



# **Digital Innovation to gain efficiency in production process A Robust Method for Data-Driven Gas-Lift Optimization using Edge computing**

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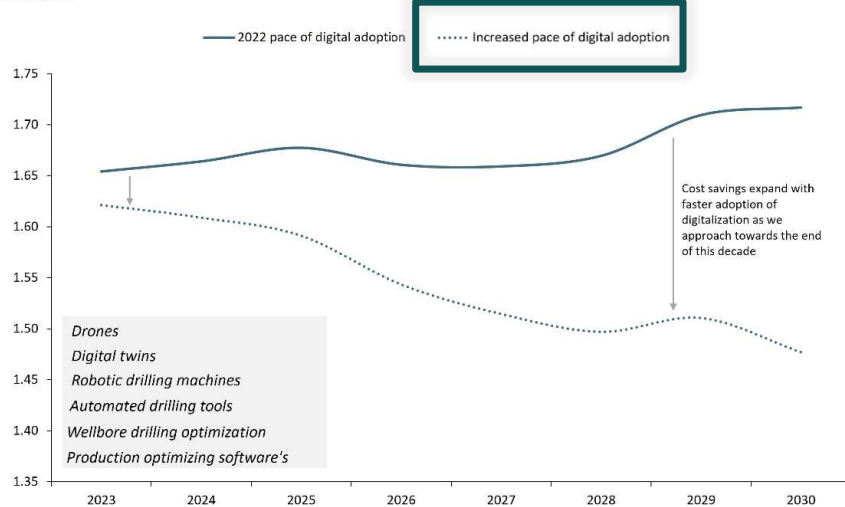
**Society of Petroleum Engineers**

# Introduction

## Digitalization

**U\$1116 B**  **U\$130 B**  
Pre -spending till 2030      Post spending after 2030  
**OPEX and CAPEX savings/Year**

**Figure 1: Oil and gas industry spending per year with an increased pace of digitalization**  
USD trillion







\*Considering constant inflation and productivity gains in case increased pace of digital adoption  
Source: Rystad Energy ServiceCube – Oil & Gas; Rystad Energy research and analysis

## Gas lift market



**~2 Million** Wells  
**~1 Million** Artificial lift Wells  
**~10%** Gas Lifted wells

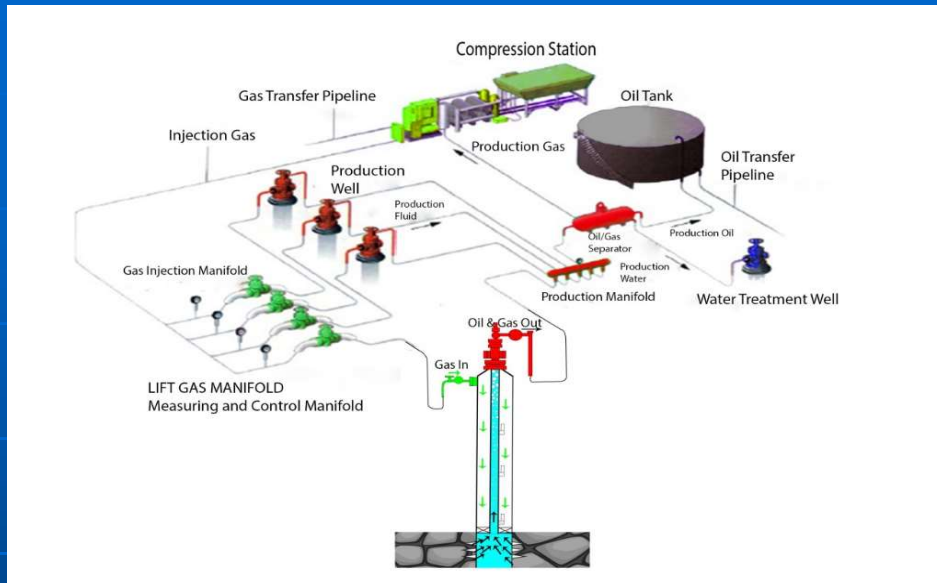
**U\$1.8 B**  **U\$3.8 B**  
**2023**      **CAGR 7.6%**      **2032**

