



# Trends in Oil and Gas

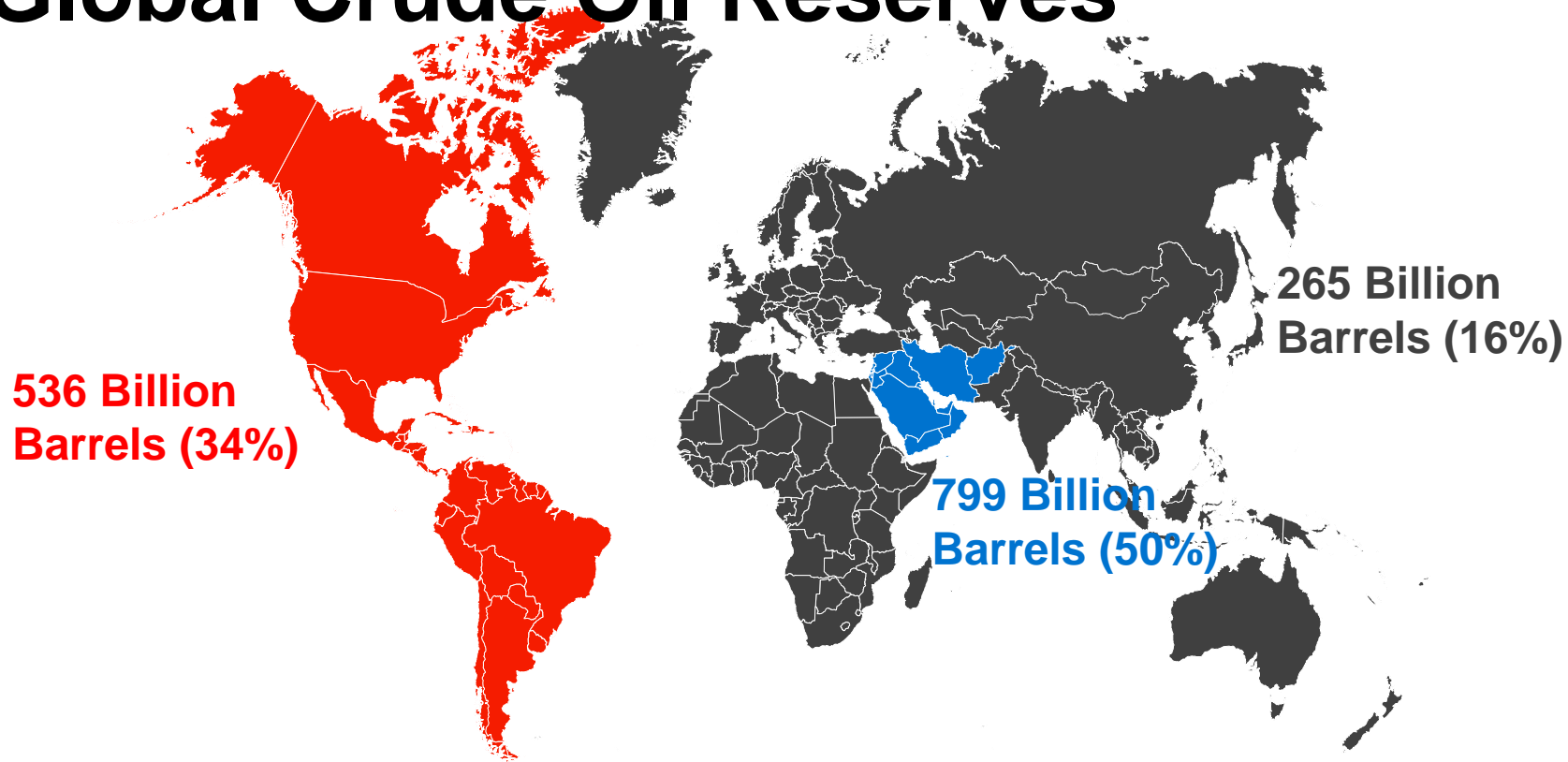
*2014 Brazil Regional Seminar*

Presented by **Michael Graves**, Industry Principal

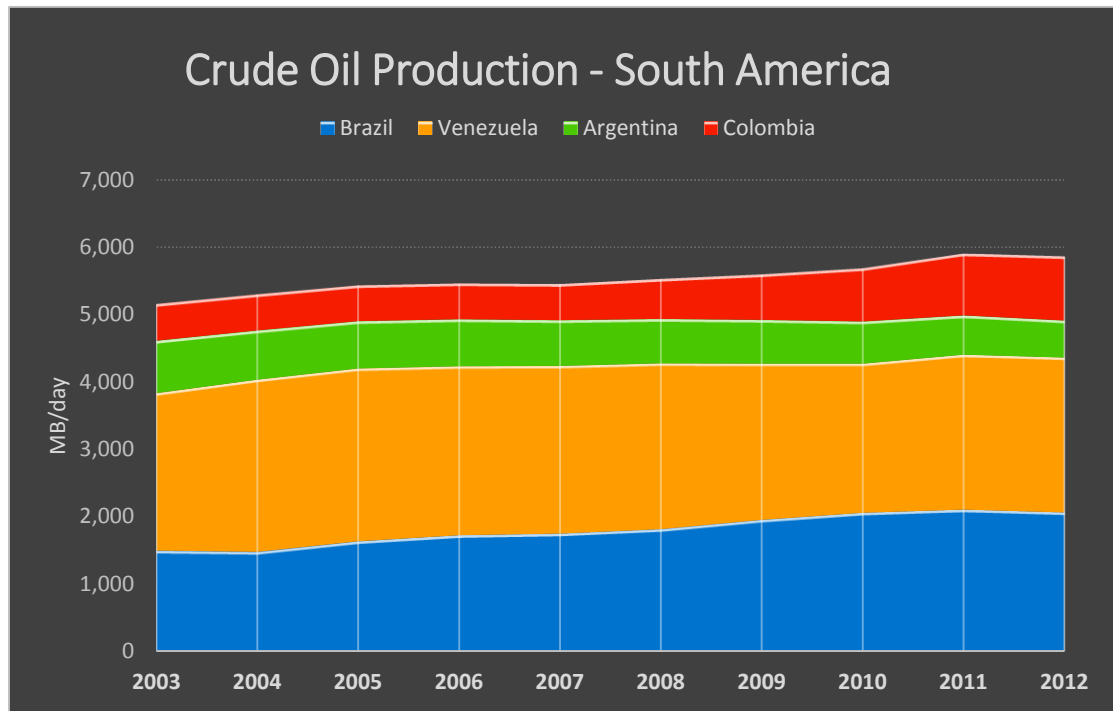
# O&G Market Trends



# Global Crude Oil Reserves



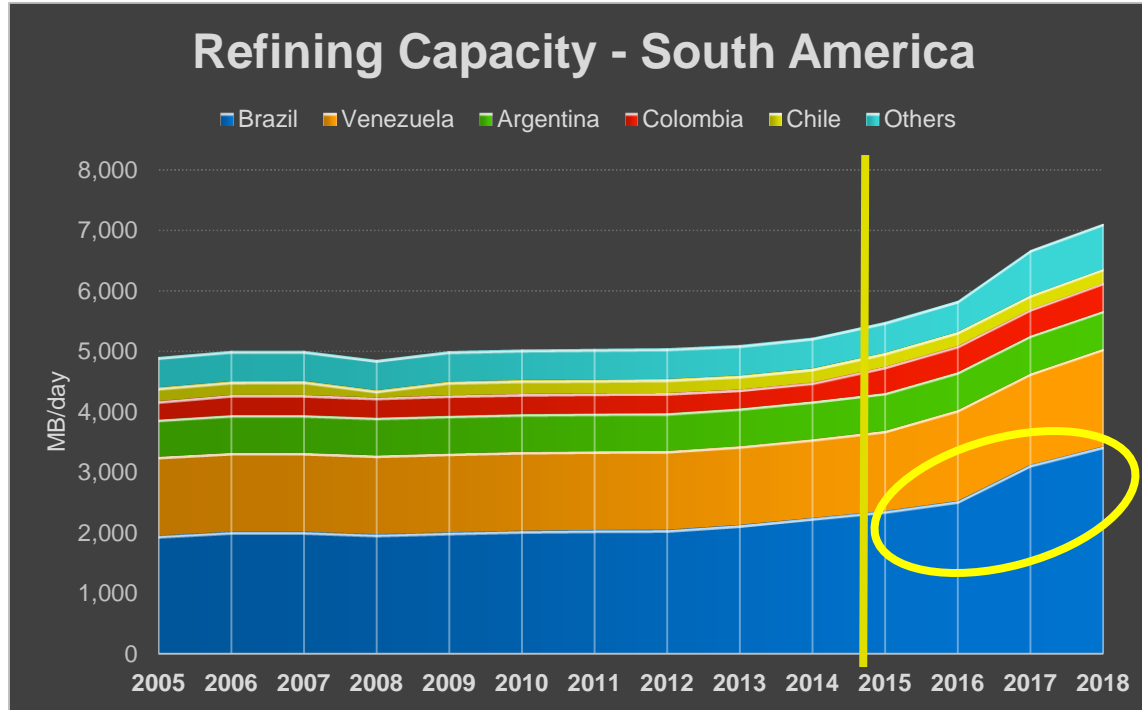
# Production Performance



- The increase in production over the past decade is attributable to growth in Brazil, and Colombia, which offset production declines in Venezuela, and Argentina
- New liquids-rich prospective shale formations in South America:
  - Vaca Muerta in Argentina,
  - Ponta Grossa in Brazil,
  - La Luna/Capachu shared by Colombia and Venezuela.



# Refinery Capacity Forecast



- South America provides 5.3% of Global Refining Capacity
- Brazil, Venezuela, Argentina, Colombia and Chile accounted for 90.2% of the total refining capacity in South America
- Between 2014 and 2018, eight new refineries are expected to become operational. The incremental capacity of these refineries will be 1,685 mbd in 2018.

# Other Market Factors:

- Natural Gas:
  - Argentina and Brazil are among the top 10 countries world-wide with recoverable shale gas.
  - Despite recent production gains in South America, the continent is at risk of a decline in dry natural gas production because of maturing fields and a lack of continued investment.
- Panama Canal Expansion:
  - Currently, no LNG trade is conducted through the canal. However, the expanded canal will be able to accommodate more than 80% of the world's current LNG carrier fleet.
  - LNG Exports to Asia, the largest LNG import market, through the Panama Canal will increase with growing natural gas production in the Americas.
- Brazil's pre-salt layer:
  - Analysts predict oil and gas reserves at more than 50 billion barrels of oil equivalent (current reserves are 13 BOE).



# Conclusions

- O&G is a growth industry for South America
- Near-term focus is on liquids (crude)
- Planned refining capacity is on track to monetize existing reserves
- Natural Gas in South America will follow liquids with LNG export opportunities enabled by Panama Canal expansion

