average, into a hike of 4 to 5% in spending one year later. This trend seems to persist today: we think that capital expenditure will rise by 15 to 18% for the period 2003-2005, following a crude price increase of 34% in 2002-2004.

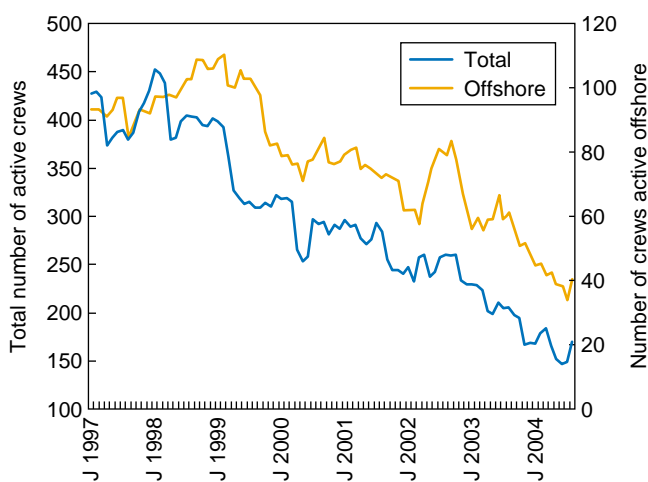
However, the capex trend over the last 25 years needs to be put into perspective. Production costs have dropped as a result of advances in technology, among other things. In the North Sea, for instance, production costs were halved between 1975 and 1995.

## Seismic

### Worldwide Activity (Number of Active Crews)

Since the late 1990s, a “decoupling” of activity and total sales has occurred in the seismic sector.

Fig. 3 Number of seismic crews active worldwide (not including the CIS or China)



Source: World Geophysical News

IFPI/Economics Studies/2004

The number of seismic crews active worldwide began to regress in 1999 and the trend has accelerated in 2003 and 2004. It fell by nearly 9% 2002, by about 18% in 2003 and is expected to fall by 20% in 2004, based on the figures for the early part of the year. In 2004, two geographical trends stood out compared to 2003: in Europe, activity returned to positive

growth from a very low level and, after several years of expansion, South-East Asia experienced a downturn.

Variations in offshore activity are never as marked as for — and can even run counter to — trends in overall activity. In 2003, offshore activity fell 20% and, based on the results for the first half-year 2004, a decrease of 30% can be expected for the year. In 2004, no geographic region was spared by a substantial worldwide decrease in offshore seismic activity. These figures do not include the CIS countries or China, for which it is still difficult to obtain consistent data.

### The Seismic Market (Data Acquisition and Processing and Equipment)

#### • The Market

Despite relatively high oil prices in recent years, total market sales and profits could not make a comeback to their pre-1999 figures. Competition was tough and margins low, because of low contractor prices. New backlogs were up over 2003, affording a note of optimism for 2005, even if uncertainty persists as to how service prices in the sector will evolve.

The seismic services and equipment market was worth an estimated \$4.7 billion in 2003, up 5% over 2002, while activity (expressed as the number of active seismic crews) fell by 18% for the period. This divergence between market and activity trends emerged several years ago and is mainly due to the evolution of multi-client business:

- a decrease in the total number of multi-client surveys benefited exclusive surveys;
- there was more prefinancing of non-exclusive surveys than in previous years;
- the sale in 2003 of multi-client data acquired in previous years did not generate activity, but was included in turnover.

In 2004, the market was estimated at \$4.8 billion, up 2% over 2003. This apparent stability fails to convey the contrast between the equipment sector, where growth exceeded 50%, and data acquisition & processing, which fell by 2%.

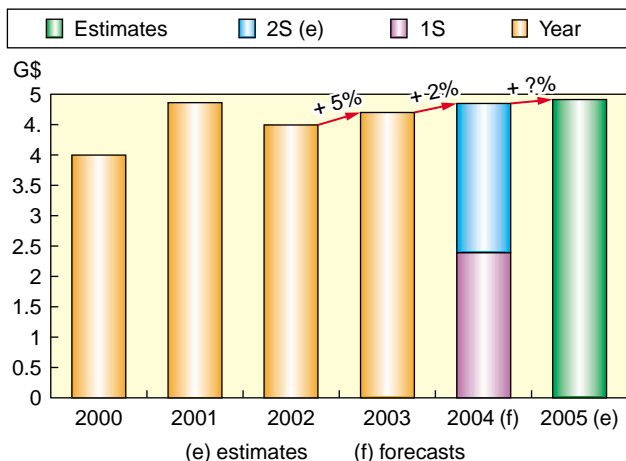
Since 2001, the data acquisition and processing market has oscillated around \$4 billion. During this period, contractors saw an overall decline in multi-client activity. The price trend was flat and even decreased due to the continued existence of surplus capacity, particularly in the highly competitive sector of marine acquisition. In marine seismic, the capacity of seismic vessels still exceeded demand. In land seismic, however, total available capacity seemed back at equilibrium as a result of reorganization efforts made by seismic contractors in 2002-2003.