 **Smart sensors**       **AI/ML**       **Footprint**

# IIoT/Edge platform | Benefit



# Traditional workflow



## Well performance

- Model driven
- Changing well conditions
- Outdated physics model
- Slugging behavior



Manual  
Operation



Field resources  
& time



Missed Production  
Opportunities

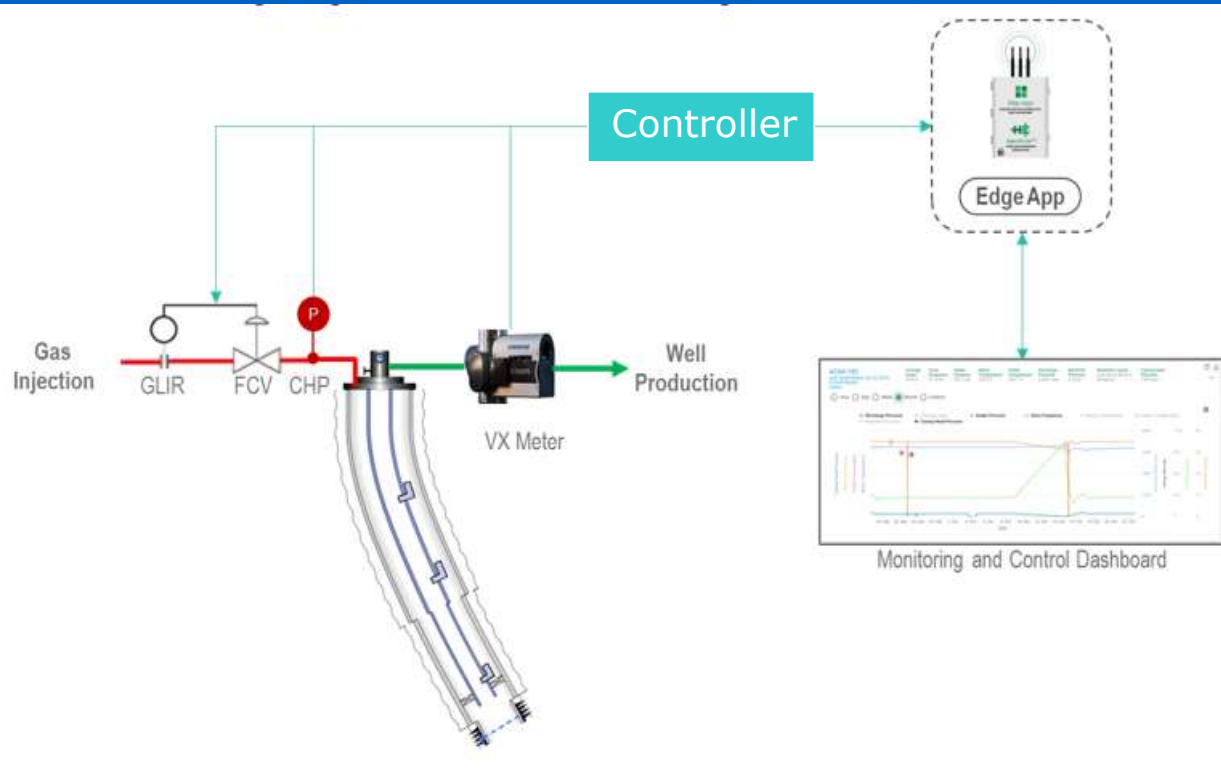
**How do you ensure your well is in the best  
operating envelope?**

# Data Driven approach

## App Configuration

Define inputs and constraints

- Well level
- Group level
- Optimisation constraints



# Permian Basin Case Study



# Case-1: Single Well

- Single Well Optimization: Well A
- Main Highlights:
  - ✓ Fully autonomous workflow execution
  - ✓ Production maintenance inline with natural well declination
  - ✓ Good performance under changing conditions

# Case-2: Multi-Well

- Multi-Well Optimization:
  - ✓ Well B
  - ✓ Well C
  - ✓ Well D
- Main Highlights :
  - ✓ Fully autonomous workflow execution
  - ✓ Production maintenance inline with natural well declination
  - ✓ Step-change for underperforming wells



# Conclusion

