

## **Seabed Logging - Changing the Dynamics of Exploration - New Information Enabling New Discoveries**

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As exploration moves into ever more challenging deep water environments, drilling costs have spiraled and exploration risk has become a major factor for operators. Seabed logging has proven its ability to reduce risk by measuring subsurface resistivity prior to drilling, and evaluating the presence of hydrocarbons in structures identified from seismic. Although this technology has shown significant value already, it may be that the greatest value in applying seabed logging may be much earlier in the exploration workflow. What if we applied seabed logging on a regional basis to identify the most prospective areas early in the workflow? This approach, known as scanning, would allow seismic, drilling and other resources to be focused on areas that actually contain hydrocarbons, resulting in reduced time to first oil and reduced finding cost.

Furthermore, many unconventional trap types, such as stratigraphic traps which may have little or no amplitude expression on seismic data are either not detected on seismic, or, when detected, they remain undrilled. The scanning technique offers the promise of detecting these traps, and generating new commercial prospects.

In this paper we will use real data examples to review the principles of seabed logging, and discuss how technology and workflows can be adapted to enable rapid scanning of frontier areas. Efficient operational methods, using modern fully three dimensional wide azimuth acquisition and processing techniques are making seabed logging scanning a powerful and significant exploration tool, especially in deep water. Electromagnetic scanning data is a powerful complement to seismic data, that, when properly integrated and interpreted, can dramatically change the dynamics of risk and reward in exploration.