



Project: The Technology Management Network  
Meeting type: **Meeting no. 5: The Value of Technology**  
Date: Wednesday 15 March 2000  
Venue: The Shell Lensbury Club, Broom Road, Teddington, Middlesex (Greater London) TW11 9NU, Tel: + 44 20 8614 6500, Fax: + 44 20 8614 6502, Contact: Melissa Vinall. E-mail: [lensbury@si.shell.com](mailto:lensbury@si.shell.com)  
Contact: Jenny Smith, Offshore Technology Management Ltd, 44 Quarry Street, Guildford GU1 3XQ, UK, Tel: + 44 1483 598000, Fax: + 44 1483 598010, Mobile: 07771 545866, E-mail: [jenny.smith@otmnet.co.uk](mailto:jenny.smith@otmnet.co.uk)  
Hotel: The Shell Lensbury Club. Bed & breakfast = standard room: £60.50, executive room: £77.50

**Booking: Please advise OTM of your accommodation requirements by or on Friday 10 March 2000 – please contact Catherine Thompson, E-mail: [catherine.thompson@otmnet.co.uk](mailto:catherine.thompson@otmnet.co.uk)**

Travel: There is limited parking at the Lensbury with the M3 being the most convenient route in from the M25. Teddington, Hampton Wick and Richmond are the closest railway stations, with Richmond having a direct link to Waterloo station. From Heathrow it is best to take a taxi (around 30 mins, although it could be longer than this in rush-hour). *We can book taxis to meet you at the airport.*

Dinner: A TMN dinner will be held on the evening of 14 March 2000, 7.30 for 8.00pm.

#### Agenda:

<b>Arrival and tea/ coffee</b>		<b>From 8.00</b>
1.	Welcome and introductions	OTM 8.30
2.	Framework and objectives for the day	OTM/ All 8.40
3.	The value of technology – an in-house study, followed by questions and discussion	Ole Lindefjeld, Conoco 8.50
<b>Tea/ coffee</b>		<b>10.10</b>
4.	Round table sharing of issues/ problems/ processes and solutions related to establishing and monitoring the value of technology	All, facilitated by OTM 10.30
5.	Guest presentation on technology management processes	Outi Wiklund, Borealis Group 11.30
6.	Defining and introducing afternoon workgroup session on the value of technology	12.15
<b>Lunch</b>		<b>12.30</b>
7.	Workgroup session	All, facilitated by OTM 13.30
8.	<i>The analysts' view of sector performance</i>	<i>Wendy Anderson, Lehman Bros. (CANCELLATION)</i>
9.	Benchmarking – preliminary proposals and debate	14.15
<b>Tea/ coffee</b>		<b>15.00</b>
10.	Website/ project management/ participation update	15.20
11.	Summary of day and next meeting date/ venue/ topic	15.50
<b>Meeting ends</b>		<b>16.00</b>



## Expected attendees

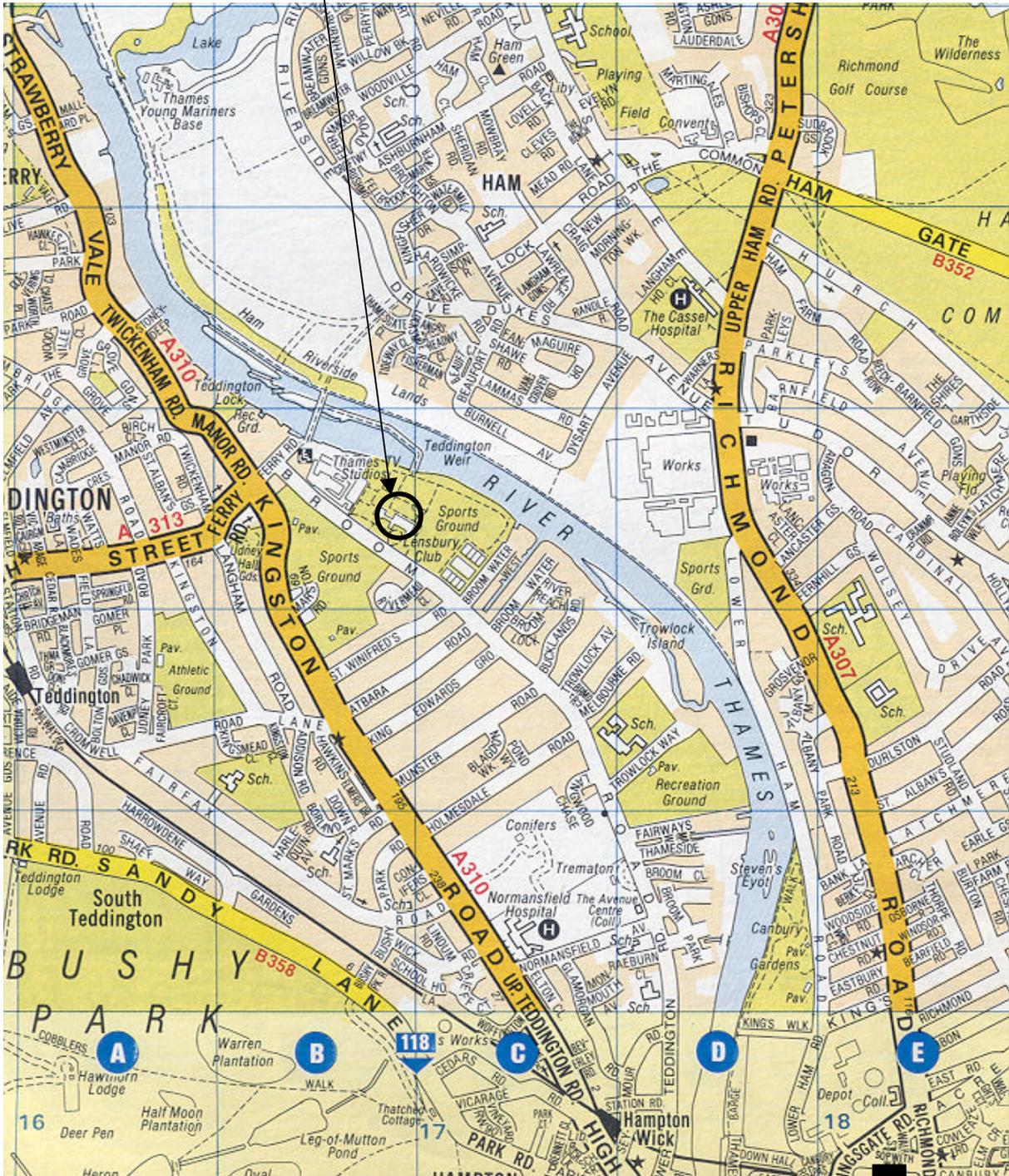
BG International	Alan Turner
BP Amoco	?
Borealis Group	Outi Wiklund
Conoco Norway	Ole Lindefjeld
Conoco UK	Peter Wingate
Elf Exploration	Alan Burns
Elf Exploration & Production	Pierre-Alain Delaittre
ENI Agip	Giambattista de Ghetto
Norsk Hydro	Finn-Erik Skaar
Norsk Hydro	Jens Hagen
OTM	Jenny Smith
Roy St Pier	Ranger Oil
Shell	Keith Eastwood