In 2004, equipment sales rose by over 50% to \$700 million, following a 15% increase in 2003, thanks to a rally in land

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seismic equipment sales. Operating margins improved and continued to be higher than in services: they were in the vicinity of 15% in 2003-2004.

Fig.4 The seismic market



Source: IFP/Economics Studies/2004

• *The Market Players*

In 2003, the key contractors on the seismic market were: WesternGeco (with 25% of the market), PGS (16%), CGG (15%), Veritas DGC (11%), BGP (7%) and Fugro (5%).

Except for WesternGeco, which saw sales fall by 20%, the key contractors saw sales rise in 2003: PGS (+10%), CGG (+4%) and Veritas DGC (+10%).

The front-runners were joined by a new arrival: the Chinese state-owned firm BGP. By dint of an aggressive pricing policy, it moved into the Number Five position worldwide

with 7% of the market. In recent years, this major provider of seismic surveys in China has extended operations to the rest of the world and won market share from its international competitors.

2004 was a year for mergers and acquisitions, especially by Sercel, the equipment arm of the CGG Group, and its biggest rival, Input/Output. Sercel made a number of acquisitions to consolidate its position as the leading equipment supplier, including a 51% stake in the Chinese company Hebei Junfeng Geophysical. At the same time, Input/Output was expanding its activities to seismic processing through its acquisition of Concept Systems and GX Technology.

## Drilling

### Number of Wells Drilled

In terms of the number of wells drilled, world activity (not including China and the CIS) mainly depended on North America, where nearly 85% of the wells drilled are located. In 2003, onshore wells represented over 90% of the world total, with a high concentration in North America. Offshore drilling was more geographically diverse: 38% on the North American continent, 30% in Asia (not including China), 15% in the North Sea and 17% in Latin America.

All in all, nearly 54,000 wells were drilled worldwide in 2003 (not including the CIS or China), up nearly 25% year on year. In 2004, the number of wells drilled worldwide (not including the CIS or China) increased by 11% (down compared to 2003) to over 60,000 wells. Mainly located in the United States, growth in North America slowed considerably to 12%. The rest of the world reported growth of 8%, driven by Latin

Fig. 5 Wells drilled per geographic area

	2001	2002	2003	2004	Var. 2003/2002	Var. 2004/2003
<b>North America</b>	<b>49 250</b>	<b>36 600</b>	<b>47 242</b>	<b>52 782</b>	<b>29.1%</b>	<b>11.7%</b>
<b>Rest of world</b>	<b>7 401</b>	<b>7 209</b>	<b>7 344</b>	<b>7 899</b>	<b>1.9%</b>	<b>7.6%</b>
<b>including: Latin America</b>	<b>2 658</b>	<b>2 128</b>	<b>2 295</b>	<b>2 712</b>	<b>7.8%</b>	<b>18.2%</b>
<b>Western Europe</b>	624	615	494	426	- 19.7%	- 13.8%
<b>Africa</b>	725	768	757	737	- 1.4%	- 2.6%
<b>The Middle East</b>	1 287	1 393	1 451	1 487	4.2 %	2.5%
<b>Asia, not including China</b>	1 948	2 155	2 184	2 356	1.3%	7.9%
<b>World, not including the CIS or China</b>	<b>56 651</b>	<b>43 809</b>	<b>54 586</b>	<b>60 681</b>	<b>24.6%</b>	<b>11.2%</b>
<b>China</b>	<b>9 814</b>	<b>9 999</b>	<b>10 204</b>	<b>10 308</b>	<b>2.1%</b>	<b>1.0%</b>
<b>CIS</b>	<b>5 910</b>	<b>5 008</b>	<b>5 563</b>	<b>5 811</b>	<b>11.1%</b>	<b>4.5%</b>
<b>World including the CIS and China</b>	<b>72 375</b>	<b>58 816</b>	<b>70 353</b>	<b>76 800</b>	<b>19.6%</b>	<b>9.2%</b>

Source : IHS Energy, Spears

IFP/Economics Studies/2004

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America and countries like Venezuela that registered growth rates of about 20%.

