



## Advances in Seismic Data Acquisition

David Monk\*

Apache Corporation, Houston, Texas, United States  
David.Monk@usa.apachecorp.com

### Abstract

At any specific time, most geophysicists might say that there haven't been many significant changes in seismic acquisition technology over the last couple of years. Much to the frustration of the innovators in our business, the seismic industry is notoriously slow at adoption of new technology. However, when looked at over a longer time scale it is clear that there have been significant changes in the way that seismic data is acquired (and processed), in addition to fundamental changes in the quantity and type of data that are acquired.

While it is easy to look backwards and review changes that have occurred, in this presentation we will attempt to look forward and suggest what seismic acquisition may look like in the future. There have been step changes in the number of seismic data channels that are recorded for each shot, and this trend shows no sign of diminishing. The changing face of the computing industry is likely to keep up with these changes and allow us to better evaluate large quantities of data in the field but how large will they get?

As the systems used for acquiring data become larger and more complex, it is important that they do not become more cumbersome to operate. While our acquisition systems have grown from 10's to 100's to 1000's of channels, these has often not been without an initial backward step system reliability.

Finally there is always room for further innovation in seismic acquisition, and by short review of some of the methods that have been tried and have failed, as well as those that have been successful, we will explore the likely trends for the future, including autonomous deployment and recording, parametric sources and the continuing development of time lapse acquisition.