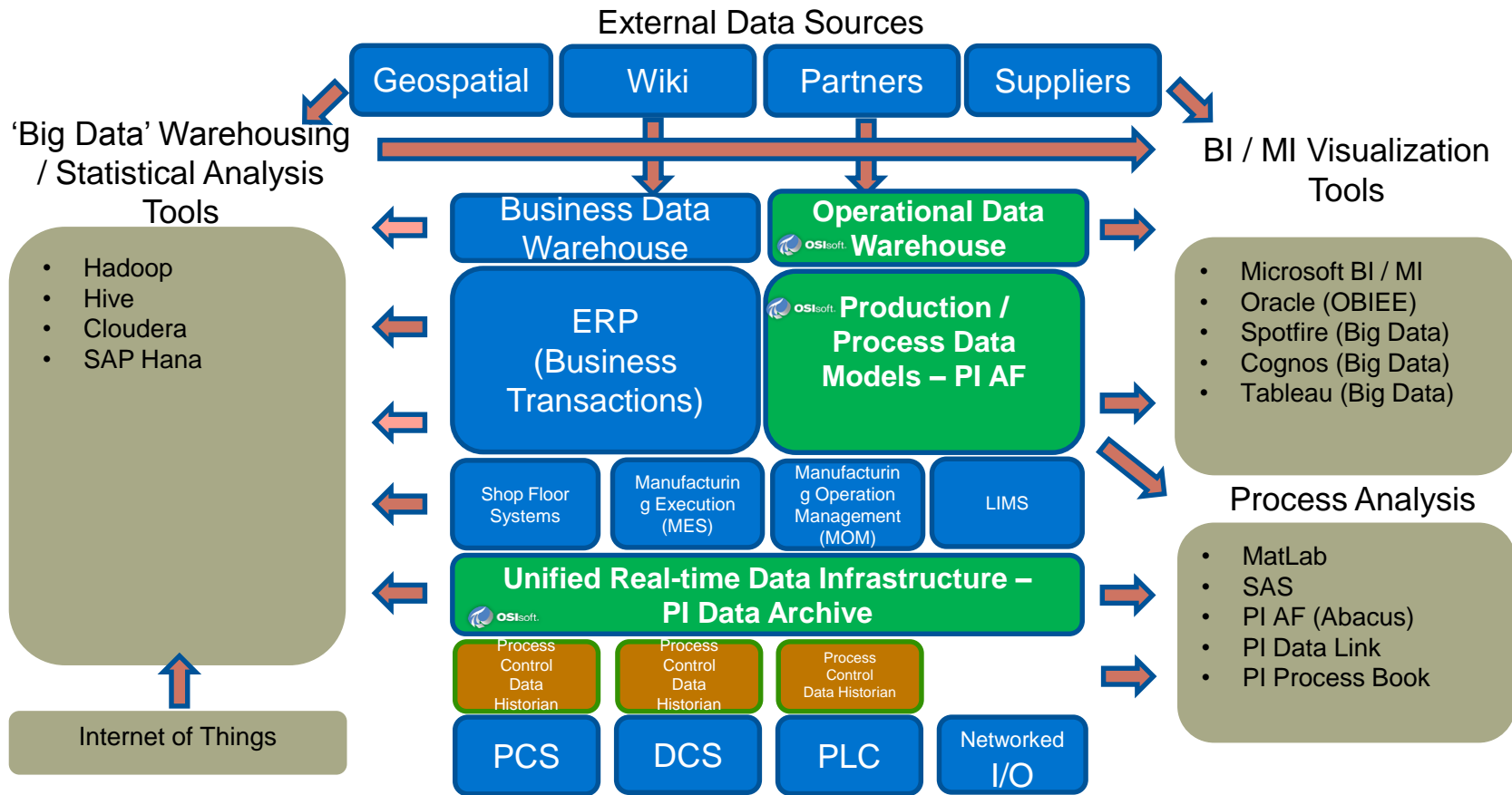
# O&G IT Mega-Trends



# IT Megatrends

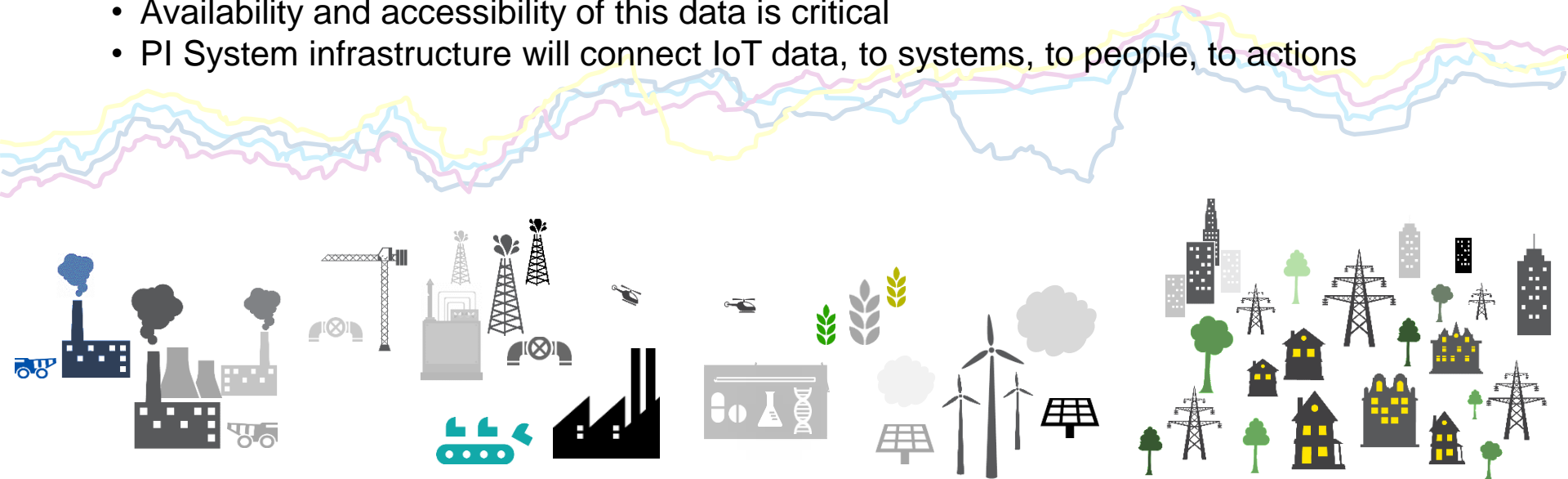
- Big Data – “Analyze Everything”
- Internet of Things – “Sensors Everywhere”
- Cloud – “Host Anywhere”
- Mobility – “Access Anytime”
- IT/OT Convergence – “Eliminating Boundaries”