If one includes the CIS countries and China, 77,000 wells were drilled worldwide in 2004.

The rate of utilization worldwide for offshore drilling rigs remained stable at about 81% in 2003. A 6-point increase in the Gulf of Mexico offset a 5-point decrease in the North Sea. These trends affected day rates for jack-ups in the Gulf Mexico (+6%) and in the North Sea (-11%). In 2004, contrasts in regional trends persisted and increased as drilling activity continued to rise in the Gulf of Mexico (+4 points) and fall in the North Sea (-2 points). Jack-up day rates were up 50% in the Gulf of Mexico but down 17% in the North Sea.

## The Drilling Market

- *A Rally in 2003*

Between 2002 and 2003, the world drilling market advanced by 7% to nearly \$21 billion. The onshore and offshore segments showing contrasting trends: the onshore market was up 30% to \$7.7 billion whereas the offshore market obtained less favorable results (-2.3%).

- *Continued Growth in 2004*

In the onshore drilling sector, operators obtained results that were up 30% for the first half of 2004, year on year. Offshore grew by a modest 1% for the same period year on year, reversing the trend of previous years.

In 2004, the world drilling market was worth nearly \$23 billion, up about 8 or 9%.

– Onshore drilling fell off substantially in 2002, then returned to growth in 2003. The uptrend continued in 2004, but more slowly (about 20%), reaching over \$9.4 billion.

– Offshore drilling was down in 2002 and 2003, but the market rose slightly in 2004 to \$13.4 billion. The reason for this small upswing: the decrease in drilling activity (at half its 2003 level) was offset by higher day rates in the Gulf of Mexico, which contains 20% of the world’s active drilling rigs.

In 2005, the onshore market is not expected to grow by more than 5%, but the offshore segment should start looking better (+3%).

- *Key Players<sup>(1)</sup>*

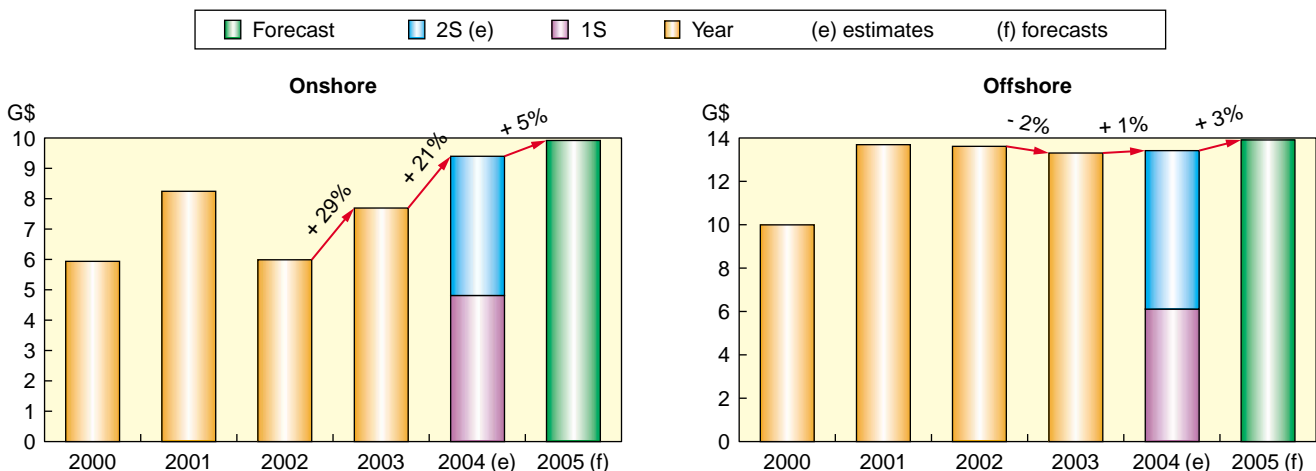
Many mergers and acquisitions took place in 2000 and 2001, which seems to have firmly consolidated the onshore and offshore drilling markets. The acquisitions made in 2003 and 2004 were smaller in scale.

