

Welcome to ESRI Petroleum

Purpose

- Show the value-added:
 - Experiences
 - Ideas
 - Information
 - In Oil&Gas

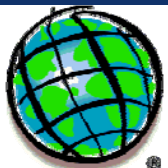


GIS Is Focused On Integration

Bringing Together Our
Complex Data and Knowledge



And Making It Accessible



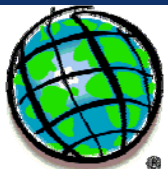
GIS Is Particularly Valuable



Providing Many Benefits

- Understanding
- Efficiency
- Cost Savings
- Improved Decision Making
- Better
 - Communication
 - Collaboration
 - Coordination

A Framework for Managing Human Activities

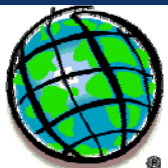


ESRI Software Strategies

- Enhance ArcGIS Desktop
- Strengthen / Simplify Geodata Management
- Extend ArcGIS Server
- More Mobile GIS



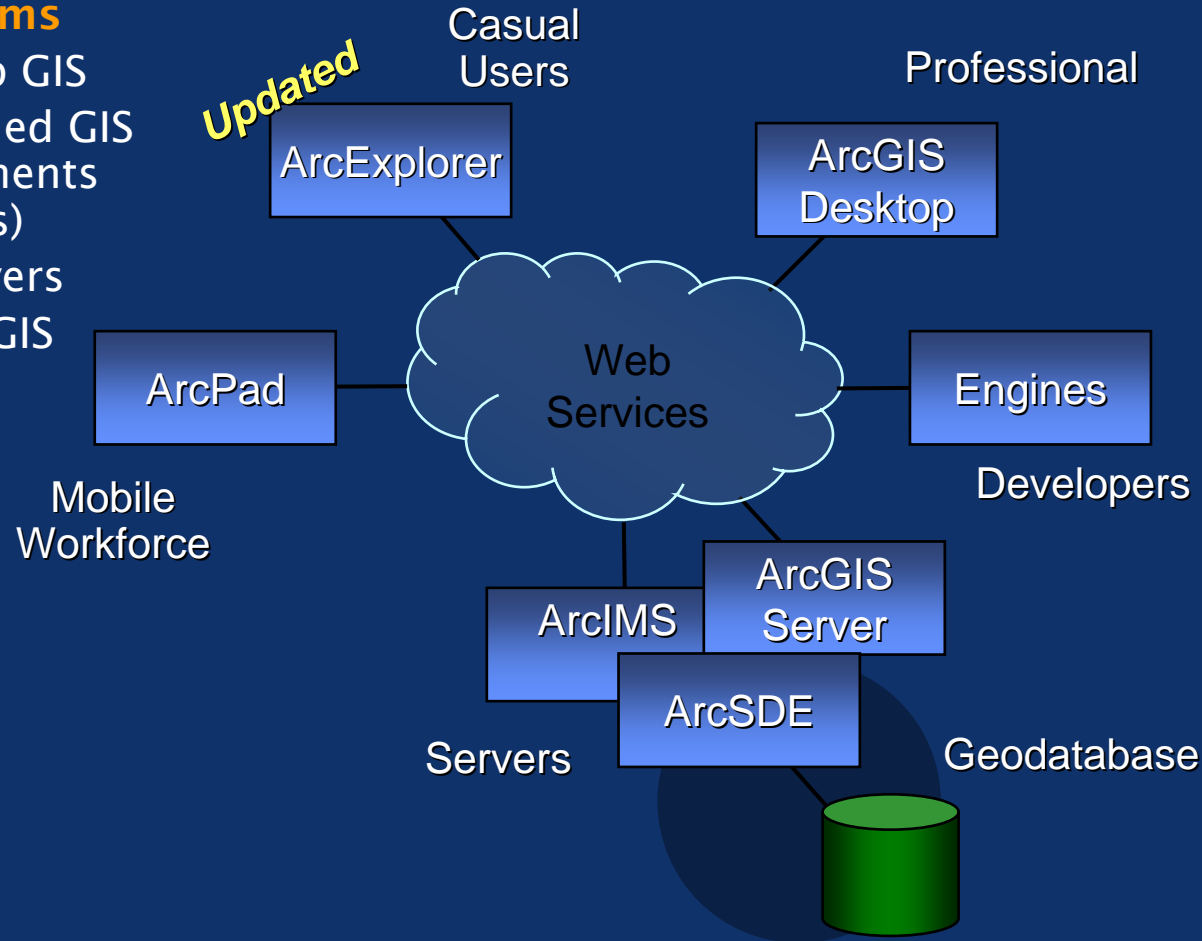
... With Increased Focus on Quality, Usability and Performance



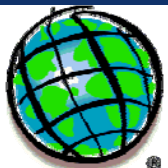
ESRI Software Products

GIS Platforms

- Desktop GIS
- Embedded GIS Components (Engines)
- GIS Servers
- Mobile GIS



- Compilation
- Mapping
- Geoprocessing
- Visualization
- Management
- Authoring
- Serving
- Viewing



GIS Is Evolving on the Internet

GeoWeb

Viewing / Using

Publishing

Application
Integration

Supporting

- Publishing
- Discovery
- Sharing
- Interoperability
- Distributed Data Mgmt.
- Collaborative Computing
- Application Integration

Creating a Distributed, Global GIS

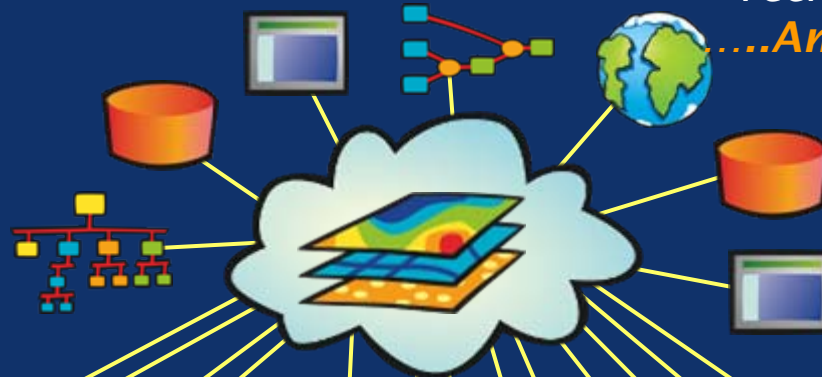
Individual Systems Will Be Connected into broader Systems

Facilitated by...

- Standardized Data Models
- GIS Portals
- Networks of Providers
- Collaboration Agreements
- Leadership and Organization
- Technology

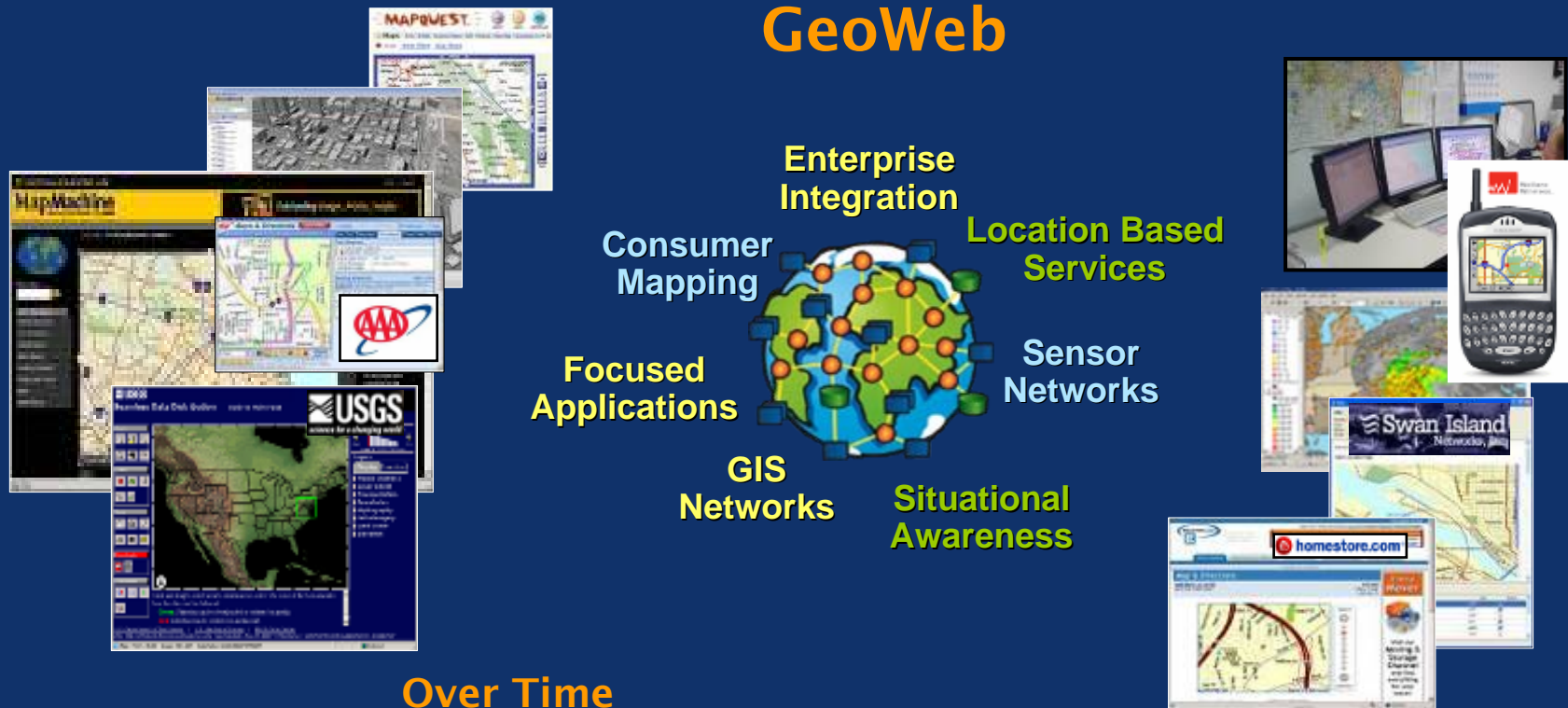
....*And You*

GeoWeb



...Helping Better Manage Our World

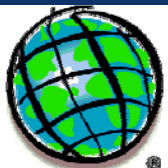
GIS Web Services Will Provide the Framework



Over Time

- Expanded GIS Services
- More Synergy
- Easier Exploration Tools
- Pervasive Use

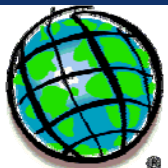
Supporting Many Geospatial Communities



ESRI

Petroleum Seminar

GIS in Petroleum

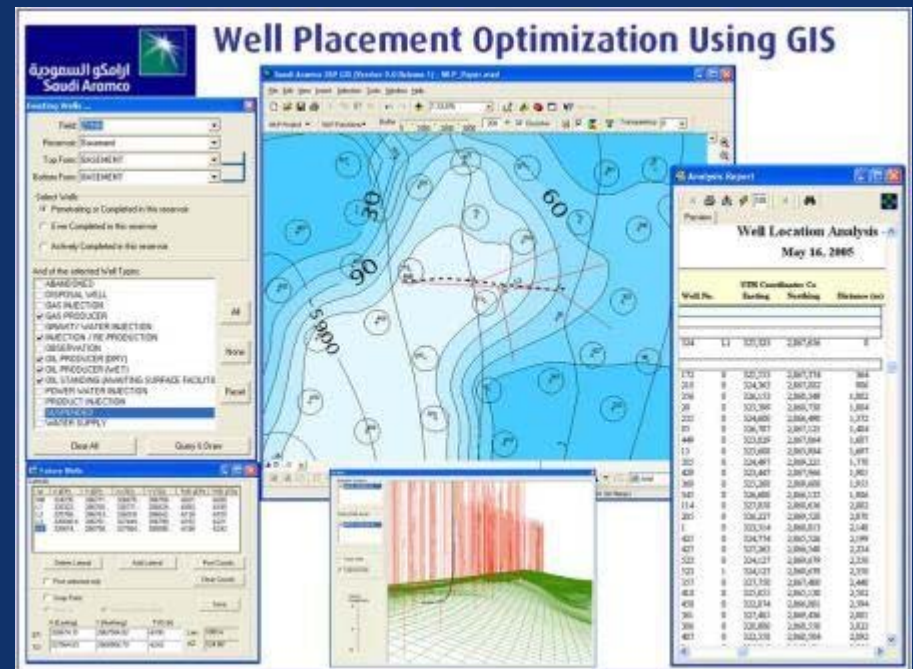


ESRI

Petroleum Seminar

Saudi Aramco

- Infrastructure management
- Portal Project
- Oil&Gas assets



Shell

- Global rollout
- Integration, 3D
- On-demand access
- SAP portal



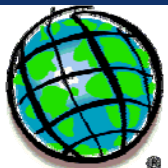
Those involved in the Shell International Exploration and Production/ESRI contract signing include from the left: Roger Able, Shell; Thierry Gregorius, global GIS/spatial coordinator of Shell International Exploration and Production; John Darley, director of Shell Technology Exploration and Production; Jack Dangermond, president of ESRI; Aart van Wingerden, regional manager of ESRI-Europe; Frits van der Schaaf, manager sales, ESRI Nederland; and Linda Dodge, Shell

