

# The Impending Obsolescence of Maps

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Maps have become a critical component of modern society, and specifically of oil and gas exploration and production. Maps only become indispensable when there is too much information to hold in a person's head, or when there is a need to confirm artificial (for example, ownership) boundaries. Models are replacing maps, much like people who have the innate ability to visualize in three dimensions have been more successful oil finders than those who do not. Because the oil and gas industry accepts that "in the final analysis, oil is first found in the mind," a logical step to solving the problem of understanding spatial complexity is to find ways to make all relevant information available to our minds.

Immersive environments provide a new way to evaluate data traditionally studied as surfaces, cross-sections, and other types of maps. Allowing a display to move from the 2-D plane to a true 3-D visualization, immersive environments drive computer-controlled, human-scale stereo display and audio systems. Immersive environments are becoming widely available both inside and outside the oil and gas industry.

Rapid comprehension of complex spatial information can be achieved when data are evaluated simultaneously and proportionally with the sources of the data. In the oil and gas industry, many models require N-dimensional data integration. Multi-dimensional models render major improvements, beyond what can be derived from 2-D maps. Seeing and hearing spatial relationships between data types highlights inconsistencies, and in the process of reconciliation these differences greatly enhance understanding. Since models have embedded knowledge and users can interact with them, visceral understanding of the data can be obtained simply by walking around the model in an immersive environment. The conventional "map reader" can more easily replicate the 3 or more dimensional model in their mind and explain it to others, allowing better communication and better collaboration, both in the same environment and across distances. As more data and information become available in every walk of life, understanding interrelationships requires the adoption of new methods to understand spatial complexities that the conventional planar 2-D map can not encompass.