# The World of Enterprise “Big Data” and Analytics

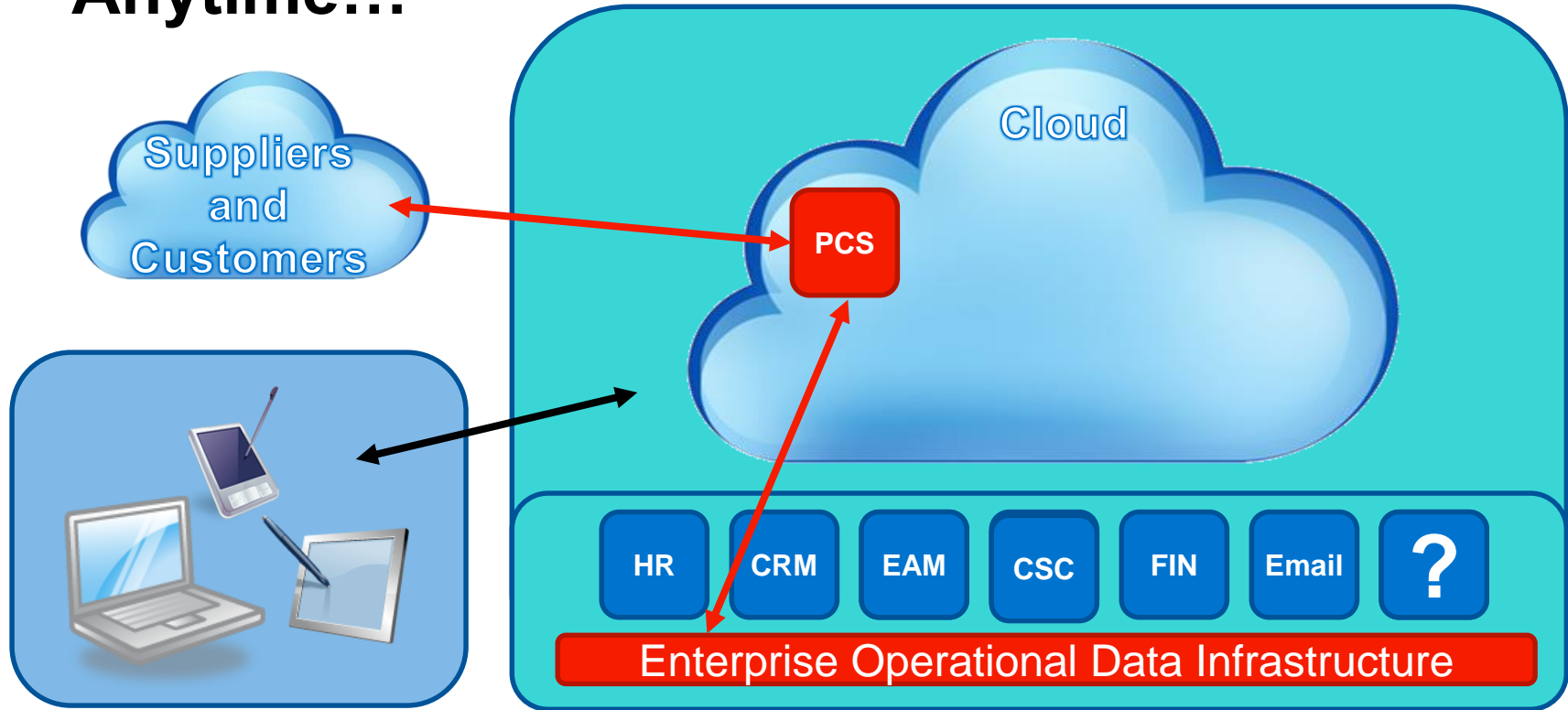


# Internet of Things (IoT)

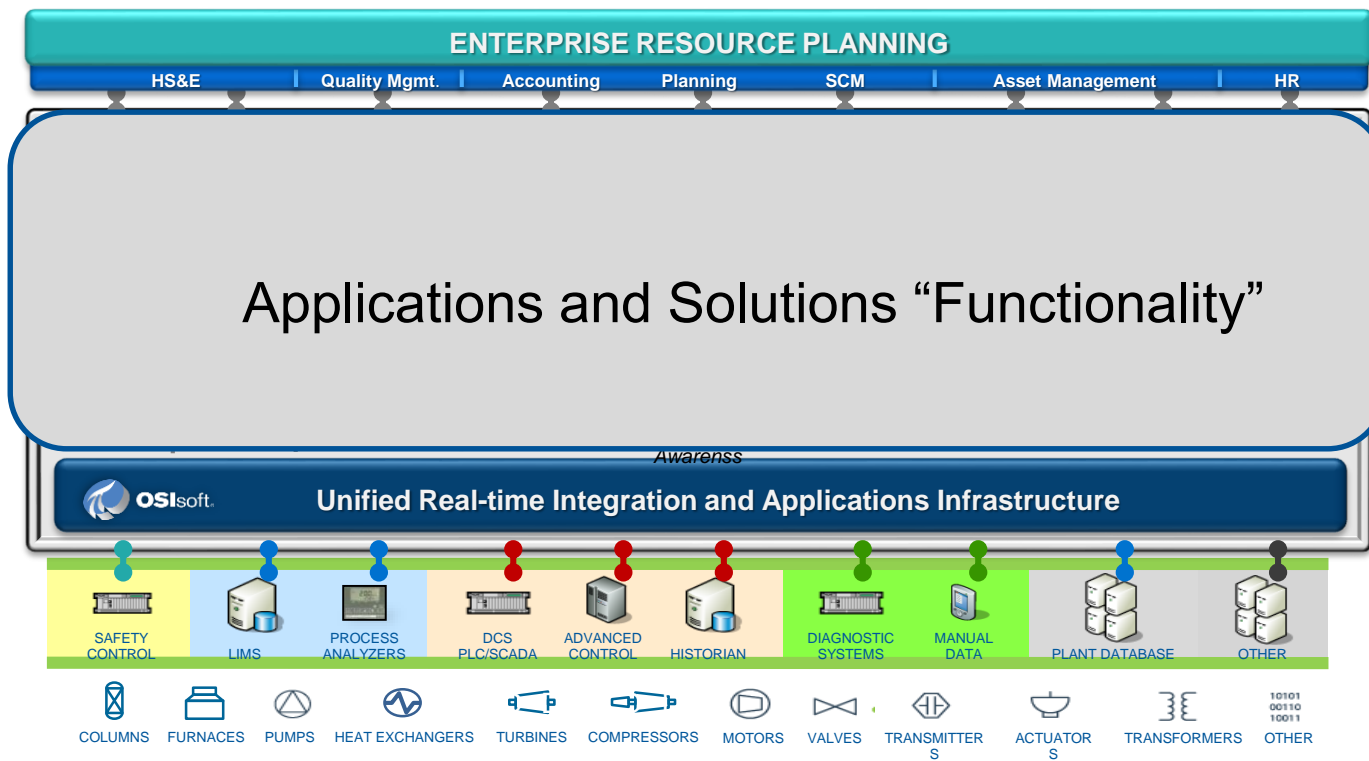
- Real-time Operations Data is being created everywhere in the Digital Oil Field
- According to Gartner, there will be nearly 26 billion devices on the Internet of Things by 2020
- Availability and accessibility of this data is critical
- PI System infrastructure will connect IoT data, to systems, to people, to actions



# The New Enterprise: Host Anywhere, Access Anytime...



# PI System enables IT/OT Convergence



# Questions and Answers





# Thank you

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