ArcNews, Winter 2004/2005



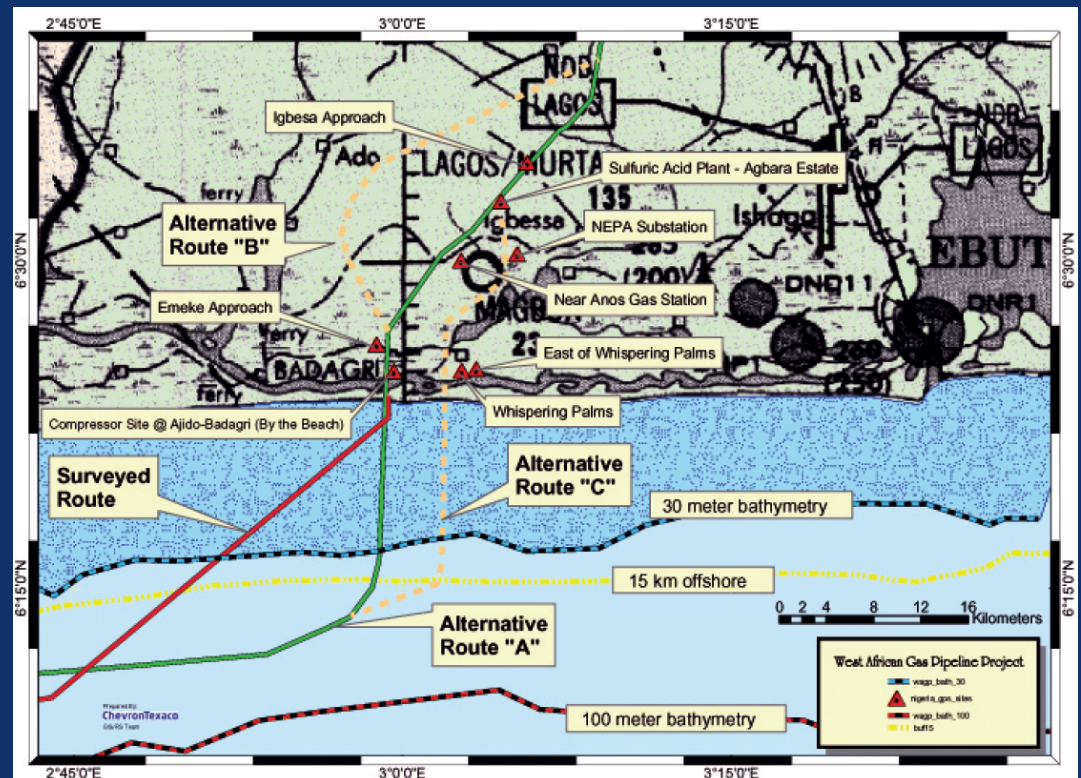
ExxonMobil

- Map Maker/Data Integration
- Portal Project
- Service station locator



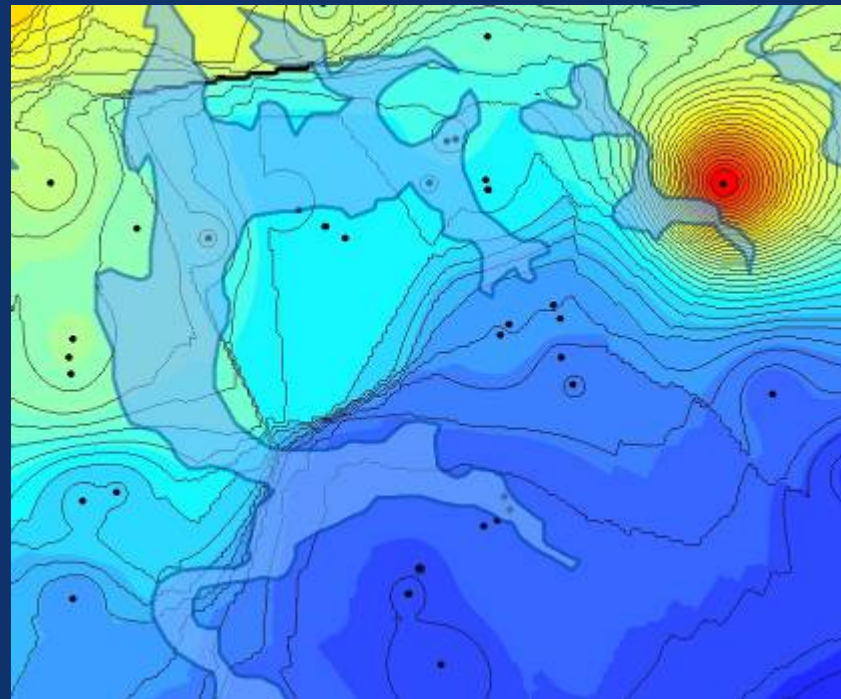
Chevron

- Pipeline Manager
- Portal Project



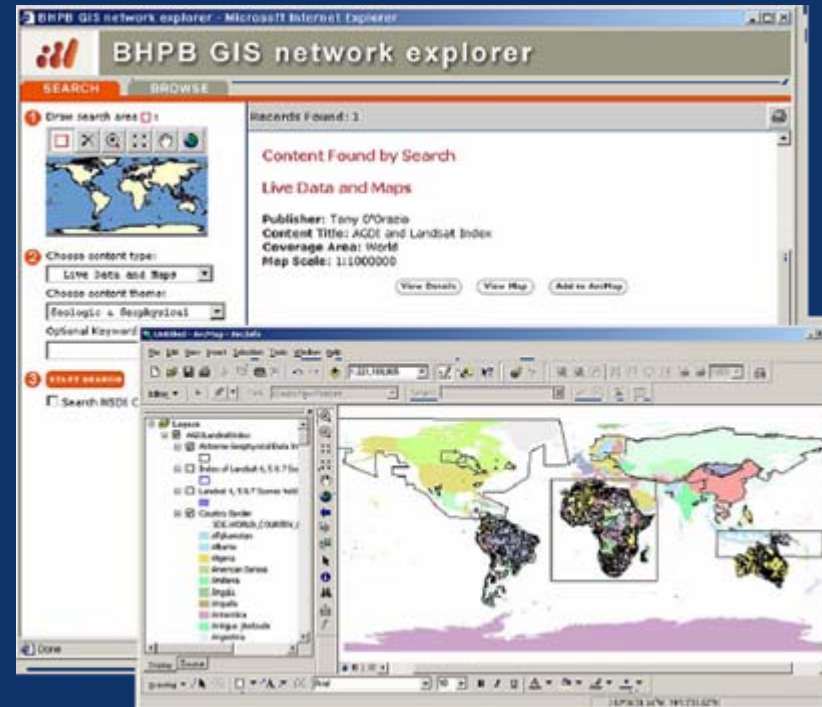
BP

- Workflow management
- Pipeline routing
- 3D



BHP Billiton

- Global infrastructure
- Multiple industries
- portals



Petrobras

- Transnational pipelines
- New construction
- APDM



ESRI

Petroleum Seminar

El Paso

- Continental infrastructure
- Pipeline surveillance
- Data modeling



USGS

- Geospatial One-Stop
- metadata portal
- spatial ranking

USGS Publications and Other Products - Microsoft Internet Explorer

USGS Home Ask USGS Site Map Search USGS Advanced Search

125 years of science for America 1879-2004

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USGS Energy Program

World Assessments

Products | About World Energy | In The News | World Energy Search | User Survey

Highlights

- Assessment of Undiscovered Oil and Gas Resources of the Bergas Basin Province, Northwestern Mexico (FS-2004-3807)
- Map Showing Geology, Oil and Gas Fields, and Geologic Provinces of the Caribbean Region (OF 9-97-473-E)
- Total Petroleum Systems in the Songliao Basin, China (D-2283-A)
- U.S. Geological Survey World Petroleum Assessment 2000 (DD5-04)

