



ENABLING ENTERPRISE CAPABILITY FOR AI DRIVEN ACTIONS

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CHESAPEAKE
ENERGY

think big,
start small,
learn fast ...

- Stephen Covey

Digital transformation is the process of using digital technologies to create new — or modify existing — business processes, culture, and customer experiences to meet changing business and market requirements. This reimagining of business in the digital age is digital transformation.

-salesforce

Image by salesforce

CHANGING ENVIRONMENT

safer, cheaper, faster

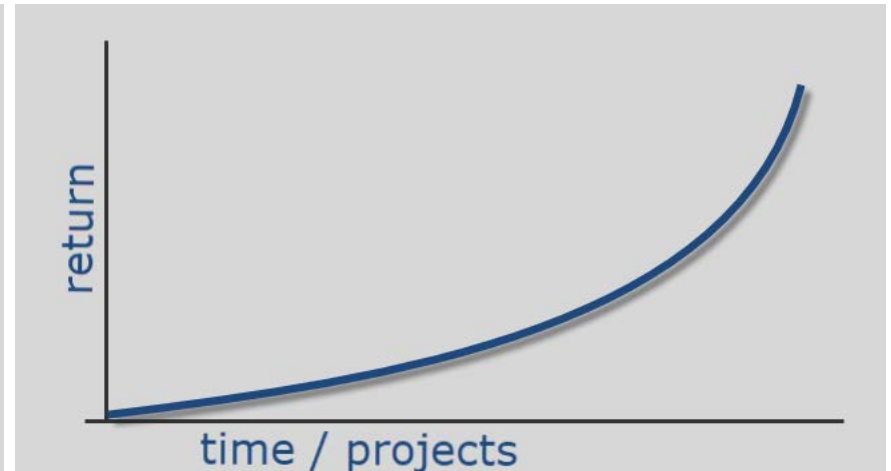
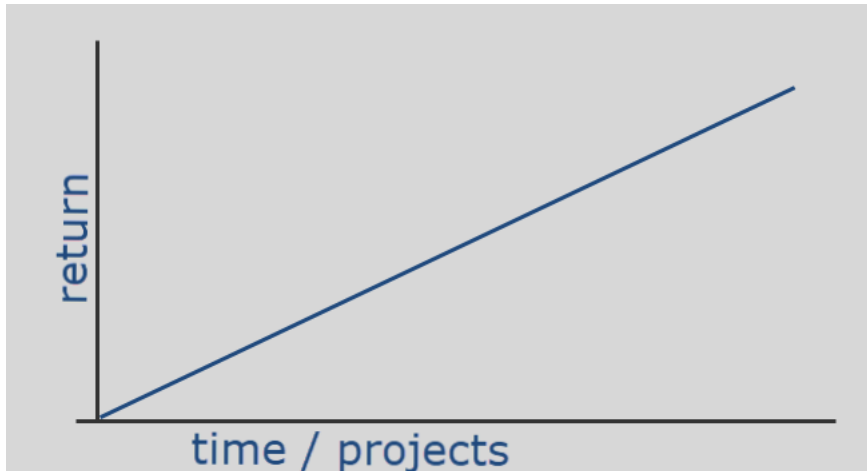
- Capital constraints
 - > 2018 Capital raised \$16B – lowest in 5 years (US EIA)
- Low commodity markets
 - > WTI at \$55/bbl
 - > Natural Gas at \$2.31/MMBtu (Bloomberg)
- Unfavorable oil and gas sentiment
 - > Economic and political climate (Tweeter)
- Good news – we have the data!
 - > US active rigs generate 365PB of data a year (Noble Energy)

Value is not determined by those who set the price... but by those who choose to pay it.

– Simon Sinek

A PATH FORWARD

- Well defined projects delivering foundational AI capabilities
 - > Immediate return on investment
 - > Foundational building blocks
 - > Substantially decrease cost and effort of subsequent projects



The best time to plant a tree is 20 years ago, the second best time is now...

-Chinese Proverb



Artificial intelligence (AI) is a field of science, in which machines (computers) develop cognitive functions commonly associated with human mind, like learning, problem solving, and decision making.

Machine learning (ML) is the scientific study of algorithms and statistical models that computer systems use to perform a specific task without using explicit instructions, relying on patterns and inference instead. ML is a subset of AI.

