

# Chapter | 3

## Course Summary

The best one line summary I can give to modern seismic imaging is *to get the best image, use the most accurate technology you can afford.*

We can discuss the pros and cons of the various algorithms forever, but in my opinion, this comment is the only one that should be remembered.

On the other hand, attaining this goal usually requires starting at the lower end of the accuracy level and moving up the chain until the best possible image is obtained. Each step through this process increases the information content and also improves the quality of the estimated Earth model. Thus, the first step in any imaging project is a prestack time migration. This is generally followed by a Kirchhoff depth imaging exercise that leads quite naturally to a one-way wave equation method. Because of its inherent speed, common azimuth is usually the first one-way method to be applied. It is normally not until after the net improvements of the one-way techniques have been reached that expensive full waveform imaging is attempted.

However the process begins, depth imaging should be standard processing at the end of the process, and the final focus should be on estimating a full elastic Earth model. Hypothesis testing through modeling should be employed to answer questions that imaging alone cannot resolve. Modeling and migration are a necessary part of all exploration exercises.