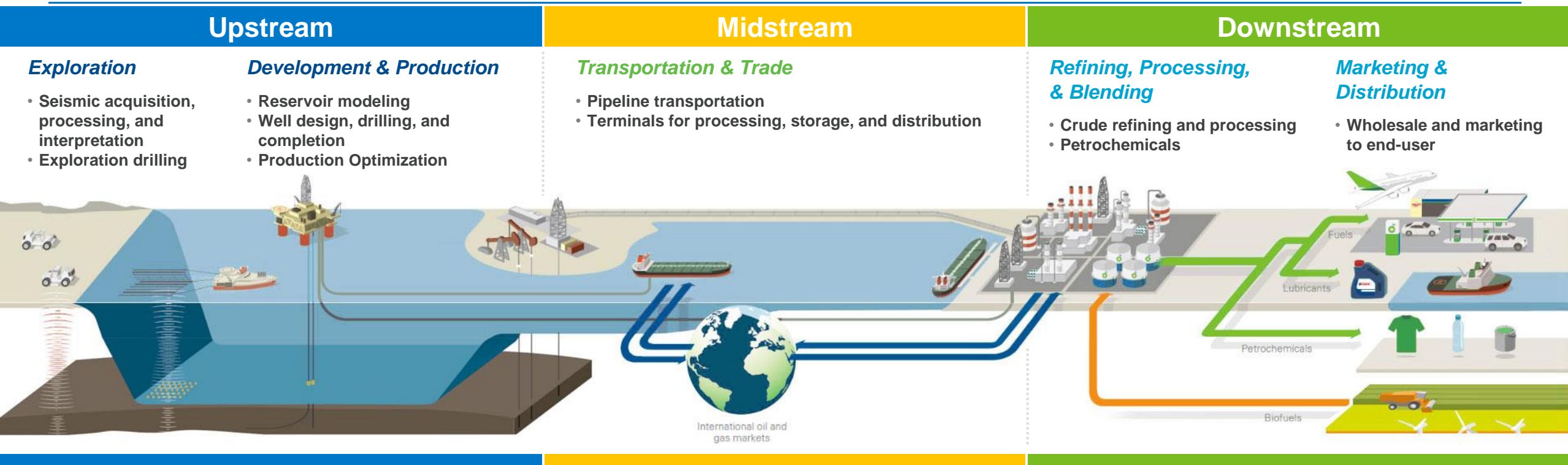


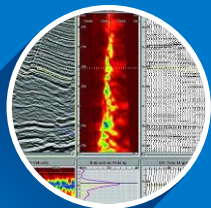
AspenTech Subsurface Science & Engineering (SSE) GeoDepth

AspenTech Oil & Gas Value Chain

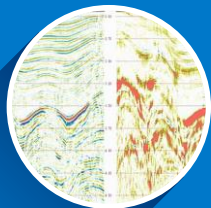
Subsurface Science & Engineering Software



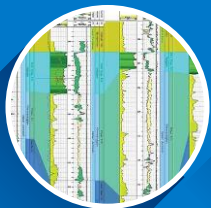
Subsurface Science & Engineering Software



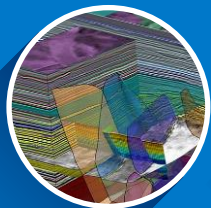
Processing & Imaging



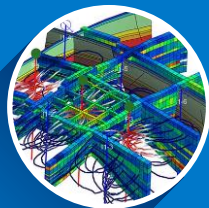
Interpretation



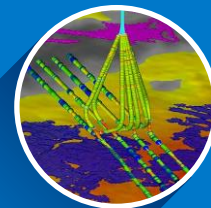
Formation Evaluation



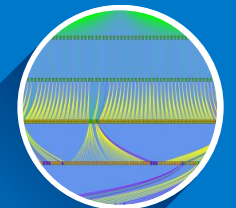
Geologic Modeling



Reservoir Engineering



Drilling

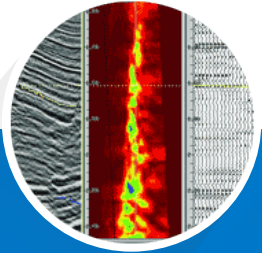


Production Optimization

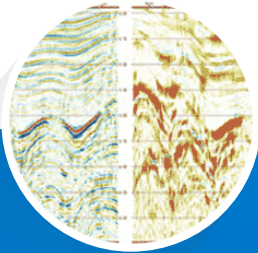
Subsurface Science & Engineering Software Portfolio