The world’s Number One in onshore drilling, Nabors Industries, controls about 16% of the market. In 2003, it announced the acquisition of two small Canadian oil services and supply companies, Enserco Energy Service Company and Ryan Energy Technologies. Number Two and Number Three are both Canadian contractors, Ensign Resource Services and Precision Drilling. For both, market share was up to 12% and 9%, respectively. A new entity, Patterson UTI Energy, ranked fourth with 8% of this segment.

The key players in the offshore sector saw market share drop in 2003. For the incontestable leader, Transocean, market share fell by two points to 18%. The Number Two,

(1) Based on the annual results for 2003.

Fig. 6 Drilling market



Source: IFP/Economics Studies/2004

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GlobalSantaFe — created at year-end 2001 when Global Marine merged with Santa Fe International — saw market share (10.6%) retreat over 2002. Pride International, which acquired Marine Drilling in 2001, stood third with an increasing share of 7%.

## Construction of Offshore Production Infrastructure

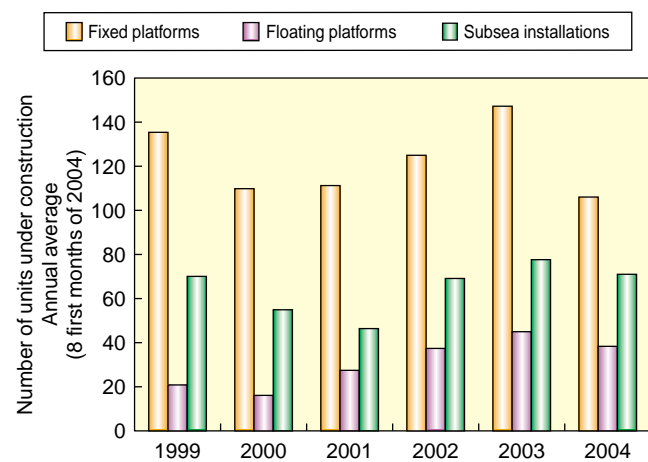
### Offshore Construction Activity

Very high in 2003, offshore construction activity, measured in the number of installations under construction, showed signs of slackening in the first half of 2004. This trend prevailed in all parts of the world except the Middle East and India.

The fixed platforms segment was hardest hit: at the end of June 2004, there were 106 units under construction versus 147 year on year (–28%). Only the Middle East and India experienced growth, with 60 and 75% additional platforms under construction, respectively.

As for floating platforms, there were 39 units under construction at the end of June 2004 compared to 47 one year earlier, down 17%. This downtrend was mainly confined to the Gulf of Mexico, where units under construction fell from 13 to 6. Latin America saw an increase: 8 platforms under construction at the end of June 2004 versus 6 in 2003. West Africa remained stable: 13 compared to 14 in 2003.

Fig. 7 Offshore construction activity



Source: Offshore Data Service

IFPI/Economics Studies/2004

The number of subsea installations under construction was about the same as for the previous year (74 active projects at the end of June 2003, 75 one year earlier), representing a slight increase in the Gulf of Mexico and a moderate decrease in the North Sea and West Africa. However, the size of

projects was larger in 2004: expressed in the number of wellheads, activity grew by 12% with 471 wellheads to be installed in 2004 versus 419 in 2003. Also, there was an increase in installation depth: in 2004, 65% of the wellheads to be installed exceeded a depth of 300 m versus 54% in 2003.

In the first half-year 2004, there was a divergence in trend between the number of installations under construction and the volume of sales reported by companies in the sector. There were several reasons:

- Project size and complexity were clearly an important element, as shown by the evolution in subsea projects between 2003 and 2004.
- Large-scale projects do not generate the highest volume of sales in the first year. Usually, a three-year project will report 50% of its total sales in the second year. There is a time lag between the moment when the contract is awarded and an increase in sales.

The only market segment with a more direct relationship between the number of projects and sales volume is that of fixed platforms. Projects are usually smaller and do not last as long (80% of projects underway at a given moment in time will reach completion within the next 6 months).

### The Market for Offshore Engineering, Construction and Equipment for Offshore Production

It is difficult to characterize this market involving many players that differ in terms of their business activities, size and international scale.

Our definition of the market encompasses three business activities: platform construction, the construction of subsea installations and the supply of subsea production equipment. We have not included related activities, such as maintenance services, other production support activities or the leasing of floating installations.

