Subsurface data security is priority

wipro

With a very few exceptions, commercially viable hydrocarbon systems are thousands of feet removed from direct observation. The Subsurface Scientist utilizes Subsurface Data to provide clues that will unlock the understanding of the subsurface. The data are collected all along the hydrocarbon asset life-cycle, from exploration to discovery to field delineation to full field production and finally through asset abandonment. Subsurface Data supports the understanding of the subsurface, which in turn supports the operational decisions involved in Exploration and Production (E&P) operation, which in turn enables a company to exploit the value of the hydrocarbon system fully. Many of the data sets acquired during E&P operations represent a snapshot of the hydrocarbon system at a point in time. These data can never be recaptured under the same conditions and must therefore be catalogued and curated to ensure the data can always relate to the asset, for as long as the asset is of interest to the company. Sufficient metadata, i.e., data about the data, must be captured and carefully curated as well. The metadata captured will be instrumental to the ability to efficiently find the data once entered into the corporate data catalogue, and also to understand why the data were important enough to be captured in the first place. The extent to which a company values, treats, and utilizes Subsurface Data is a key differentiator between a company and its peers.

Like any asset, asset security and protection are essential components of asset stewardship. Subsurface Data must be secured and maintained in order to maximize the return on the investment. Protection from malicious tampering/destruction and industrial espionage immediately jump to mind. Cyber security and counter measures have never been more important and will continue to demand serious consideration for not only Subsurface Data, but also all company data and systems. Most Exploration & Production companies are spread across multiple geographies and have increasing reliance on web-based communications in their workflows, which increases the number of threat vectors. Bad actors and state-sponsored digital armies are continuing to push the evolution of spyware and malware to the highest levels of technical possibility. Given the global nature of many E&P companies and the eco-political space in which the E&P companies exist, continual vigilance and adaptive counter measures must be employed and sustained. The Security Operation Center (SOC) is an indispensable line of defence against malicious threats and is responsible for monitoring and responding to security threats. A growing number of E&P companies are actively engaged in hosting, or investigating the potential of hosting, their immense collections of Subsurface Data in public, private, or hybrid clouds. This option is not only cost effective from a storage and infrastructure point of view, but it also leverages the Security Operations Center of the cloud provider with regard to perimeter defence.

Another important data security consideration is protection from loss due to natural disaster, which demands that Business Continuity Plans be perfected and tested on a periodic basis. At least one copy of the data should be secured at one or more locations that are well removed from the primary storage location.

The next level of security has to do with making sure the data are accessible to only those staff that need to work with the data. An Access Entitlement Scheme must be defined, enforced and actively scrutinized to ensure the data are adequately protected and only those that need to see the data have access. The data must also be protected from inadvertent change so that if data are changed accidentally, the prior version of the data can be quickly restored.

Another, perhaps less thought about aspect of digital asset protection is the protection against value loss due to staleness, underutilization, and attenuation. While these topics may not top the list when one thinks about data security, the threat and prospect of value loss is real. Data staleness leads to data underutilization. Unless a concerted effort is directed at the data to ensure the data is kept it up-to-date, properly indexed and integrated between data types and

Data must have a dedicated steward that keeps the data fit-for-purpose to mitigate the risk of underutilized properly.

across the various systems that house the data, the data is at risk and will never reach its potential maximum value. Data underutilization takes many forms, from weak or decayed curation to lack of integration between data types across the many systems where the data live, along the asset life-cycle. Data must have a dedicated steward that keeps the data fit-for-purpose to mitigate the risk of underutilized properly. Data Attenuation is a term used to describe the difference between the data and metadata that were gathered versus the data that an application can utilize. The amount of data gathered continually increases as new tools and services are added by data acquisition companies.

Commercial-off-the-shelf applications have historically been slightly, if not significantly, behind full utilization of the data and metadata contained in the data so it is important to save, catalogue and curate a copy of the raw acquisition data set so that the data can be fully utilized at some point in the future, when the commercial application or purpose-built analytics can make use of a greater portion of the acquired data.

In summary, Subsurface Data Security, in all the dimensions discussed, is essential for data preservation and to maximize its potential value.

About the author

Mark A. Priest
Energy and natural resources
Practice Partner, Wipro Ltd.

Mark holds a Bachelor of Business Administration degree in Computer Information Systems from West Texas A&M University. With an experience of more than 30 years, he has worked in multiple roles like, Team Lead for DM applications, Professional Development Advisor and Data Management Business Owner. He enjoyed assignments in Dallas, Midland, Houston, Port Harcourt, Nigeria, Angola and Doha.

In September 2017, Mark joined Wipro as an Energy and Natural Resources Practice Partner.

Wipro Limited
Doddakannelli, Sarjapur Road,
Bangalore-560 035,
India

Tel: +91 (80) 2844 0011
Fax: +91 (80) 2844 0256
wipro.com

Wipro Limited (NYSE: WIT, BSE: 507685, NSE: WIPRO) is a leading global information technology, consulting and business process services company. We harness the power of cognitive computing, hyper-automation, robotics, cloud, analytics and emerging technologies to help our clients adapt to the digital world and make them successful. A company recognized globally for its comprehensive portfolio of services, strong commitment to sustainability and good corporate citizenship, we have over 160,000 dedicated employees serving clients across six continents. Together, we discover ideas and connect the dots to build a better and a bold new future.

For more information, please write to us at
info@wipro.com

IND/B&T/JUL-DEC2018