Find Publications by USGS Series

Find Publications by Author

Data and Map Services

- Downloadable GIS Data
- Tabular Data

Oil & Gas

COAL

Basin Studies

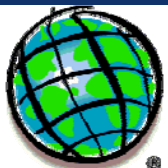
Geochemistry & Geophysics

Health, Environment, & Alternate Resources

Product Access & Data Management

Program Highlights

Education, Outreach, & Links

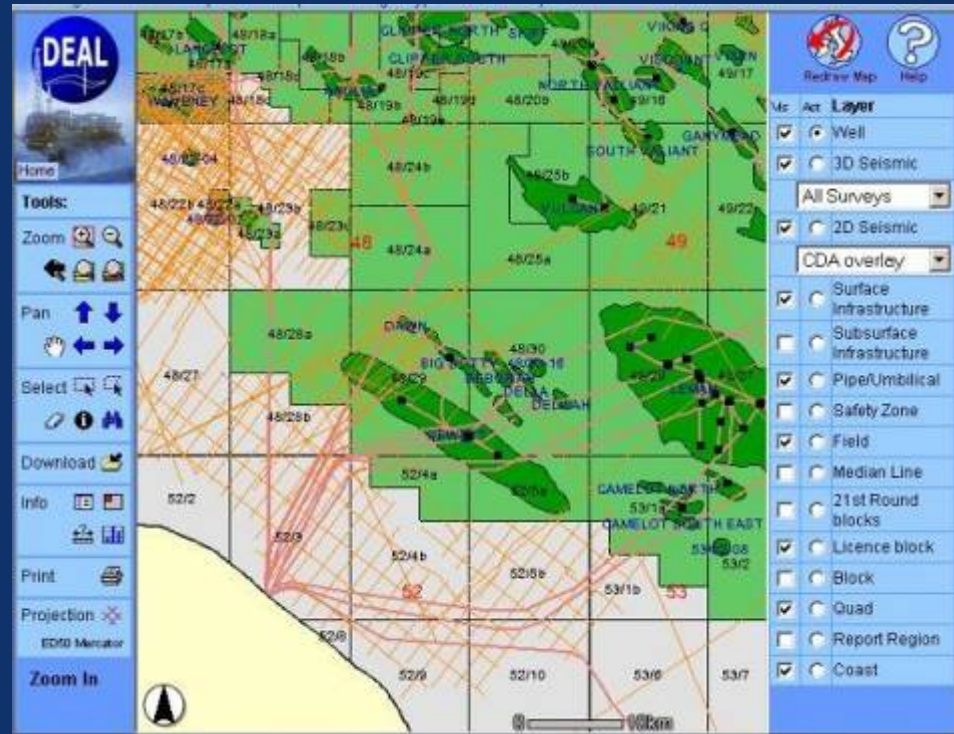


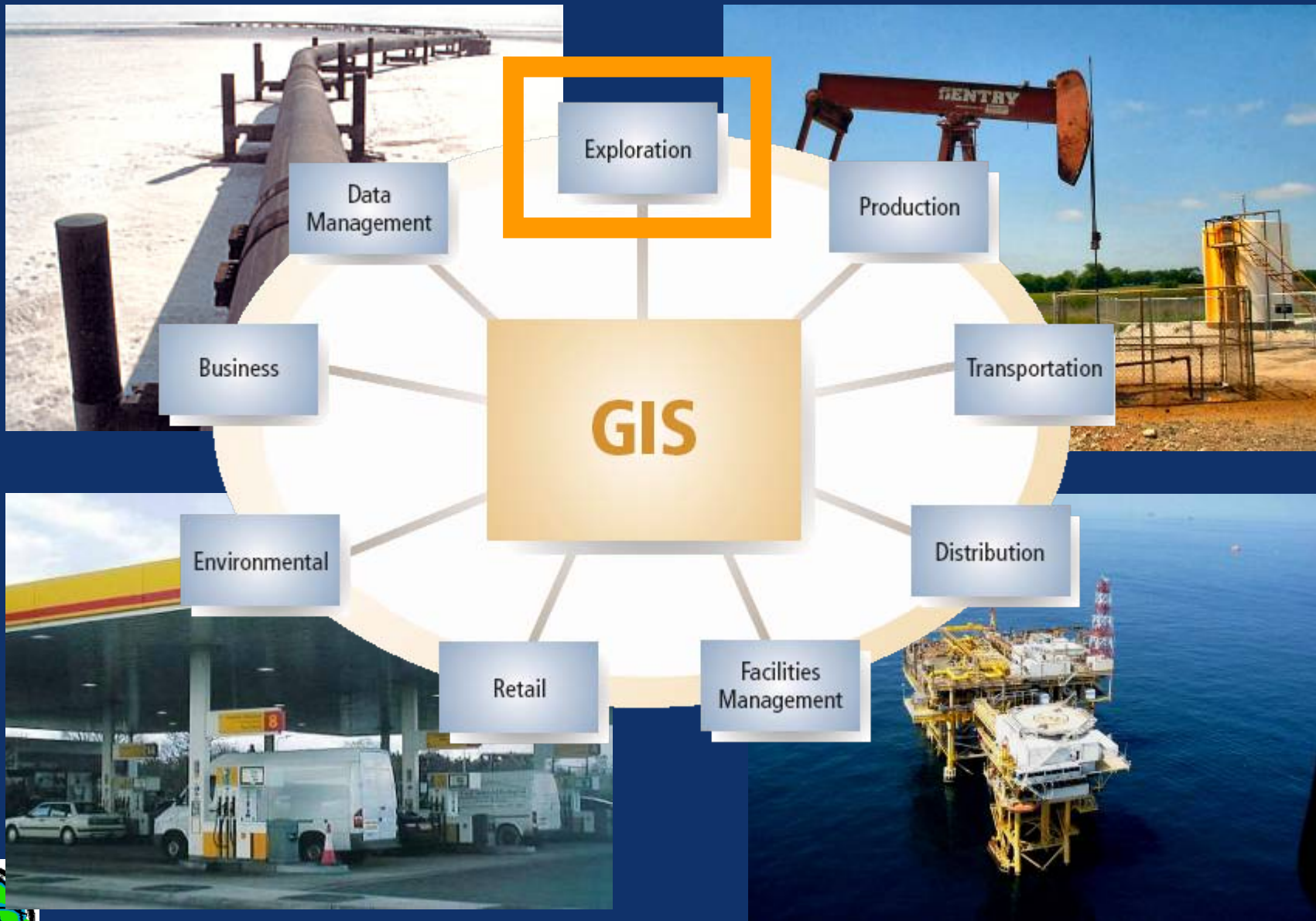
ESRI

Petroleum Seminar

UK DEAL

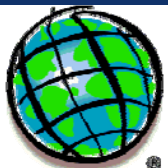
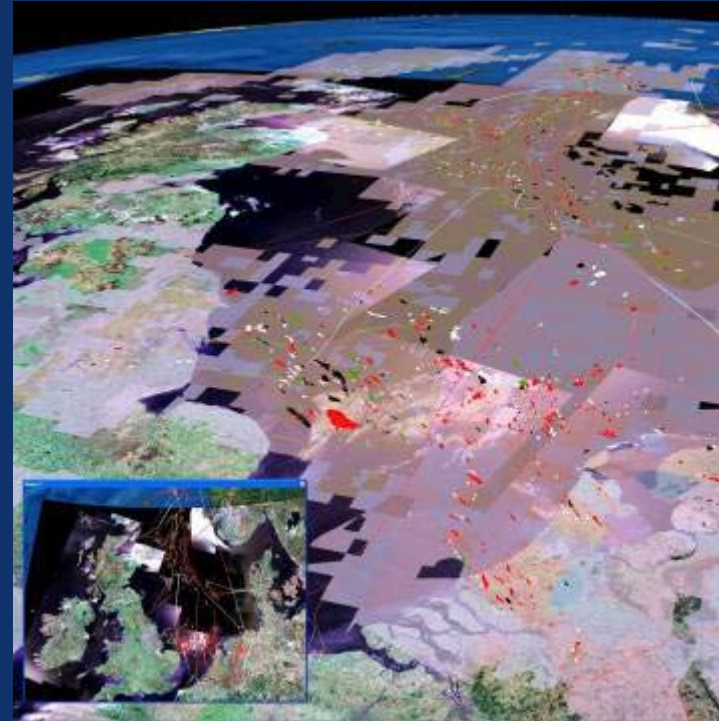
- Petroleum portal
- 5 years running
- XML links





Exploration

- Getting more revenue out of your assets
 - seismic, drilling, production, transmission, delivery
- Every asset
 - generates revenue (+)
 - incurs certain costs (-)
- Therefore asset management means:
 - increased revenue of assets
 - reduced cost of same assets

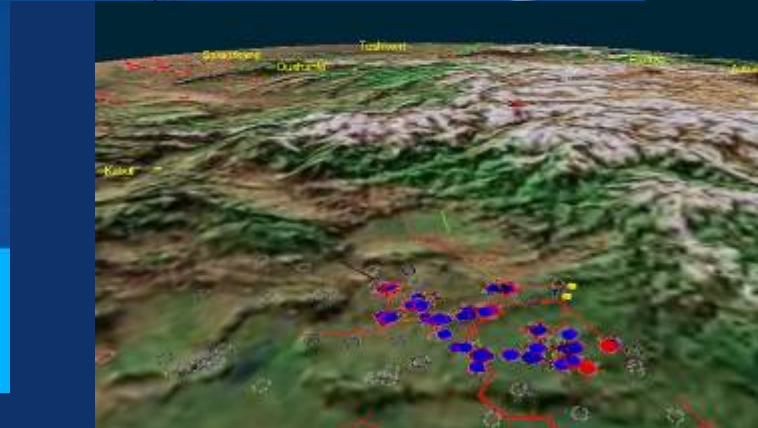
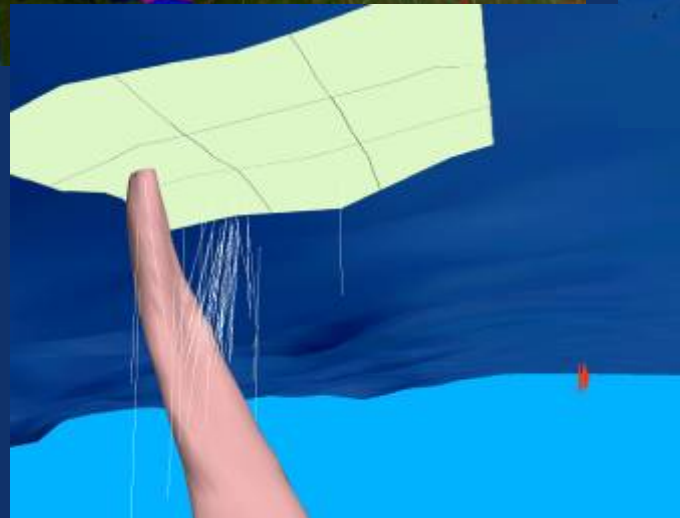
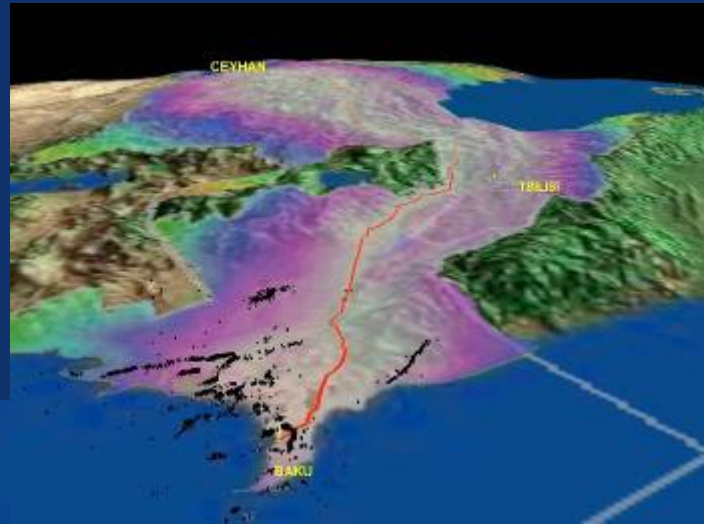
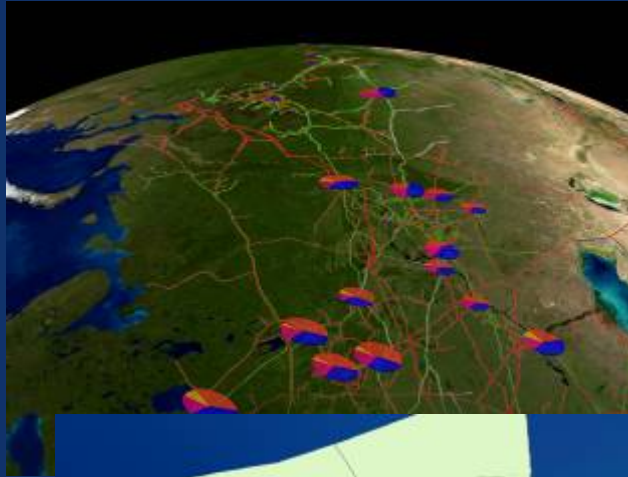


Exploration

- Basin Analysis
 - Display surface geology
 - Structures (Anticlines, domes, etc..)
 - Stratigraphy
 - Traps – What kinds?
 - Source Rock Analysis
 - Petroleum Migration
 - Geological Play Assessment



