

Optimizing Play Assessment Data and Work Processes Using GIS

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The granularity of play assessment can vary widely depending on data availability and the business questions being addressed. For example, to ascertain the natural endowment for a country, evaluating an entire play as a single entity may be sufficient. To better support an exploration effort, however, the assessment results should more fully represent the internal variations within the play. The inherently spatial nature of this process makes it well suited to GIS applications.

At its basic level, play assessment attempts to project the number, size, and hydrocarbon type of future discoveries. Geologic trends can identify those areas containing the least risky and (or) largest prospects. This knowledge is incorporated into the analysis by subdividing the play into progressively smaller and less heterogeneous entities. Finer partitioning of the stratigraphic play interval may also provide better linkages to lateral reservoir and seal controls. Increased stratigraphic partitioning can both increase the number of maps that must be managed and, more importantly, give the appearance of having a larger number of smaller hydrocarbon accumulations. Such a perception could have a significant impact on economic evaluations. GIS can be used to improve economic evaluations by resolving the overlap of areas representing the sweet spots in different stratigraphic intervals, and with proper database design, reassembling future accumulations across assessment intervals so as to best represent entities that can be tested by individual wells. Effective use of GIS can significantly increase the utility and business value of play assessment.