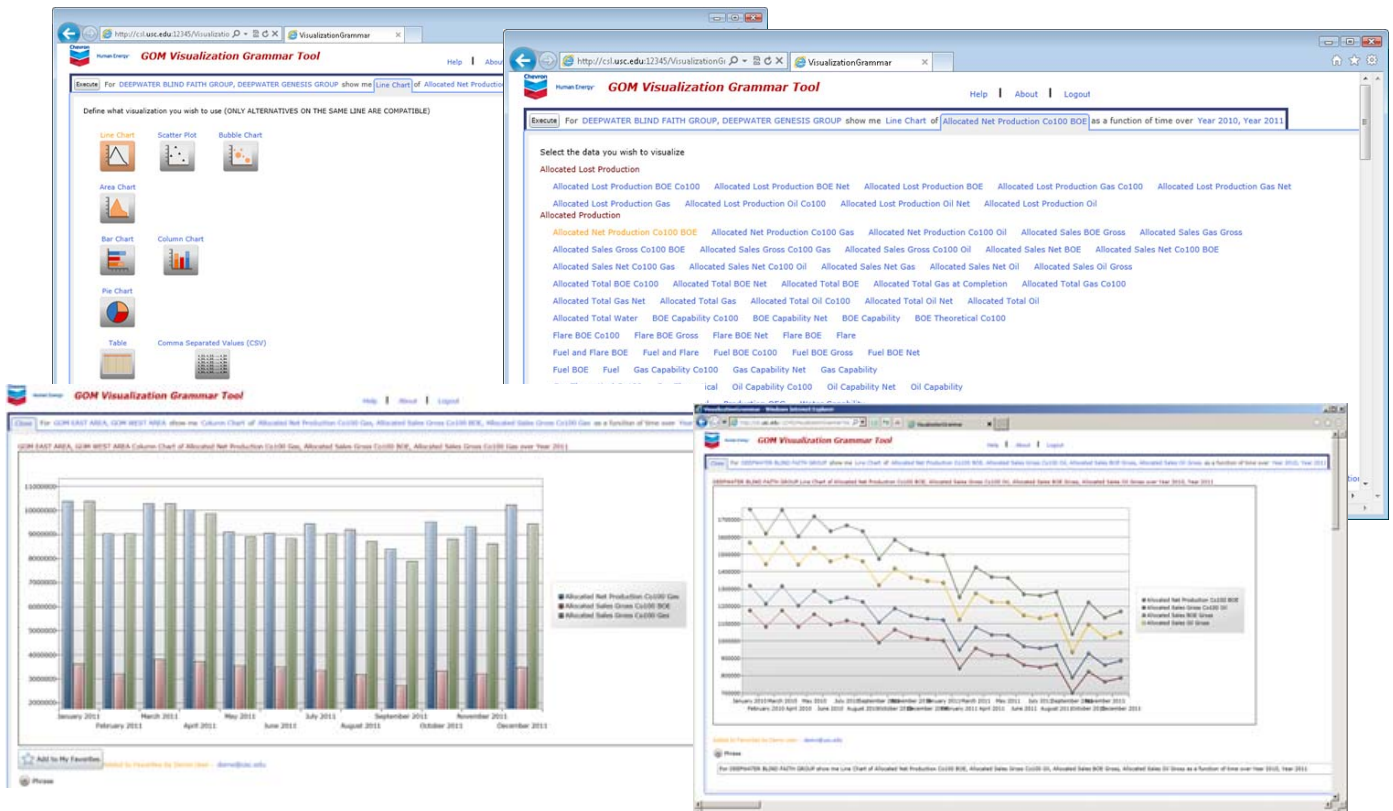## Visual Grammar

VG is a defining data analytics software tool for users without a technical background. This software enables non-experts to build complex queries by way of simple phrases, from which it automatically generates the corresponding visualizations. Generally, business users are not trained on databases or query writing techniques. This results in significant challenges, lost time, and loss of efficiency with respect to accessing and visualizing relevant data for decision making. VG is built on a flexible interface and uses a natural language for accessing and visualizing data as graphs or charts.

VG creates complex visualizations out of very large organized datasets

Assets cover large geographical areas, and may be remote and unmanned; VG integrates real time sensor data, from multiple sites, in a variety of formats to support large scale decision making for:

- ✓ Security
- ✓ Facilities
- ✓ Production
- ✓ Training
- ✓ Finance

About CiSoft

CiSoft is a USC-Chevron Center of Excellence for Research and Academic Training on Interactive Smart Oilfield Technologies. Established in December 2003, the Center includes participating research scientists from various departments in the Viterbi School of Engineering and from Chevron. Two important entities associated with the Viterbi School of Engineering, IMSC (Integrated Media Systems Center) and ISI (Information Sciences Institute) are closely associated with CiSoft. Expertise of participating USC faculty includes Petroleum and Chemical Engineering, Computer Science, Electrical Engineering and Industrial and Systems Engineering. Research areas include:

CiSoft's role has been to generate bursts of innovative ideas related to digital oilfields

Integrated Asset Management
Well Productivity Improvement
Robotics and Artificial Intelligence
Embedded and Networked Systems
Failure Prediction in Artificial Lift Systems
Reservoir Management
Data Management Tools
Immersive Visualization
Environmental Health & Safety

About USC

University of Southern California is at the forefront of research in information technology and a full spectrum of engineering disciplines. The Viterbi School consistently ranks in the top ten in the U.S. News and World Report rankings. Our highly interdisciplinary research environment has enabled faculty to respond to emerging needs for research in such diverse areas as conventional and renewable energy, imaging, robotics, software engineering, sensor networks, vision sciences, automated construction and photonics. The Viterbi School actively encourages technology transfer and commercialization through industrial partnerships. The university has several high performance computing resources with significant computational capabilities for a variety of computation-intensive projects including subsurface modeling and simulation. Our network spans all over the world and is reputed to be one of the largest, most influential, and loyal.

USC University of Southern California