Visualization

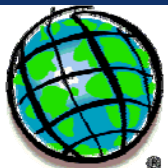


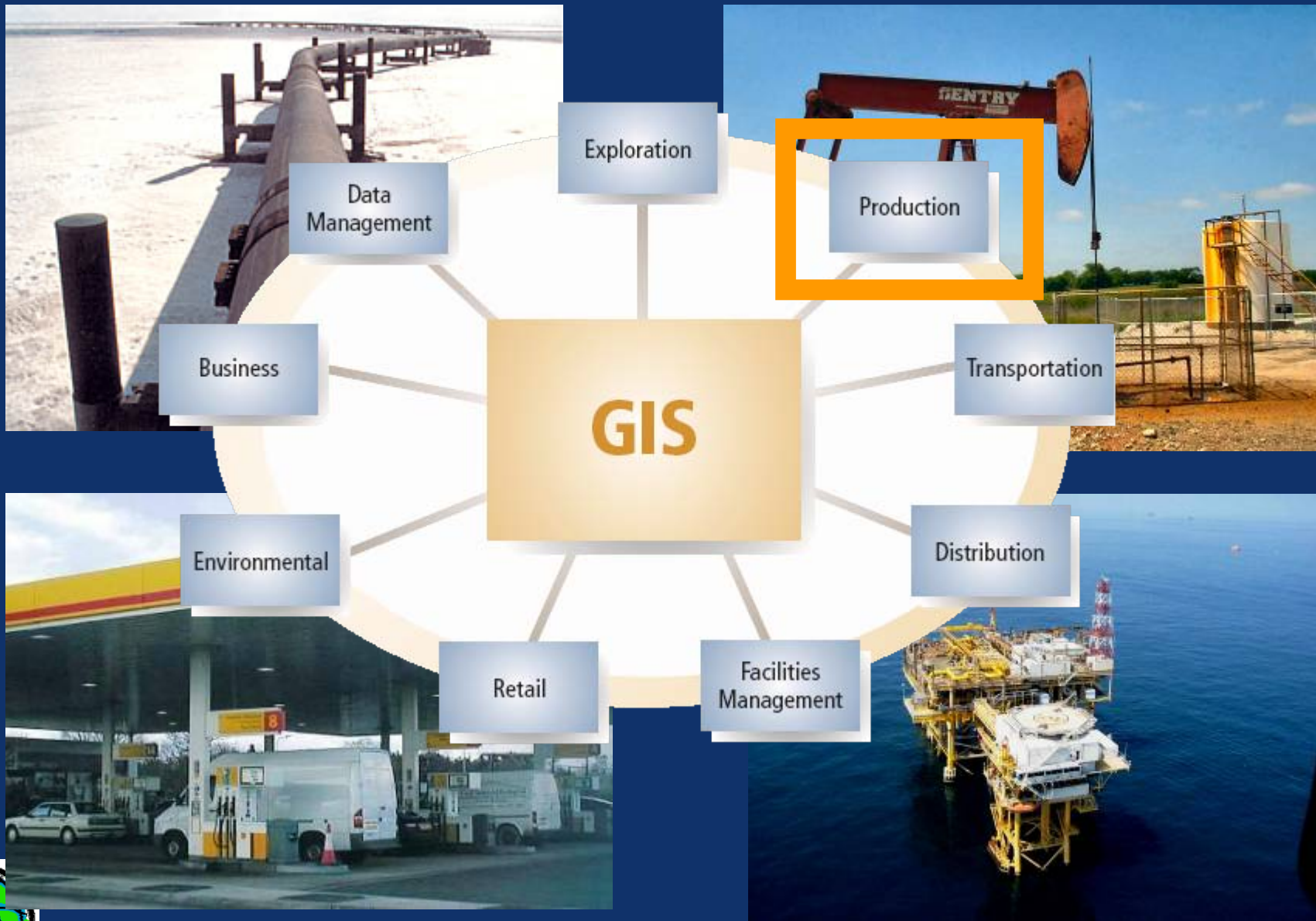
... with real-time information



Visualization

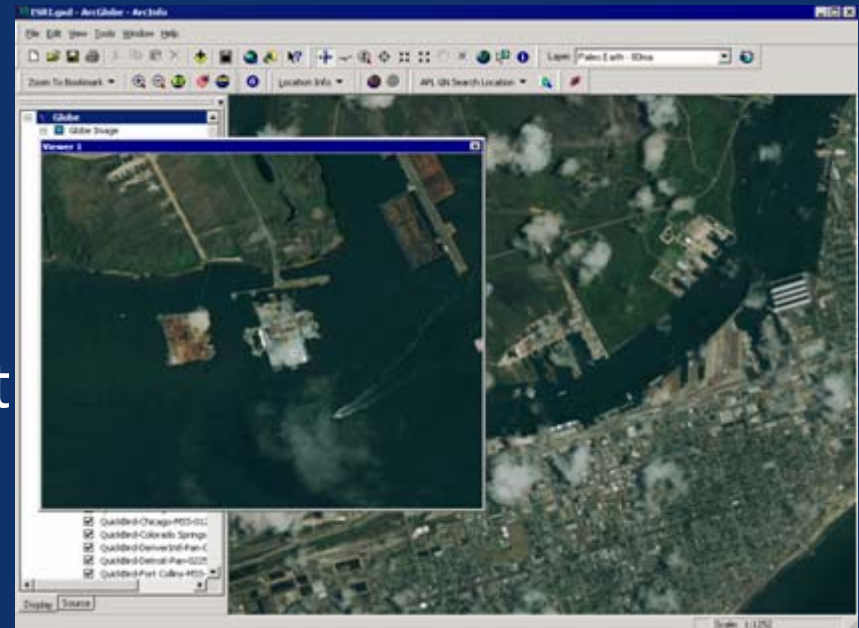
- Displaying Oil and Gas business Objects
 - Seismic Lines
 - Wellpath depth labels
 - Production bubble maps
- 3D Display
- Interoperability
 - Landmark / Schlumberger
 - OpenSpirit / Volant



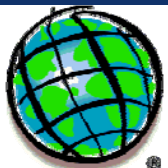


Production

- Ongoing Field Analyses
 - well, lease, etc. mgmt.
 - re-surveying via GPS
 - pipeline re-inspection
 - manage encroachment
- Locate Facilities
- Leak Detection
- Map book generation

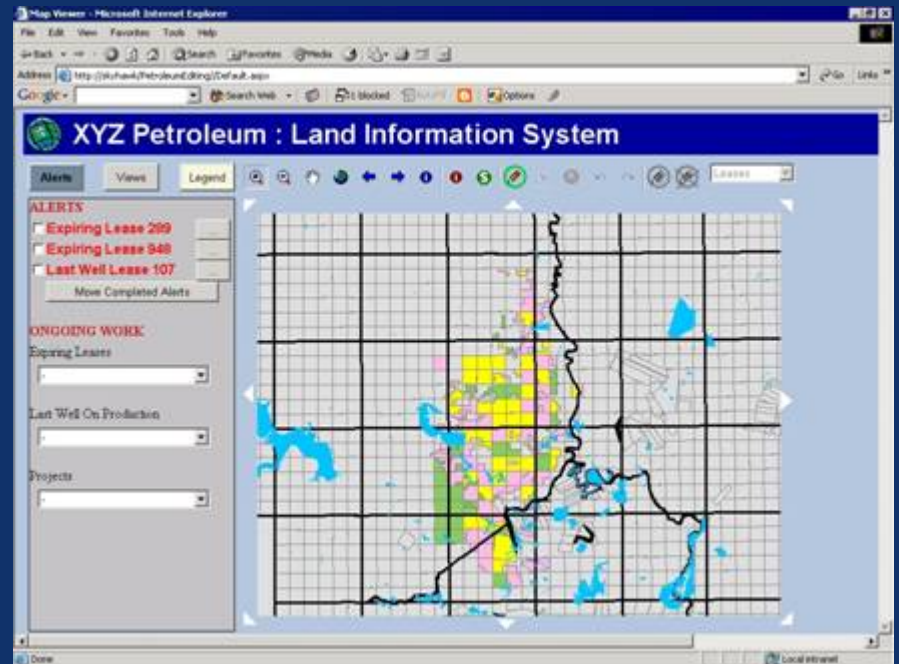


... understand the needs of Oil&Gas



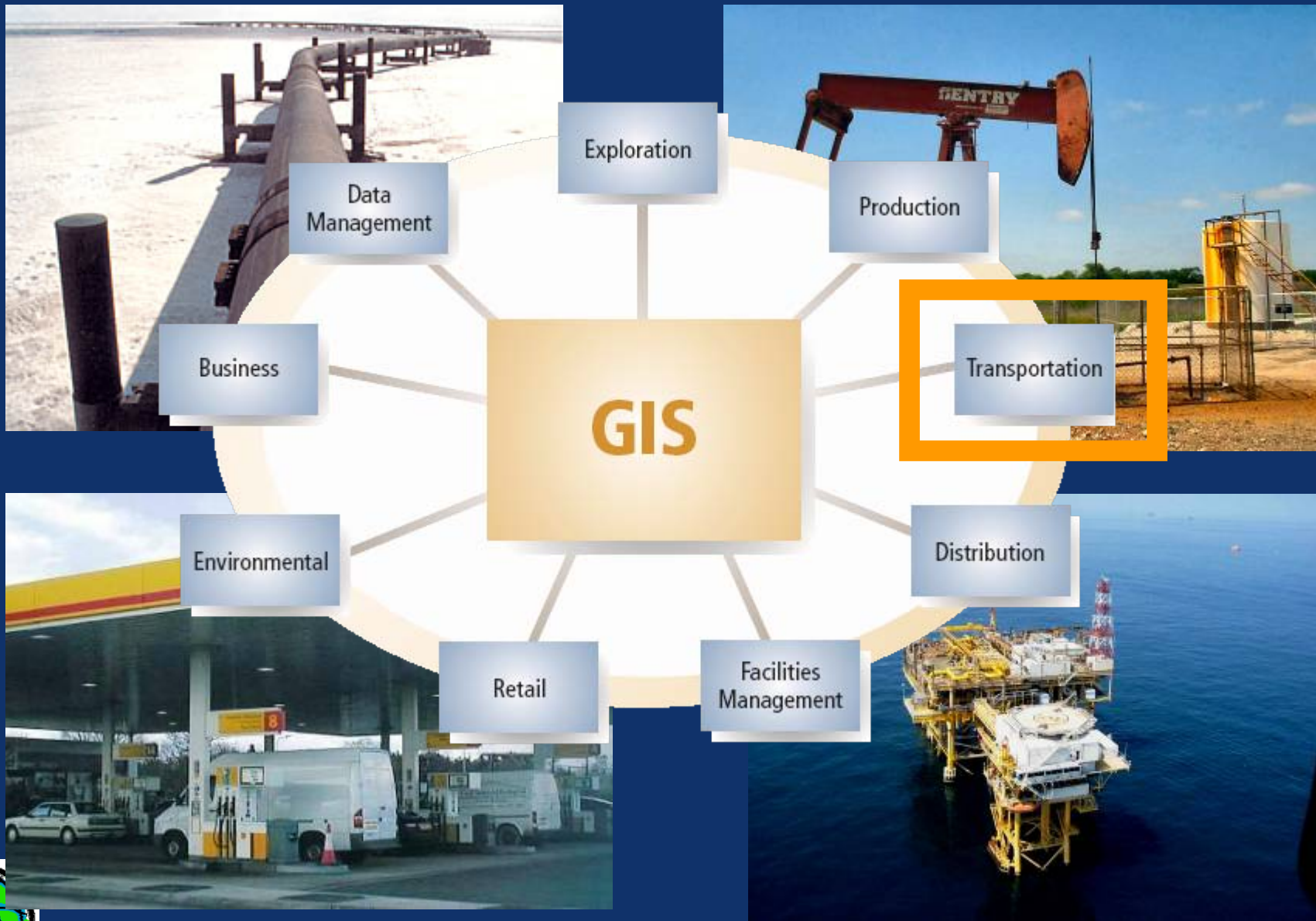
Production

- Lease Management
 - Royalties
 - Working Interest
 - Expiration dates
 - Lease Purchasing



... nearly every process is spatial





Transportation

- Vehicle Routing
 - Drive time directions
 - Scheduling
 - Load Analysis
- Tracking and response Planning
 - Location of Vehicles
 - Buffer Zones
 - Safety
 - Mitigation/Accident Information



Tracking and Resource Planning

The screenshot displays the FleetView v. 2.1 Release 1 software interface, which is used for tracking and resource planning. The main window shows a map of a coastal region with various service areas and routes. A detailed task window is open, showing information for a specific task (ALR) with the following details:

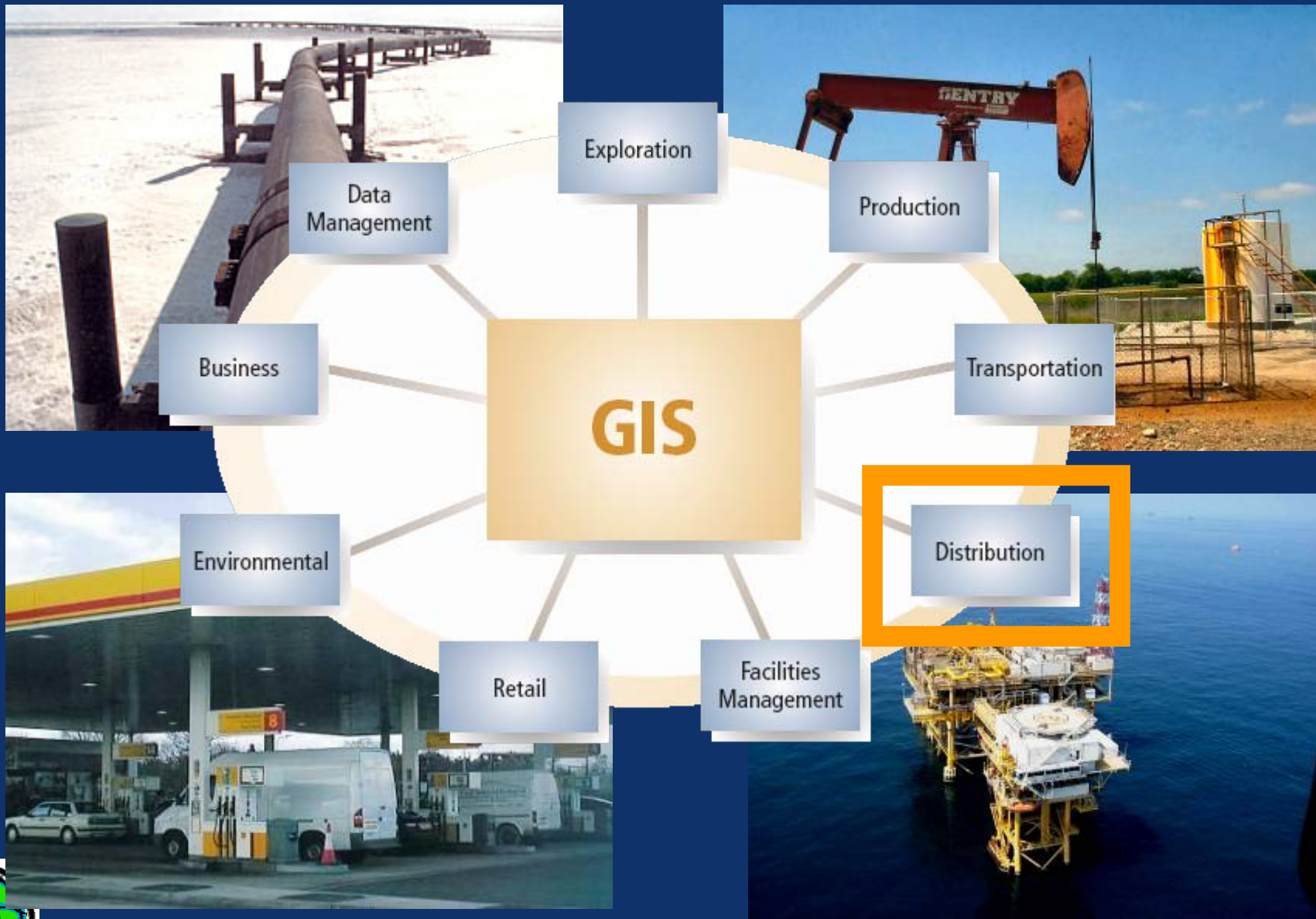
- Kundenavn: I.E. Transp.
- Adresse: Pjedstedvej
- By: Pjedsted
- Postnr: 7000
- Rute: 59370
- Dag: 29.02.00