Seismic Processing and Imaging – Anchor Products

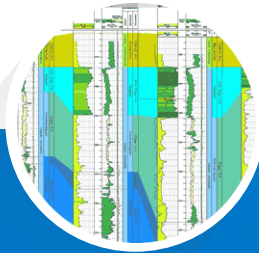
Processing & Imaging



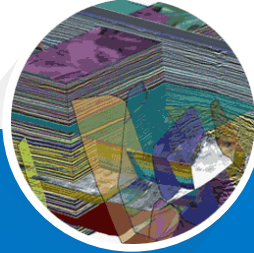
Interpretation



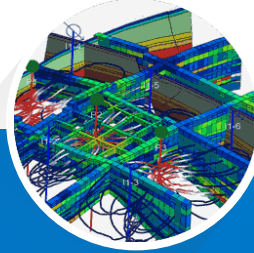
Formation Evaluation



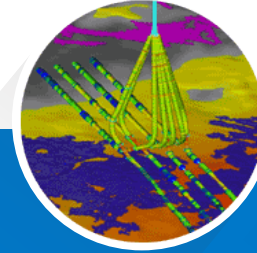
Geologic Modeling



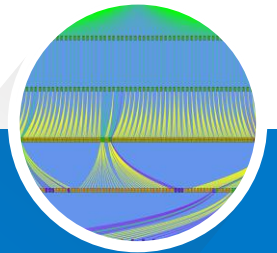
Reservoir Engineering



Drilling



Production Modeling



DATA MANAGEMENT & CONNECTIVITY

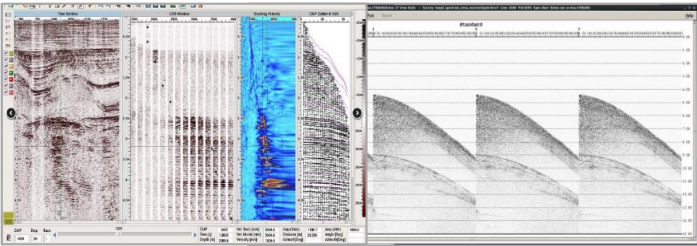


Echos
GeoDepth
EarthStudy 360

Subsurface Science & Engineering Software – Seismic Processing and Imaging Anchor Products - Shared Epos Infrastructure

Echos

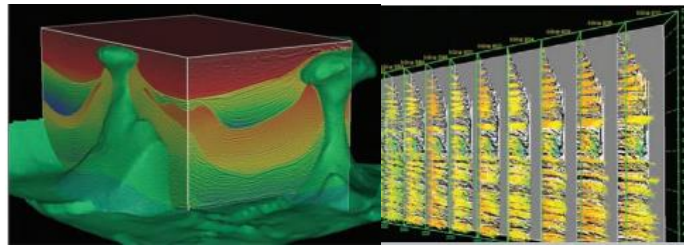
Seismic Processing



- Geophysical integrity obtained in 40 years of customer use
- State-of-the-art seismic processing and imaging solutions, including SWAMI, SRMA, 5D Data Reconstruction and RTM
- Open system with software development toolkits for client customization
- A highly efficient parallel framework and infrastructure for cluster optimization

GeoDepth

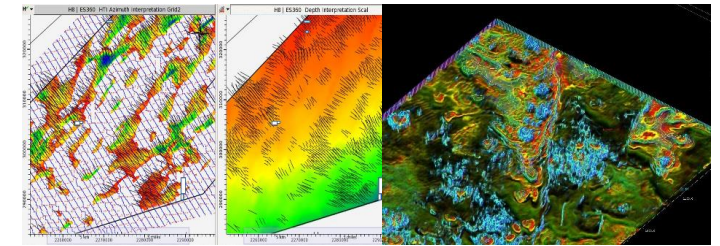
Velocity Model Building and Imaging



- A complete suite of interactive and batch velocity analysis and refinement tools to handle a full range of seismic imaging problems
- Easy construction of 2D and 3D velocity models, regardless of structural geology complexity
- Tightly integrated with interpretation and modeling tools to bring together the geophysical and geological model

EarthStudy 360

Full Azimuth Imaging and Analysis



- Maximizes knowledge about geological structure and reservoir properties from seismic data
- Delivers reliable high-resolution information about principal reservoir properties (fracture stress and orientation) for EOR
- Optimizes ROI for deep water, unconventional shale resource plays, fractured carbonate reservoirs and fault sealed traps

Subsurface Science & Engineering Software – Seismic Processing and Imaging GeoDepth

Robust and accurate velocity model building and imaging workflows

- Rich functionality toolset for initial velocity model building
- Supports all types of acquisition and survey geometry; land, marine, OBC, VSP, 2D, multi 2D and 3D, narrow/ wide and full azimuth.
- Industry leading ISO/anisotropic tomography workflow for 3D, 2D and multi-2D data, for models of varying complexity, honoring seismic and well data as well as geological constraints
- Sophisticated QC options at each step of the workflow for inputs, parameterization and outputs, for better tomography and imaging set-ups
- Kirchhoff migration (2D, multi 2D and 3D), as a fast, robust and reliable imaging solution
- Rich toolset of depth gather post-processing operations