Thus defined, the market was worth \$22.3 billion in 2003, up 23% over 2002. However, if we take a constant exchange rate, the increase was only 15%. Despite strong market growth, many companies continued to report losses, often because they were liquidating liabilities consisting of loss-making EPIC contracts (EPIC: Engineering, Procurement, Installation and Commissioning). At year-end 2003, McDermott and Stolt Offshore, found itself in financial difficulty.

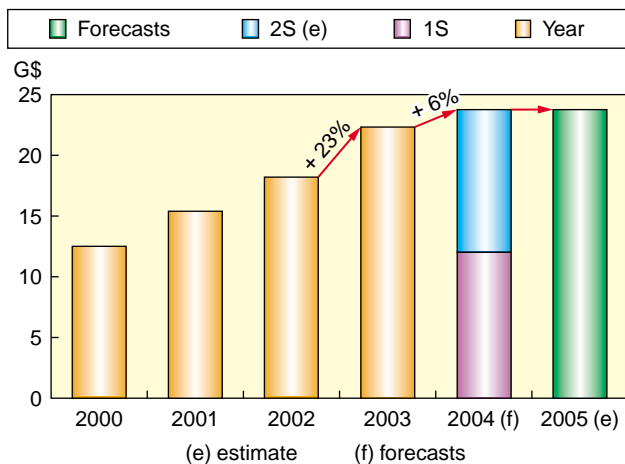
After financial reorganization that involved a capital increase, converting part of its debt to shares and the disposal of non-strategic activities, Stolt Offshore has since recovered a certain margin of maneuver.

For McDermott, whose subsidiary Babcock&Wilcox is in bankruptcy due to asbestos-related obligations, the already

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disquieting situation of the offshore sector could be aggravated by a 40% drop in new orders.

Fig. 8 The offshore engineering, equipment and construction market



Source: IFP/Economics Studies/2004

In the first half of 2004, the market expanded by a modest 6 or 7%, year on year. Given a constant exchange rate, the market remained relatively stable. The slackening of activity (*i.e.* the number of projects in the first half-year) leads us to expect market stagnation in 2004.

## Market Players

A few key players dominated the market, especially Technip and Saipem, each with market share of between 10 and 13%. Next come McDermott, Kvaerner, Stolt Offshore and Halliburton-KBR, which each controlled 6 to 9% of the market. On specific segments: FMC Technologies dominated in subsea equipment supply, Oceaneering in jobs requiring underwater robots, as well as in umbilicals via its subsidiary Multiflex, and IHC-Caland in FPSOs (Floating Production Storage and Offloading).

For fixed and floating platforms and FPSOs, the South Korean yards stepped up the pace of competition. These companies, especially Daewo, Hyundai and Samsung, formerly subcontractors for the most part, are positioned for project management and tendering in response to calls for bids.

The sector continued restructuring in 2003 and 2004. In 2003, Halliburton transferred Wellstream (a subsidiary specialized in flexible pipe for subsea production) to Candover Partners Ltd. for \$141 million. This followed the 2002 merger of Halliburton Subsea with DSND's subsea arm to form Subsea 7. In 2004, ABB sold its offshore activities (Vetco Gray and ABB Offshore, renamed Vetco Aibel) to a group of investors composed of Candover, JPMorgan and 3i for \$925 million.

Not all deals were on such a large scale. In 2004, Stolt Offshore transferred its ROV drill support business to Oceaneering for \$48 million and sold its subsidiary Serimer Dasa (pipeline welding) to an investment fund for \$40 million. In 2003, McDermott disposed of Menck, a subsidiary specialized in subsea foundations and hydraulic hammers, to Jacobs for \$17 million.

In mid 2004, new orders were spread out. While it is hard to detect a clear trend for 2005, most market players point out that the many calls for bids should lead to contract awards in the second half-year.

## Conclusions

In 2004, world E&P investment (not including the CIS or China) reached \$125 billion, up nearly 10% over 2003. The high price of oil was the main reason: it has a large impact on investment decisions by oil operators.

The drilling market was up by about 8 or 9%, especially onshore. Offshore grew at a slower pace than in previous years. Finally, the seismic market remained relatively stable, showing contrasting trends in the data acquisition and equipment sectors.

In 2005, world E&P investment (not including the CIS or China) is expected to reach \$135 billion, influenced by the oil price, which recorded record highs in early 2004 and exceeded \$50/bbl in the second half of 2004 on the New York market.

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