The search window (Find) is also open, showing the following information for a specific customer:

Abonnentoplysninger:		Fremhævet abonnent:	
Fornavn	Efternavn/Firmanavn	Informi Gis A/S	
Vejnavn:	Husnr:	Maglebjergvej 6	
Postnr:	Postdistrikt:	2800 Kgs. Lyngby	
Kommune:	Telefon:	Lyngby-Taarbæk	
	45280000	Tlf: 45280000	
Tøm tekstfelter		Sæt flag	
Find		Zoom til	
Eksakt		Pan til	
Match start af ord		Fjern udvalgt	
Fritekstsøgning			

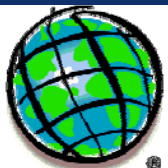
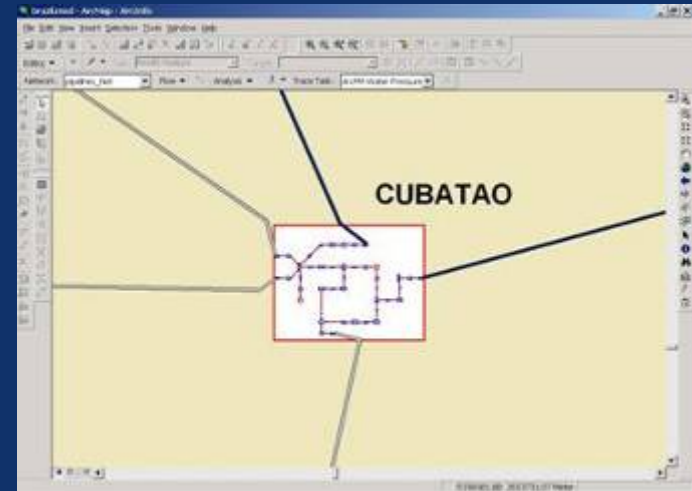
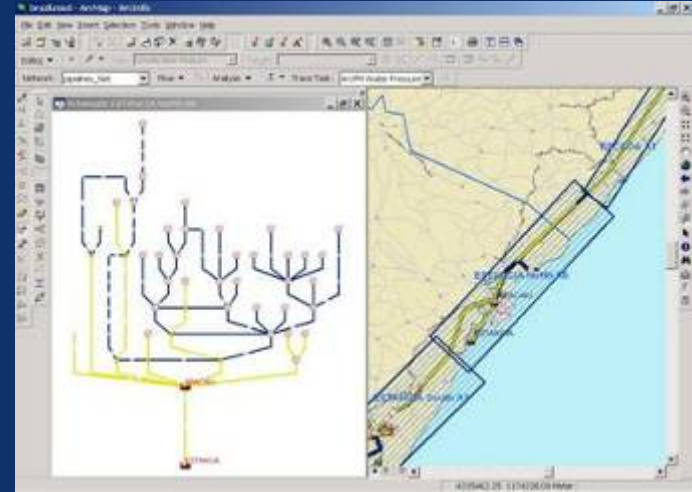
The interface also includes a list of resources (Vogn 120, 124, 176, 210, 267, 312, 434, 645, 657, 776, 777, 878, 890, 930) and a scale bar indicating 5 km.





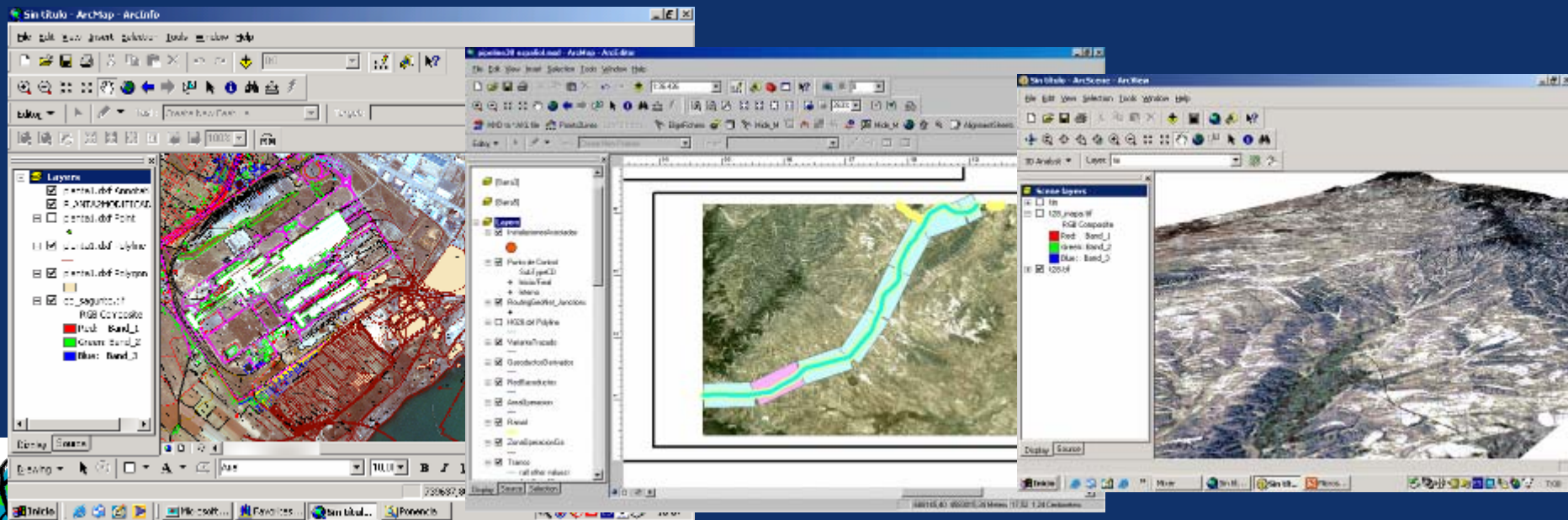
Transmission

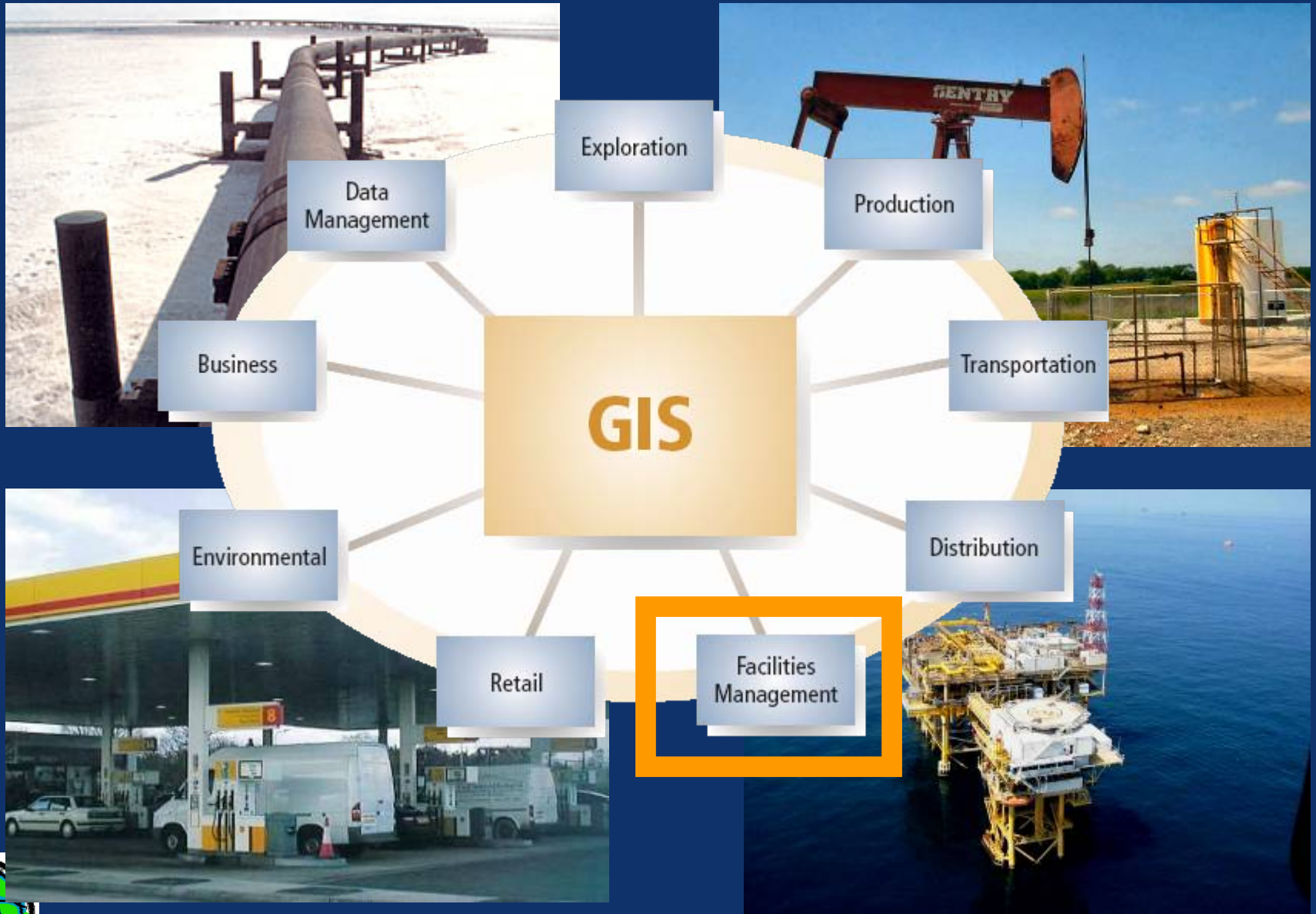
- Facility modeling
- Pipeline routing
- Integrity management
- Economic development
- Load forecasting for system planning
- Pipeline Monitoring
- Right of Way management



SOCOIN (Spain) ...