Enhanced productivity and efficiency

- Optimized for running on very large datasets, highly parallelized
- Fault tolerant solutions in case of cluster downtime
- Automated multi-line 2D workflows for handling hundreds of 2D lines
- Supported on cloud – can take full advantage of cloud elasticity

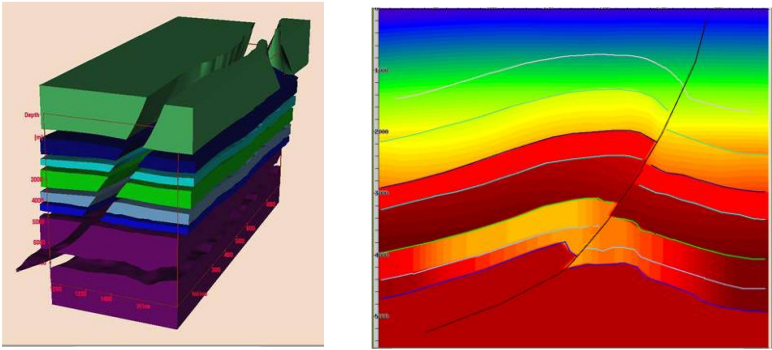
Workflow integration, processing interpretation, modeling and QSI

- Fully integrated with processing, interpretation and QSI environment, allowing easy data sharing between the domains and optimized visualization modes
- Links to the modeling platform for creating geologically constrained velocity models
- Easy to add third-party applications or internal IP and scripts

Extract maximum information from your seismic data

Subsurface Science & Engineering Software – Seismic Processing and Imaging GeoDepth – Customer Success Story

Velocity Modeling and Depth Imaging in Onshore Pakistan



Challenge

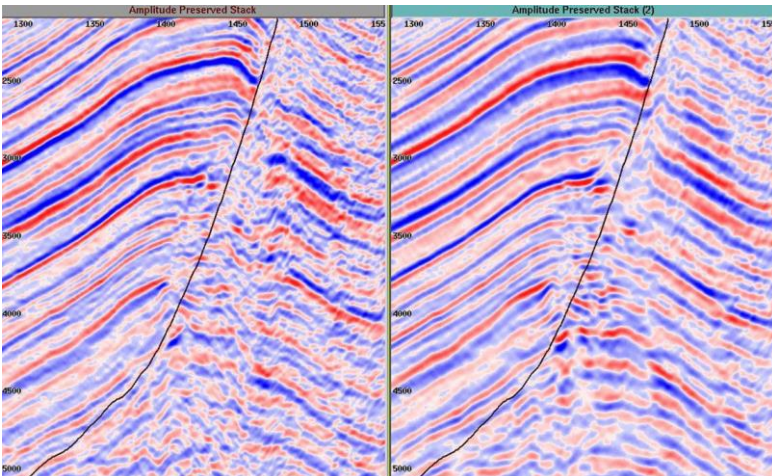
- Development drilling programs for a producing reservoirs in close proximity to major faults require accurate, high-resolution seismic images of the subsurface both for volumetric calculations and for precise positioning of the fault for optimal production impact of development wells.
- High-resolution seismic images require a subsurface velocity modeling and analysis system that accurately represents the complex subsurface geometry and the velocity variations associated with complex layered and faulted structures.

Solution

- A progressive workflow was used to move from an initial average velocity model based on vertical functions to a structural model of the subsurface by layers and faults, with the velocity variations being related to the structure
- Repeated iterations of seismic imaging and tomographic refinement of the subsurface velocity model were combined with scenario investigations to better understand the impact of the positioning of the major fault on the seismic imaging.

Result

- A more accurate, high-resolution image of the subsurface, with improved positioning of both the seismic reflectors and the major fault.
- A more accurate economic assessment of the structural closures in the subsurface, and improved positioning of subsequent development wells in the reservoir.



The background of the slide features a person from behind, arms raised, reaching towards a large, glowing digital globe. The globe is composed of a network of white lines and dots, with a bright light source behind it. Surrounding the globe are several hexagonal icons: a cloud with a building, a laboratory flask, a hand holding a globe, a plant, a beaker, a chemical structure, a CO2 molecule, and a circular flow diagram. The overall color palette is blue and orange, with a sunset or sunrise sky.

Subsurface Science & Engineering Software GeoDepth

Learn more: www.aspentech.com/sse

Contact us: EPSinfo@emerson.com