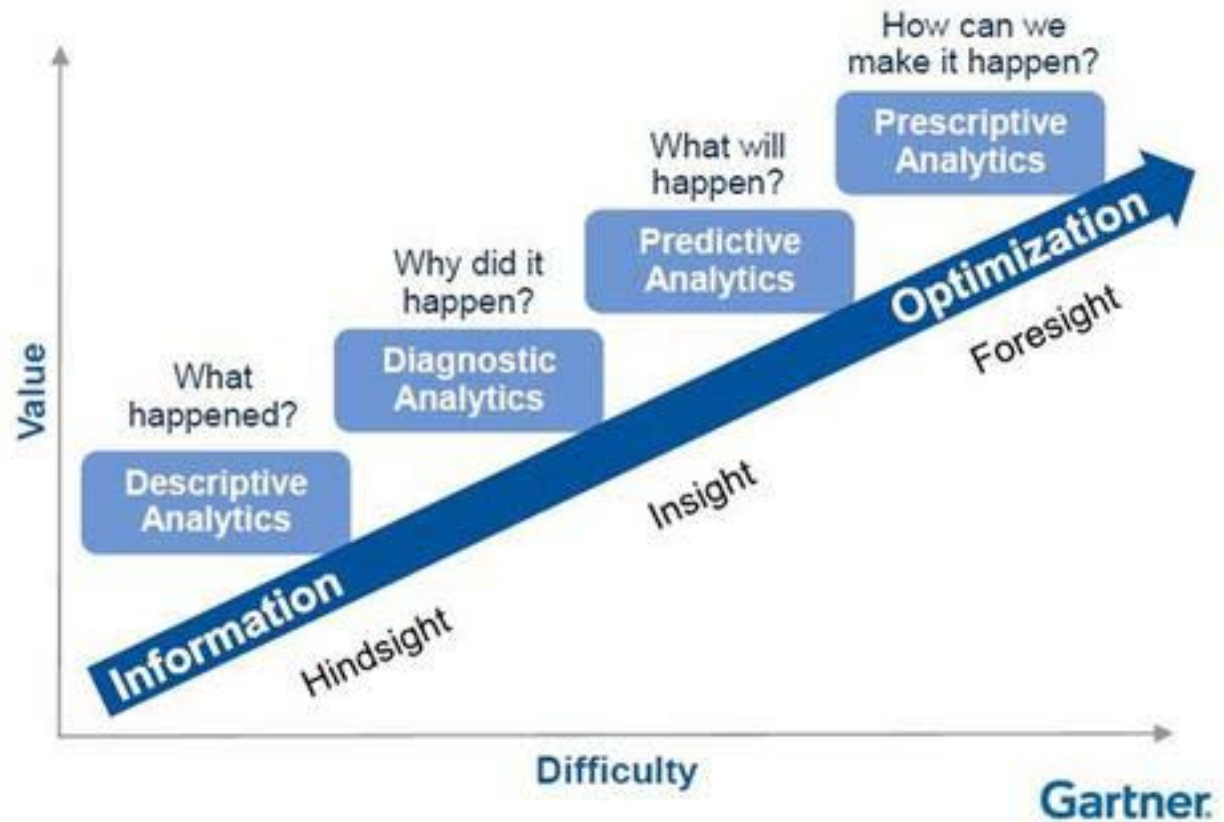
Image by Council of Europe

ANALYTICS MATURITY

Advanced Analytics

PCA
Feature Importance
Correlation

Unsupervised clustering
Anomaly detection
Imputation
Data quality





USE CASES

- Leak detection
- Rod lift optimization
- Route optimization

COLLABORATIVE CROSS-FUNCTIONAL TEAMS

- Fully unpack problem space
 - > Evolve from symptoms to fully understanding problem space
 - > In-depth discussions with SMEs and key stakeholders
- Identify opportunities
 - > Diverge to full spectrum of opportunities before converging on key deliverables
- Prioritize feasible solutions and fundamental capabilities
 - > Focus on opportunities within resources and time
 - > Identify key capabilities to develop

STRATEGIC PARTNERSHIPS

- Develop and deliver products with business partners
 - > Involve customers in product design
 - > Secure key partnerships
 - > Keep open dialog with SMEs along the process and at regular check-ins
- Empower teams to use and evolve analytical products
 - > Transition support to IT/OT teams
 - > Cross-skill petrotechnical and business staff

INNOVATION MINDSET

- Platform modernization
 - > Converting to hybrid cloud
 - > Native cloud AI technologies
 - > Open source
- Hackathons
 - > Every entry to date has become a successful project
 - > Last hackathon held in the field location
- Agile methodology
 - > Iterative delivery
 - > Use wisely

ANALYTICS IMMERSION PROGRAM

- Petrotech and business professionals join analytics team
 - > Allocate 3 days a week
 - > Duration 3 to 6 months

- Flexible target level
 - > Data analyst
 - > Data engineer candidate
 - > Data science candidate

ANALYTICS COMMUNITY OF PRACTICE

- Composed of professionals throughout all functional groups
- Self organized
- Peers learning from and educating peers
- Sharing best practices, failures, and innovating forward

Every data conversation needs to be framed in the context of being a business conversation, and every business conversation framed as a data conversation.

-Gartner