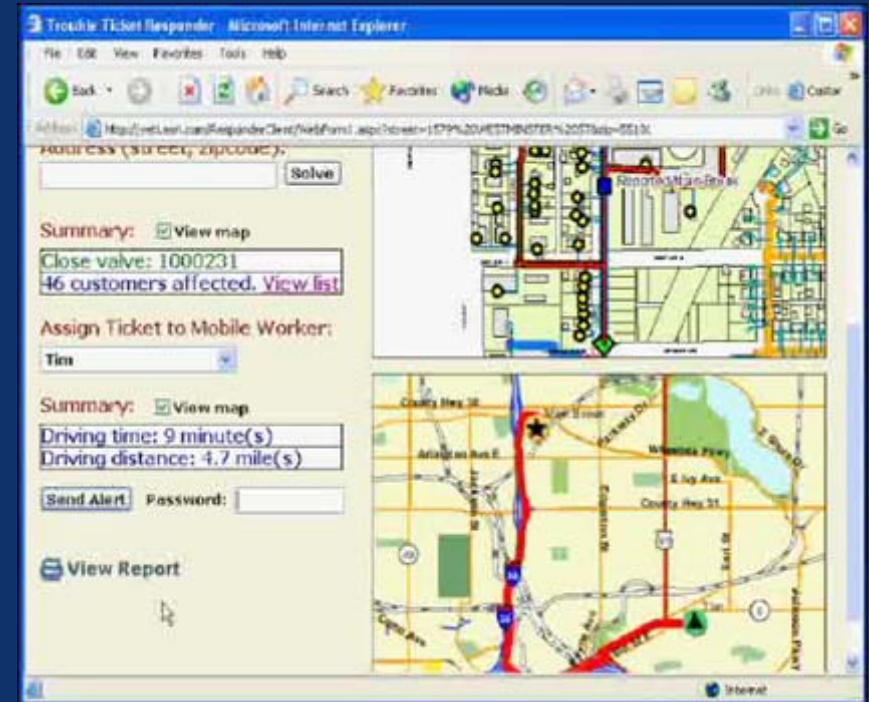
- New pipeline construction
 - Least Cost Analysis
- APDM for infrastructure
- Link to distribution network





Procurement

- Visualization of leaks, etc.
- Locating facilities
- Visualization of SCADA, etc.
- Reverse GIS
 - text driven
 - map report

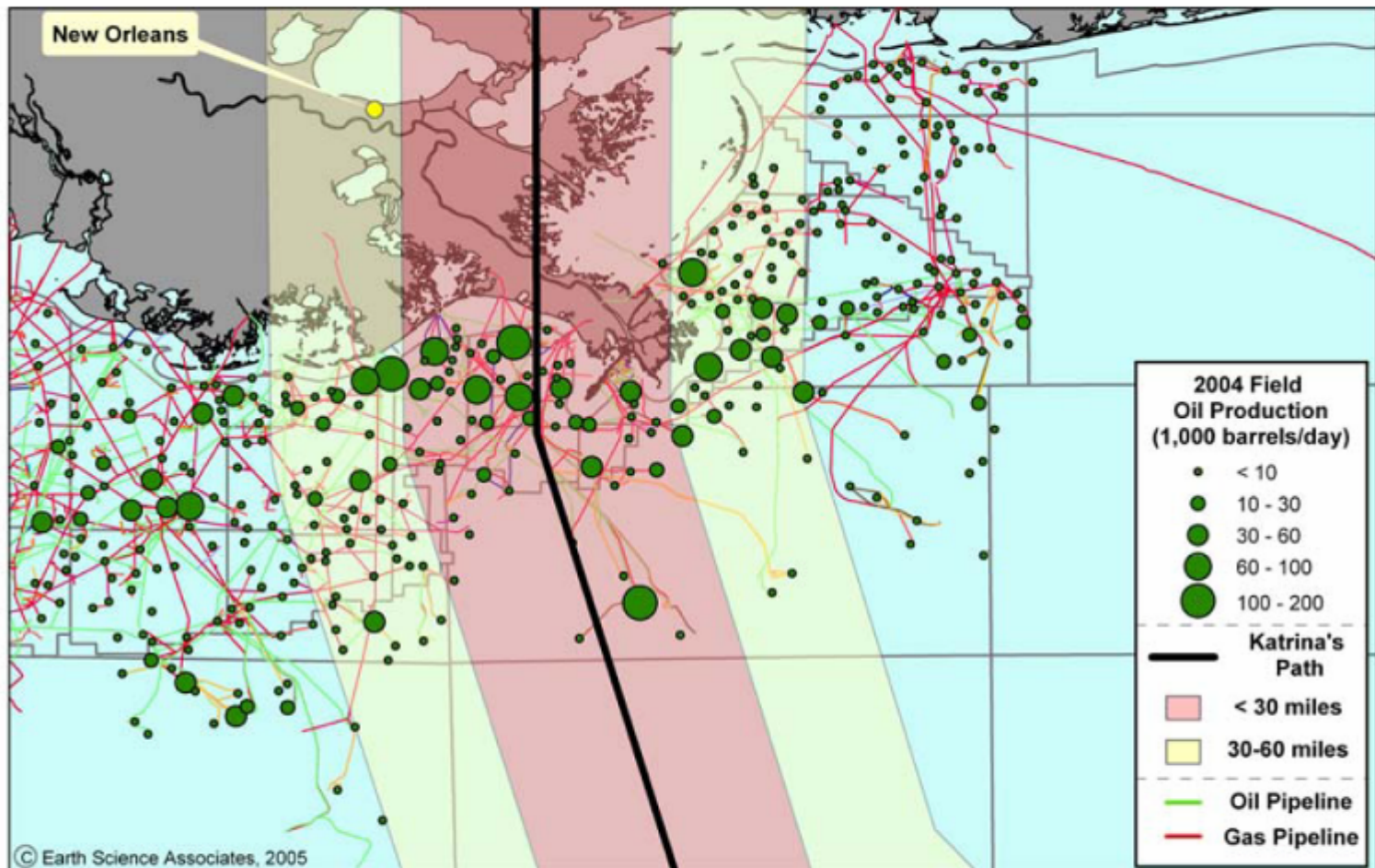


... GIS means business!



Map of Offshore Facilities

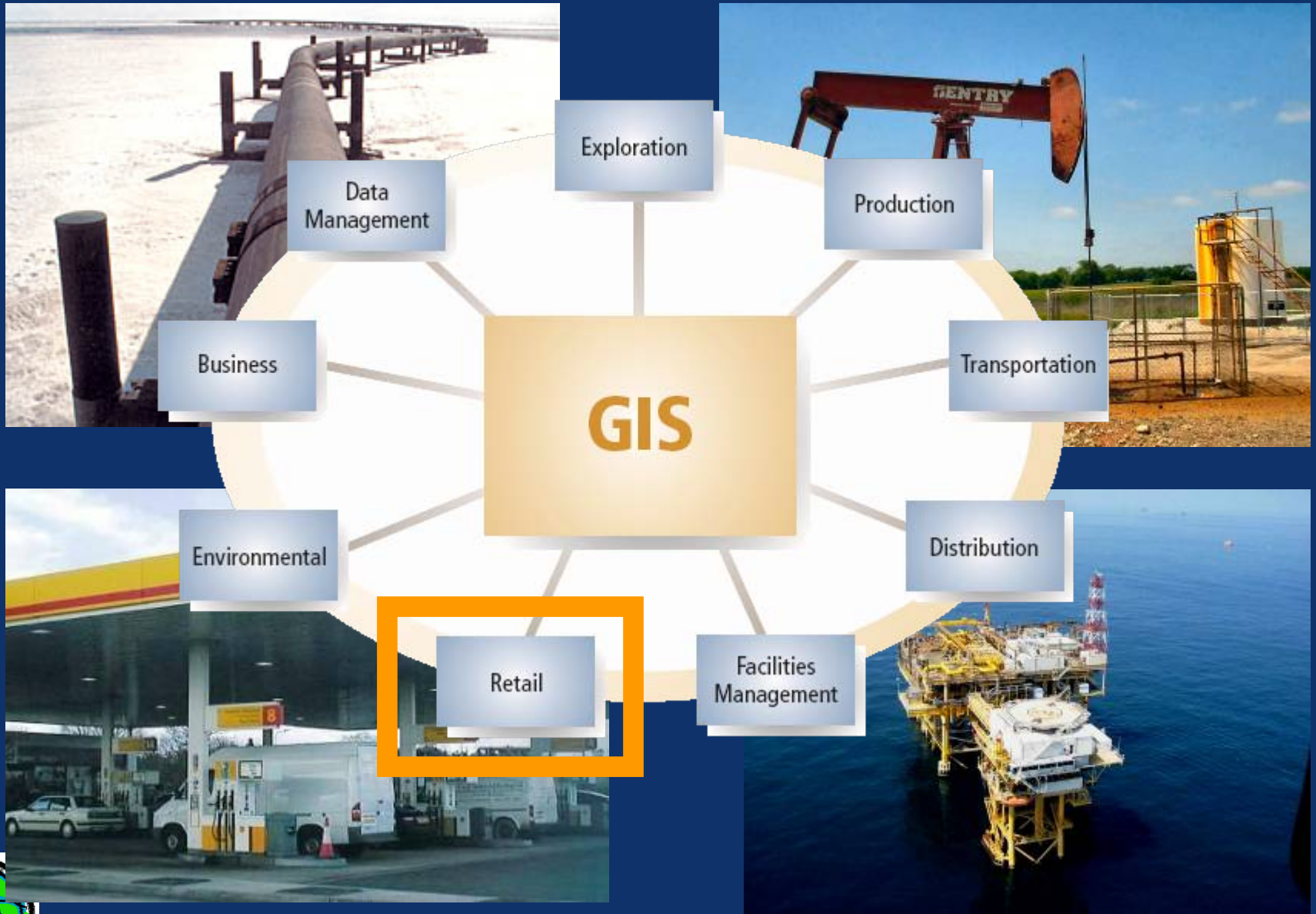
Map 2
2004 Oil Production in Relationship to Hurricane Katrina Path