## Apologies

- Mike Taylor, ExxonMobil
- Wendy Anderson, Lehman Bros.
- Jan Morten Ertsaas, Statoil



The Lensbury Club



Richmond railway station



## The Value of Technology

The main reason for developing and applying new technology, processes or equipment in the upstream oil & gas sector, is to improve productivity and subsequently the profitability of a company. Increasingly important alternative reasons include health & safety and the environment, however, the profit motive remains the strongest driver. Hence, it becomes important to be able to understand whether new technology has achieved this goal and ultimately, to consider the cost:benefit equation of the entire R&D process within a company. This may seem obvious logic, but in many businesses, the difficulties of making this assessment have resulted in R&D being continued almost as a 'matter of faith' or being cut altogether. In addition, assets view new technology (particularly the incorporation of new equipment) as being high risk.

The aims of the next TMN meeting on 27 January are to

- consider the difficulties inherent in calculating the value of technology
- determine the necessity for making this assessment
- share experiences and ideas relating to calculating value
- develop learning and understanding in this area

Members are asked to come to the meeting with information on one or more examples/ case histories in their own or other organisations where a technology has been developed and applied and its value calculated (however cursorily). These can be shared in the round table discussion, the processes analysed and some consensus sought. Attendees are welcome to bring presentation slides to help illustrate your points.

A robust process for monitoring technology added value over time, could provide a strong justification for maintaining and strengthening R&D activities. Senior management, budget-setters, asset managers and investors all require financial evidence of the benefit of new technology development. The R&D function provides a service to the remainder of the company and if measured in isolation would appear to be making a loss and therefore be a liability to the company. By gaining a view of the value of individual applied technologies, these can be weighed against the costs of R&D. In addition, assets should have more confidence to embrace new technology if they are able to see financial evidence of its worth.

Measuring the value of applied technology and maintaining a process for the collection and aggregation of such information, is itself however, a complicated and possibly expensive business. Individual outputs from the R&D function need to be tracked to monitor their usage and calculate their added value. Technologies may result in benefits through increased asset productivity (or a slowed decline in productivity), direct sales or licencing/royalties. However, in the upstream oil & gas sector, productivity is by far the most significant factor.

So how to assess the value added of a single technology? The following factors would likely need to be taken into account:

- Cost of development
- Cost of promotion, communication and application (from asset and R&D technology support)
- Forecast productivity over time without application of new technology
- Actual productivity over time with application of new technology

Whereas it may be straight forward to calculate the first two costs, since these are past and 'actual', the last two items are much more complex. Forecasts are notoriously inaccurate since only certain variables can be foreseen with reasonable certainty. Actual productivity over time is clearly measurable, but factors other than the new technology being assessed are also at play. Isolating gains or losses due only to the new technology may be virtually impossible. Also, the new technology itself may not increase productivity but may impact on other processes, which themselves lead to greater productivity. The oil & gas industry is not subject to the 'normal' measures such as '%age of sales from new products' and 'market share gained by R&D'. Even the costs may be difficult to ascertain, as resources will have been expended by persons outside of the R&D 'department', ie by assets, senior management etc, unless a clear cost centre was set up at the start. During the meeting, we should explore these dilemmas and how different companies have approached their resolution.

However, 'softer' measures may be simpler to employ and would still have considerable value. For instance, those applying a new technology can provide views of 'perceived value' and a questionnaire could accompany each new technology delivery, to be completed by the asset. The term 'value' could then include non-financial measures, such as improved safety, better environmental compliance, better employee working conditions etc. Value of the technology itself could be supplemented by value provided by the R&D function in ensuring a smooth application (ie transfer of knowledge, design geared to operations, on-site assistance).

