

# THE INTELLIGENT REFINERY

DIGITAL. DISTILLED.

ACCENTURE DIGITAL REFINING SURVEY 2018



## TREND 1

### Convergence is a reality

Across the digital refinery, once-siloed systems (information technology and operations technology) are coming together to move the business in new directions.

#### TOP RESULTS



#### OTHER RESULTS



#### IT/OT CONVERGENCE ACTIONS

Refiners are bringing together their IT and operational agendas.

#### KEY TAKEAWAY

Over 20% of refiners are taking multiple actions to address the organizational changes required for IT/OT convergence.

## TREND 2

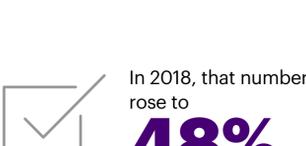
### Digital is as digital does

Digital technologies touch every aspect of refining operations. Yet some are under-deployed resulting in a loss of opportunity.

#### TOP RESULTS



#### OTHER RESULTS



#### GOAL OF DIGITAL ADOPTION

Improve process control through use of artificial intelligence and more robust data science modelling.

#### KEY TAKEAWAY

There is an opportunity to expand and scale the mix of digital technologies into refining operations.

## TREND 3

### Refiners are yet to realize potential value

Technology optimally works when it contributes a measurable value.

#### VALUE



\* includes don't knows and those who do not measure



#### IMPACT



#### GOAL OF VALUE REALIZATION

Implement a wider spread of digital technologies across the refinery, as for the majority digital still has limited value or unrealized value.

#### KEY TAKEAWAY

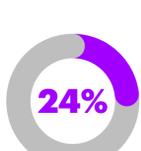
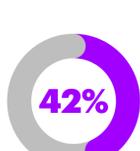
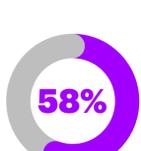
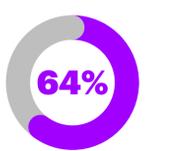
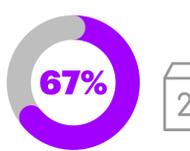
Digital technologies can influence a broader set of refining operations to deliver plant-wide transformational change and release trapped value.

## TREND 4

### Lack of digital investment increases risk

In today's competitive race, refiners run a risk in not investing in digital technologies.

#### TOP RESULTS (BASED ON 3 MOST IMPORTANT RISKS)



#### GOAL OF DIGITAL INVESTMENT TO MITIGATE RISK

Invest in digital to bring changes to the cost base and refining operating model, and to increase the ability to predict and react to change.

#### KEY TAKEAWAY

Wider digital adoption can be a fundamental defense against industry disrupters and a key enabler for further cost reduction and margin improvement.

## TREND 5

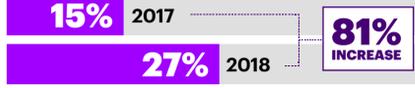
### Workforce skills are increasingly important

Refiners cite certain barriers which are preventing successful adoption of digital technologies in the organization.

#### DIGITAL ADOPTION - BARRIERS

Showing biggest annual changes

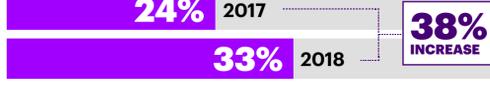
##### Lack of maturity of digital technology



##### Lack of workforce skills and subject matter expertise



##### Resistance to adopt digital solutions



#### GOAL OF DIGITAL INVESTMENT TO MITIGATE WORKFORCE ISSUES

Invest in relevant digital skills — with reskilled and redeployed workers — is essential to unlocking the value of digital technologies and digital maturity.

#### KEY TAKEAWAY

By retraining employees already familiar with operations, and enabling more collaboration between employees and machines, refiners will optimize time and cost efficiency on the digital journey to becoming a more intelligent refinery.