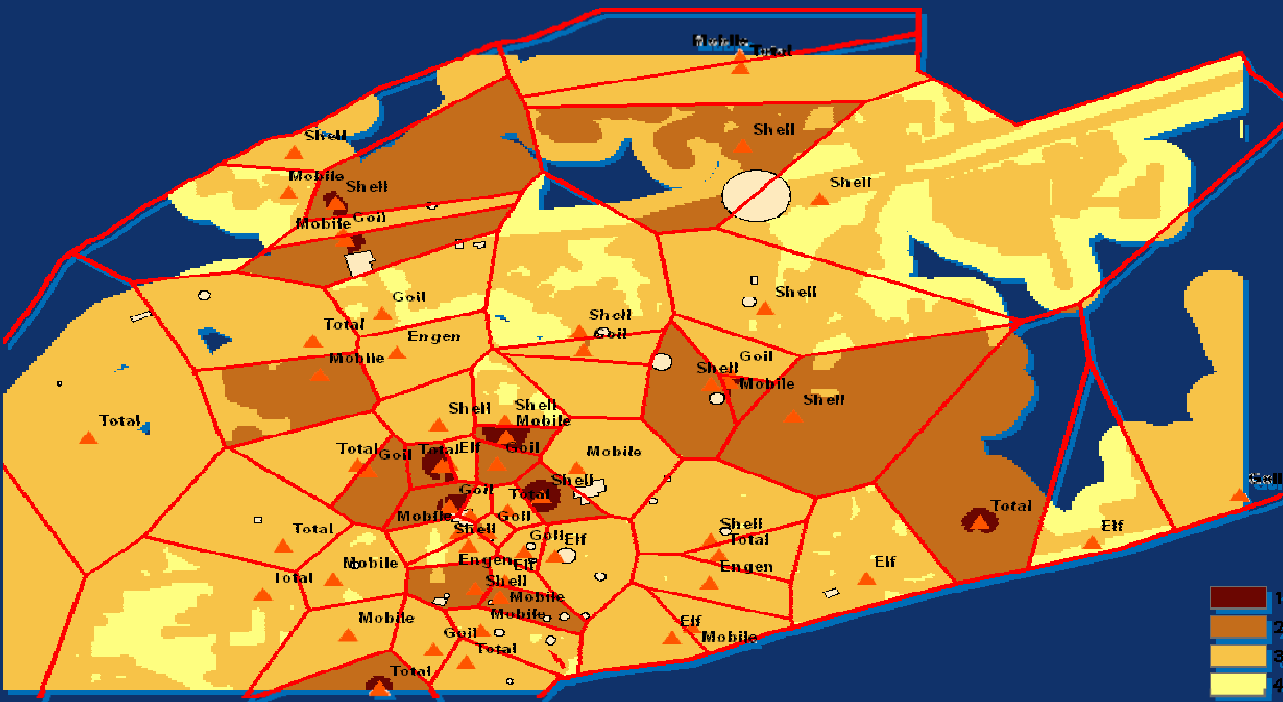
0 12.5 25 50 75 100 Miles

September 1, 2005





Business Uses Of GIS

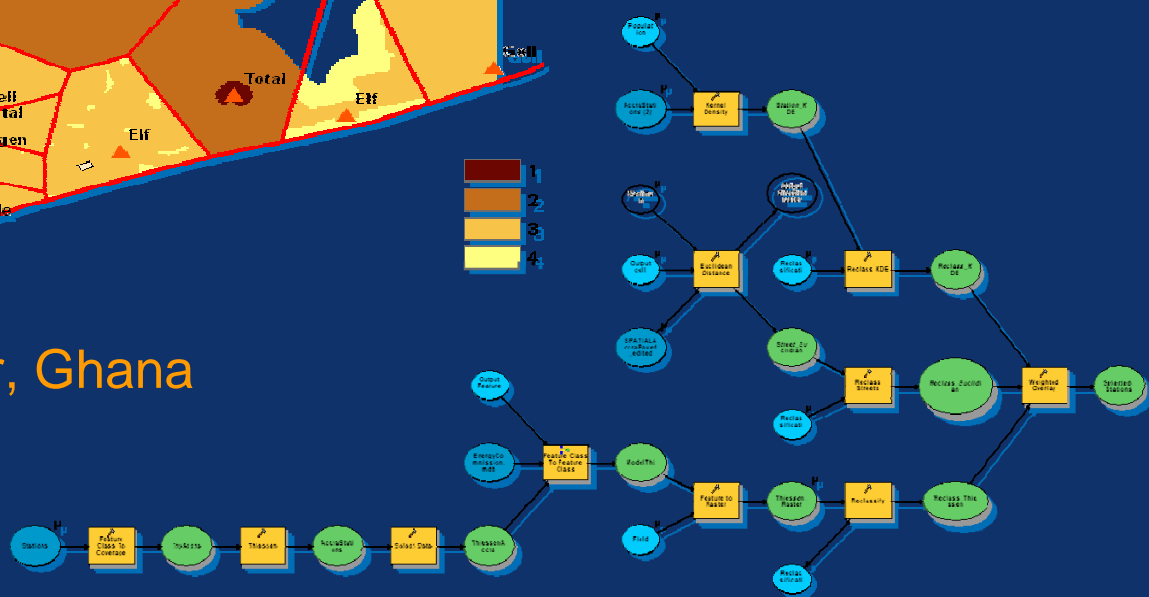


Petrol Station Locator, Ghana



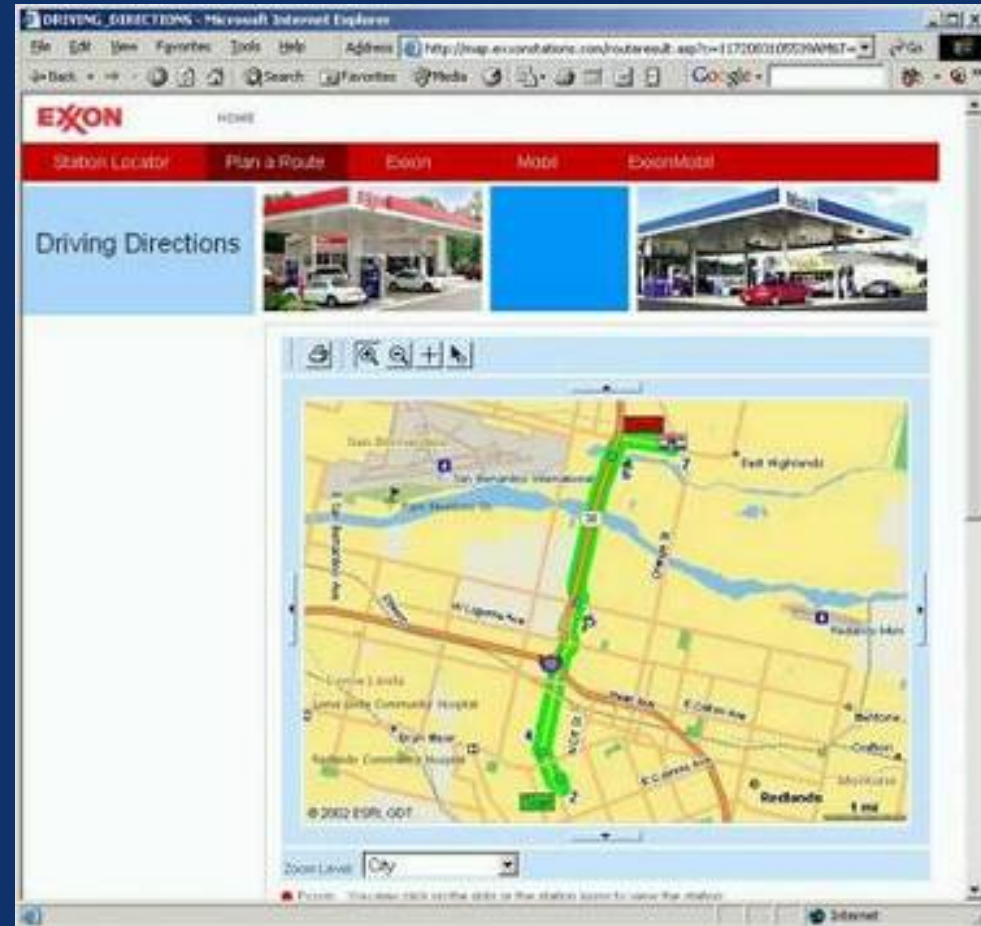
ESRI

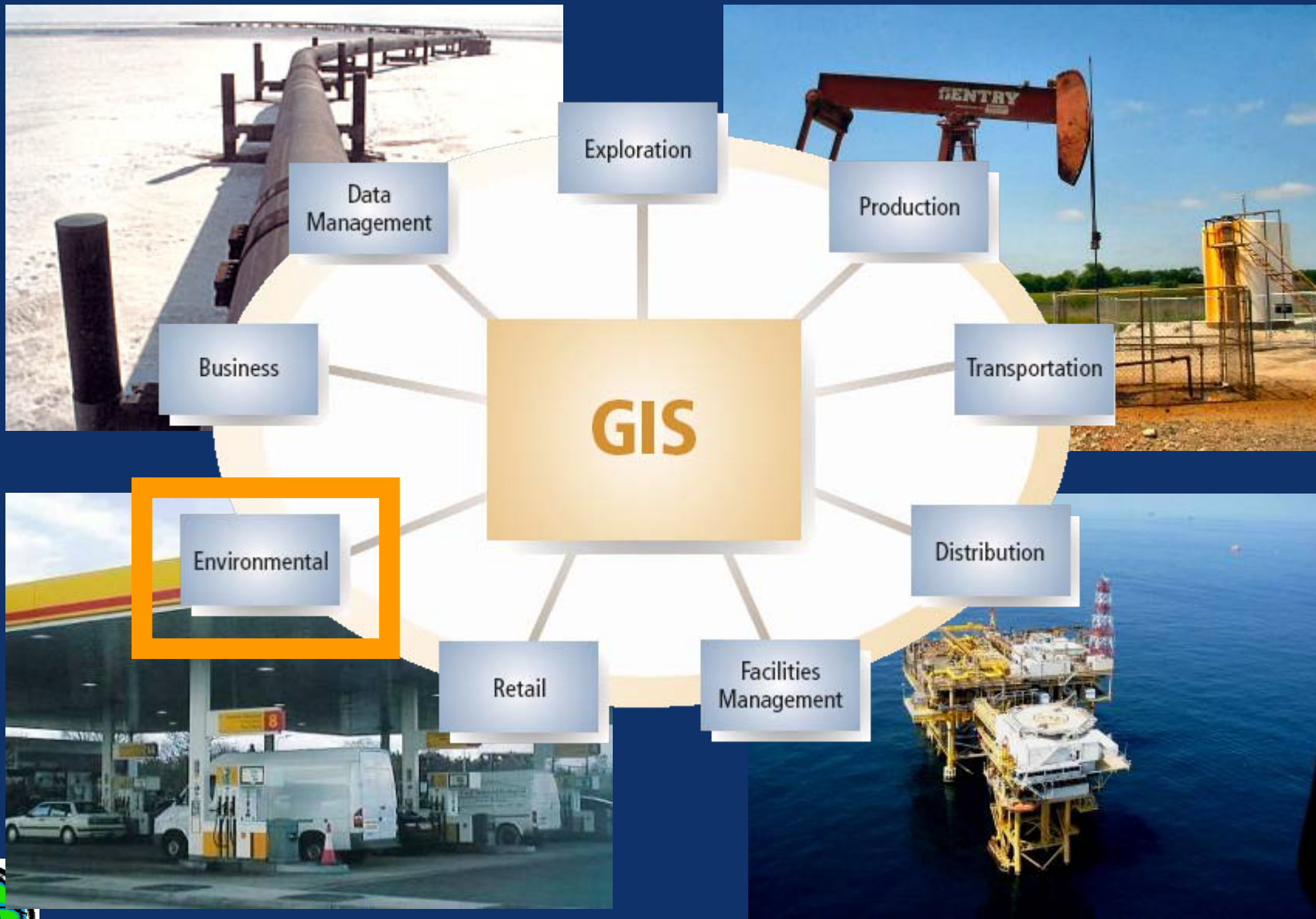
Petroleum Seminar



Service Station locator

- Driving Directions
- Store Locations
- Store Hours





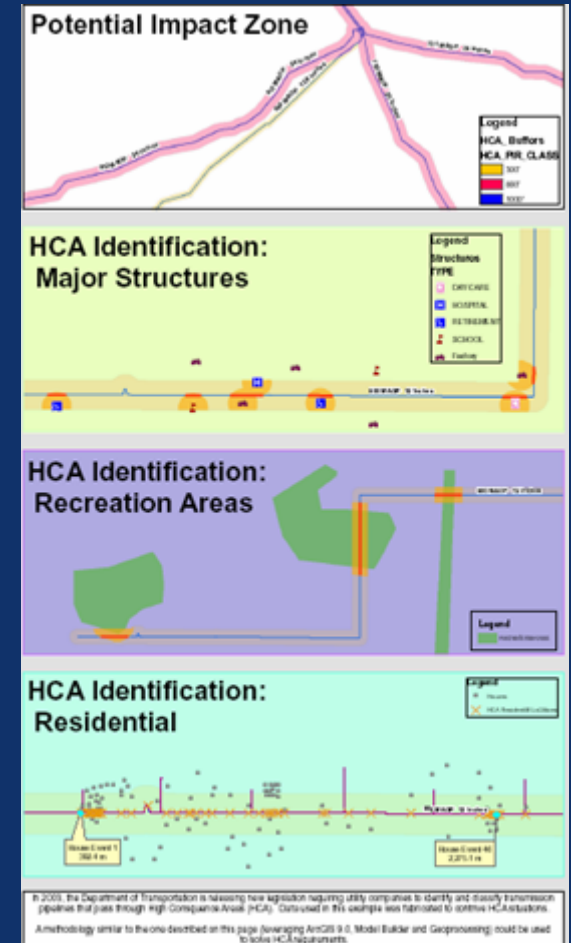
Oil Spill Response and Planning

- Spill Mapping
 - Environmental Impacts (sensitive areas)
 - Containment
 - Weather conditions
 - Equipment locations
 - Boom Placement - Protection
 - Impact to Society
 - Road Closings
 - Evacuations
 - Mitigation Analysis

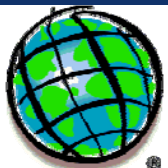


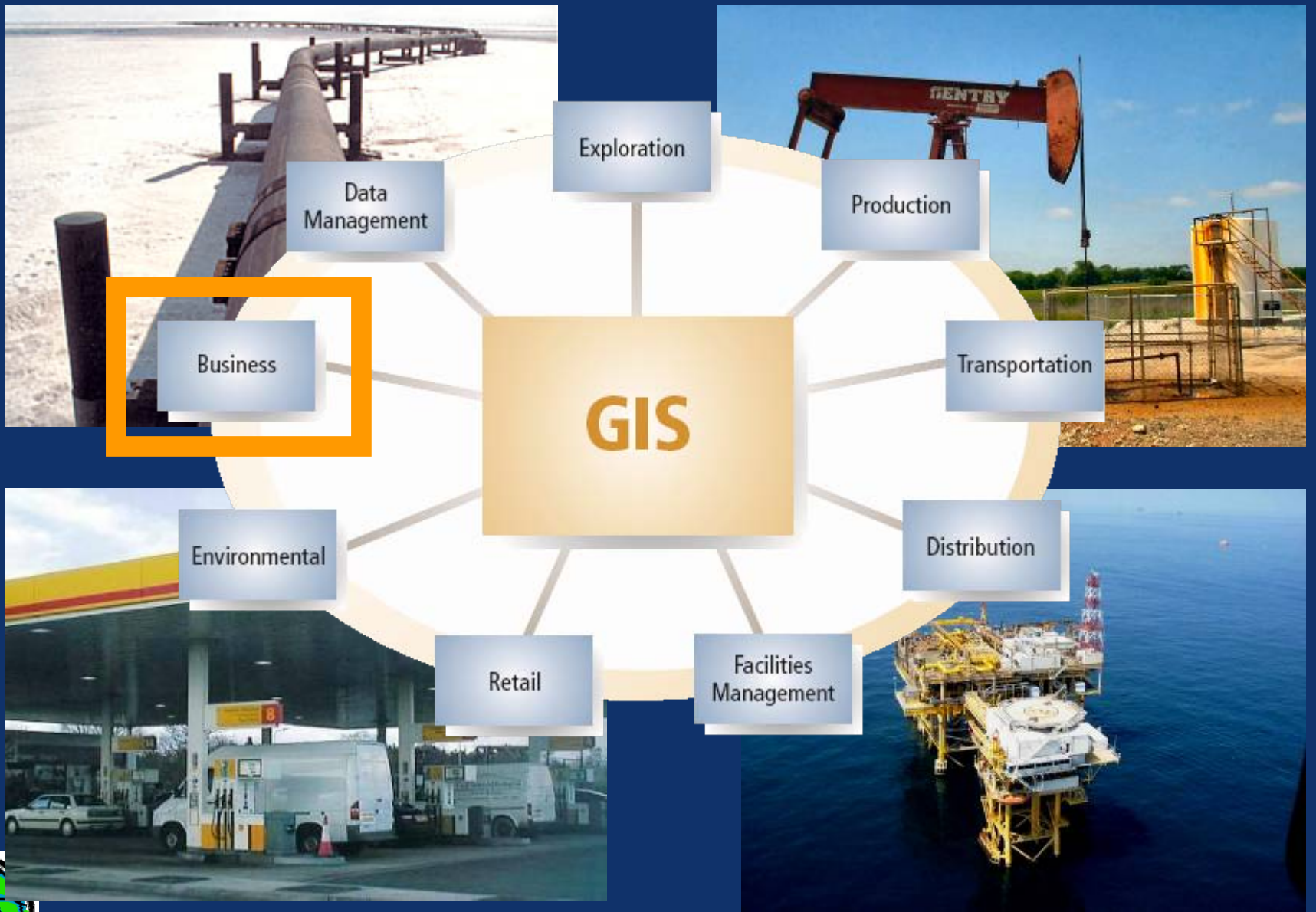
High-Consequence Area

- High-Consequence Area (HCA) analysis
 - Where is the pipeline?
 - What is its pressure?
 - Where is the building?
 - What is its occupancy?
- Regulatory reporting
 - new in the U.S.
 - megaprojects abroad



