**Recent Exploration Performance – Evidence of a Downturn?**

By

Andrew Latham¹

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¹Upstream Consultancy, Wood Mackenzie, Houston, TX

**Abstract**

This paper examines the new field discoveries of the last two-three years versus the previous ten years. It reviews the evidence of a decline in exploration performance.

While gross resource volumes discovered per year seem to be reducing, data for very recent finds is incomplete. This gives the possibility that the picture for 2003 and 2004 will improve.

It is certainly the case that discoveries are becoming harder to commercialize as there are fewer giant oil fields being discovered.

Furthermore, discoveries often feature relatively low value reserves from long lead time gas, heavier oil, deeper water, and harsher fiscal terms.

On balance, deepwater remains the most important source of new field reserves and is the main driver of value creation for much of the exploration industry. Success trends in these plays are a key indicator for future performance.

The overall effect is that the goal posts are moving for exploration companies. Many companies can no longer afford to view traditional exploration in isolation. Increasingly, it forms part of a broader resource capture strategy.

We review all these key aspects of exploration during this presentation and draw some conclusions that will be important to those companies interested in new discoveries and exploration performance.
Recent Exploration Performance
– Evidence of a Downturn?

Andrew Latham

<date/month>
The market is asking fundamental questions of exploration

- The end of exploration as we know it?
  Bernstein Research Report, December 2004

- Spend Spend Spend: It was another impressive year for exploration spending in 2004
  Petroleum Economist, February 2005

- Who shot JR?
  Deutsche Bank Equity Research, June 2004

- Oil & Gas Exploration - Catching a crab?
  Deutsche Bank Equity Research, February 2003

energy@woodmac.com
www.woodmac.com
The ten-year view looks rosy with a lot of oil found

Commercial Oil Reserves Discovered by IOCs 1994-2003
Total = 60 billion boe

- Kazakhstan: 27
- Angola (deepwater): 4
- USA (GoM deepwater): 14
- Nigeria (deepwater): 6
- Rest of the World: 8
Exploration has also discovered a lot of commercial gas

Commercial Gas Reserves Discovered by IOCs 1994-2003
Total = 200+ tcf
And exploration has also discovered a lot of resource

Technical Reserves Discovered by IOCs 1994-2003
Total = 56 billion boe

- Australia (offshore): 18
- Angola (deepwater): 8
- Indonesia: 2
- Bolivia: 2
- Egypt: 2
- Norway: 4
- USA (GoM deepwater): 4
- Nigeria (deepwater): 4
- Azerbaijan: 4
- Malaysia: 4
- Rest of the World: 4

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But is there a trend of declining quality of discoveries?

Oil Reserves Discovered by Exploration Drilling

<table>
<thead>
<tr>
<th>Year</th>
<th>Commercial Oil</th>
<th>Resource Oil</th>
</tr>
</thead>
<tbody>
<tr>
<td>1994</td>
<td>100%</td>
<td>0%</td>
</tr>
<tr>
<td>1995</td>
<td>90%</td>
<td>10%</td>
</tr>
<tr>
<td>1996</td>
<td>80%</td>
<td>20%</td>
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<tr>
<td>1997</td>
<td>70%</td>
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<tr>
<td>2002</td>
<td>20%</td>
<td>80%</td>
</tr>
<tr>
<td>2003</td>
<td>10%</td>
<td>90%</td>
</tr>
</tbody>
</table>

Commercial = 77% of Total
With gas much harder to commercialise quickly
Lower “commerciality” means lower value

Example company results – new fields discovered 1995-2004

Data: Reserves (mmboe), Value ($million), Value/boe ($/boe)
Several factors contribute to a decline in reserves quality

- Move to higher tax regions
- Stranded Gas
- Longer lead times
- Fewer oil giants

Average value of boe discovered

1997

2004

energy@woodmac.com
www.woodmac.com
Exploration value creation is localised

Source: Wood Mackenzie Global Oil & Gas Risks and Rewards
For the Majors, 5-year exploration results look OK

Source: Wood Mackenzie working interest reserve estimates
...but their very recent exploration results have been poor

Companies: BP, Chevron, ConocoPhillips, ExxonMobil, Eni, Repsol-YPF, Shell, Statoil and Total
Source: Wood Mackenzie, company reports
The Majors are not spending price windfall on exploration

Source: company annual reports (BP, Chevron, ConocoPhillips, ExxonMobil, Eni, Repsol-YPF, Shell, Statoil and Total). Consolidated subsidiaries only.
Relative exploration investment is way down

Source: Company reports / Mid-cap average based on peer group of 14 Wood Mackenzie Tier 2 companies
Opportunity constraint is part of the issue

![Chart showing signature bonuses for different years and countries such as US Gulf of Mexico, Nigeria, Brazil, and Angola. The chart includes bars for each year from 1990 to 2003, with different colors indicating the contributions from each country.](chart.png)
And exploration is not the whole organic story…

Resource Additions 2000-2004

Source Wood Mackenzie estimates

Resource additions includes access to reserves that are already discovered, including heavy oil and award of development contracts
Conclusions – exploration performance

Last ten years: ✔ ✔

Last five years: ✔

Last two years: ?

Incomplete data
Expect current estimates to increase

Exploration is still the main source of organic growth even for the largest Majors
Future exploration strategies – varied and complex
Thank you for your attention

Andrew.Latham@woodmac.com