... ROI is significant





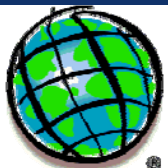
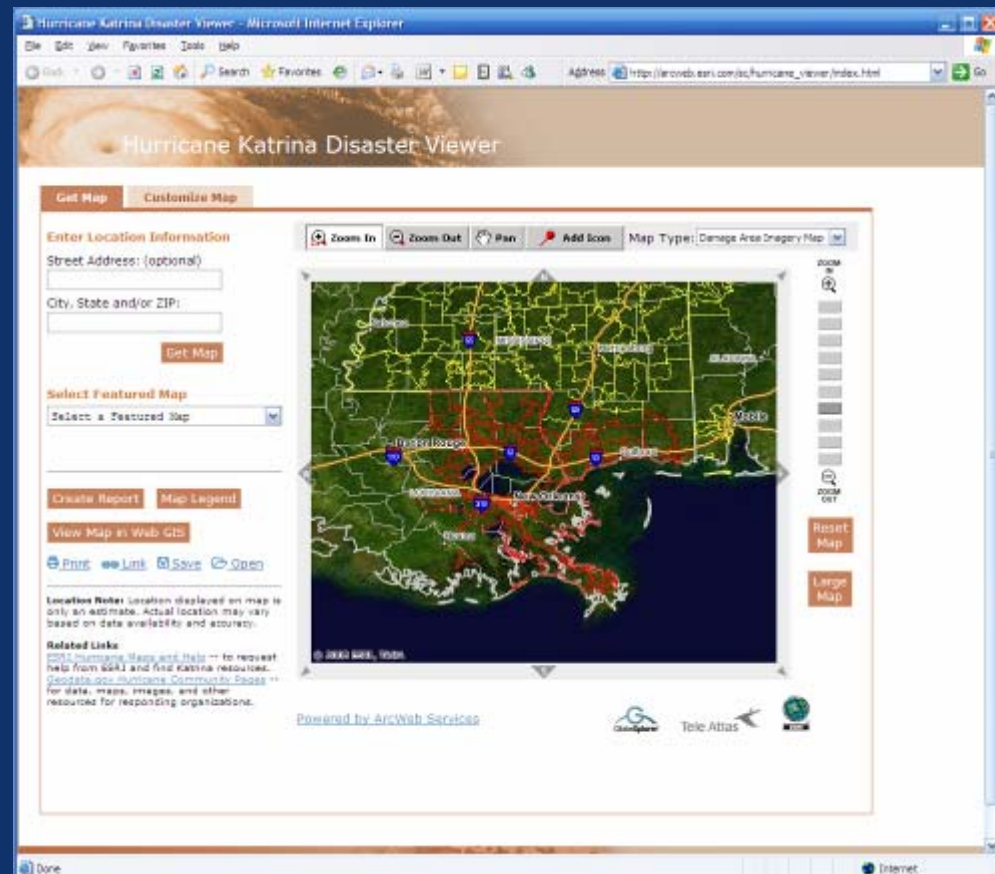
Prospect Portfolio

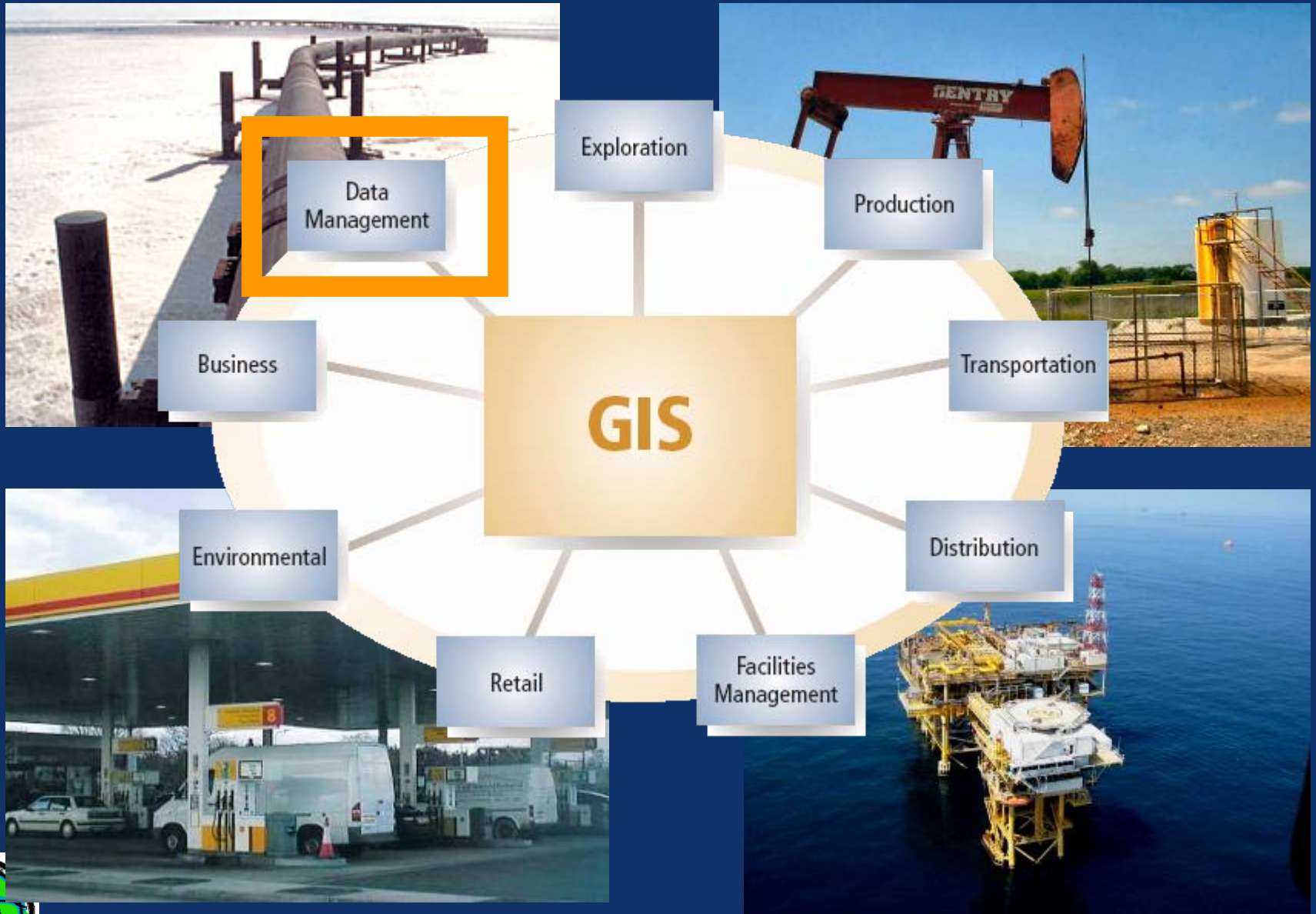
- Reserves Analysis and Mapping
- Exploration Prospects
 - Risk Assessment
 - Economic Assessment



ArcWeb Services Portals

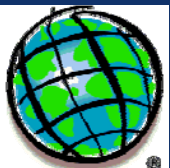
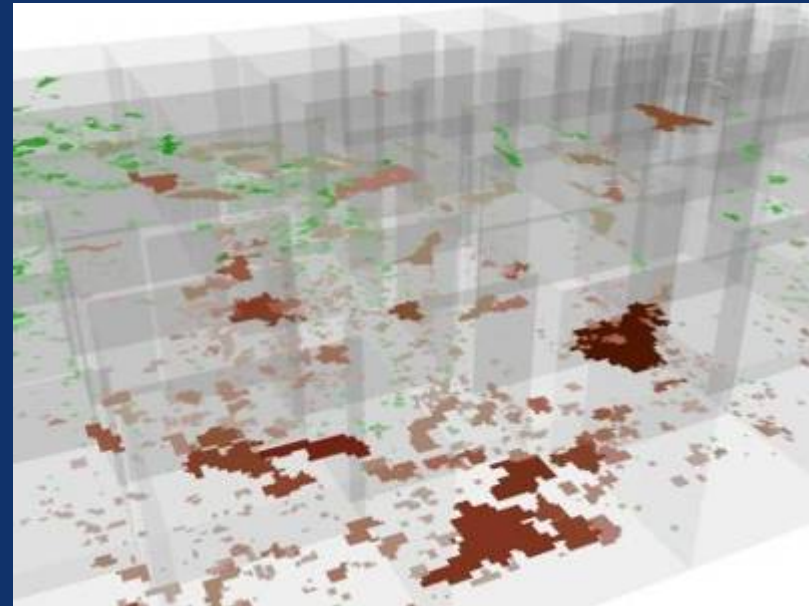
- Portals:
 - Push data *up* and *out* to all
- Web server:
 - Round-trip to- and -from server
 - GIS becomes the *dashboard* for new and legacy applications





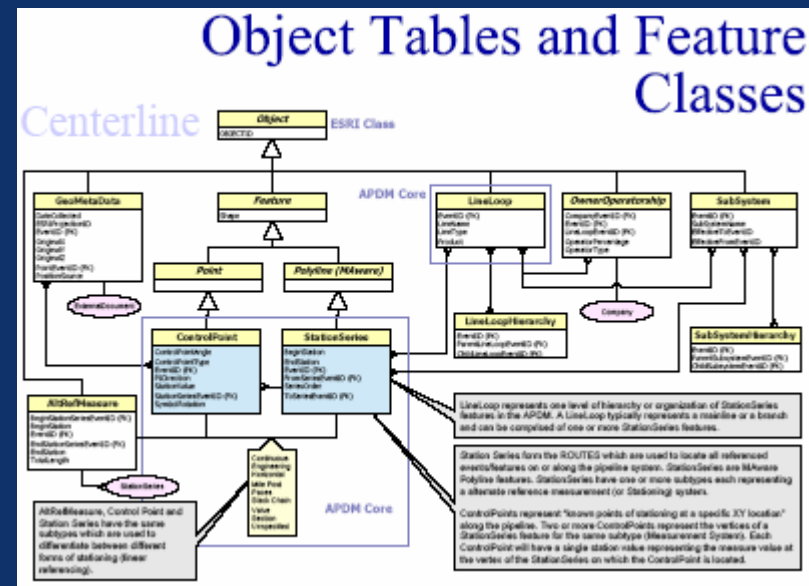
Data Management

- Where is your data?
- How do you access your data?
- Data Integration
- Versioning and Replication
- Metadata Managmt.
- Interoperability



Data Models

- Template: www.apdm.net
- APDM
- Metadata content
- Work with PODS and ISAT



ESRI

Petroleum Seminar

PUG

- April 3 -5 Houston Texas
 - Stay current on key topics in GIS for the enterprise, Web portals for petroleum companies, and interoperability for oil and gas operations
 - Connect with industry and product development teams to provide input for future ESRI product development
 - Network with ESRI solution partners to discuss your upcoming projects
 - Gain insight to guide GIS and IT development decisions for your organization

www.esri.com/pug



helping
manage our
world

