

THE CONNECTED REFINERY

CRACKING THE CODE: DIGITAL DISTILLED

2017 DIGITAL REFINING SURVEY

NEW DIGITAL TECHNOLOGIES ARE NOT CURRENTLY A TOP INVESTMENT PRIORITY, BUT **DIGITAL SPENDING WILL INCREASE** DRIVEN BY OPERATIONAL COST REDUCTION.

TREND 1 NEW DIGITAL TECHNOLOGIES ARE DISRUPTING INVESTMENT PLANNING AND PRIORITIES

ONLY **19%** CURRENTLY RECOGNIZE DIGITAL AS ONE OF THEIR TOP 3 PRIORITIES – BUT THIS IS SET TO CHANGE.



49% cite maintenance and reliability – ranking it as the first priority.



34% cite health, safety and environmental compliance – ranking it as second priority.



33% cite quality and yield management – ranking it as third priority.



More than half (**57%**) said current level of digital investment was “more or significantly more” than 12 months ago.



62% plan to invest “more or significantly more” over the next 3 to 5 years.

TREND 2 ANALYTICS IS NUMBER ONE FOR PERFORMANCE FOLLOWED BY CYBERSECURITY

NEARLY THREE QUARTERS (**74%**) CITE ANALYTICS AS THE CURRENT DIGITAL TECHNOLOGY DRIVING THE GREATEST IMPACT ON OPERATIONAL PERFORMANCE.

41%



cybersecurity was ranked as the second most important driver.

38%



mobility was ranked as the third most important driver.

TREND 3 NATIONAL OIL COMPANIES (NOCs) ARE LEADING THE WAY IN DIGITAL MATURITY

ALMOST A QUARTER (**24%**) OF NOCS ARE MAKING SIGNIFICANTLY HIGHER LEVELS OF INVESTMENT IN THIS AREA THAN A YEAR AGO.

21%

of NOCs indicate digital maturity.

14%

of IOCs indicate digital maturity.

4.5%

of independents indicate digital maturity.

NOCs

24%

IOCs

12%

IOCs

30%

INDEPENDENTS

24%

NOCs

25%

According to the survey, NOCs (24%) stated they are currently spending 20% or more than they were a year ago vs IOCs (12%) in digital technologies.

However, over the next 3-5 years, 30% of IOCs and 24% of independents indicated they plan to spend significantly more (20%+). 25% of NOCs also plan to spend significantly more (20%+) in the next 3-5 years.

TREND 4 IT'S NOT "CAN REFINERS AFFORD TO"—IT'S "CAN THEY AFFORD NOT TO"?

40% CITED OPERATING COSTS AS THEIR TOP PRIORITY. HOWEVER, HALF SAID THE BIGGEST BARRIER TO WIDER DIGITAL ADOPTION IN THEIR BUSINESS IS COST.

35%

cited margin pressures and weak prices as the second priority.

31%

Almost one-third cited growth and expansion enablement as the third priority.

38%

cited “lack of a clear strategy/business case” as the second barrier to adoption of digital in refining.

TREND 5 DIGITAL BENEFITS ARE CLEAR - ABILITY TO REALIZE THEM IS NOT

38% CITED THE LACK OF A DIGITAL STRATEGY AS A MAJOR BARRIER TO WIDER DIGITAL ADOPTION.



Nearly two-thirds (**63%**) believe that effective plant management is the top benefit of digital technologies.



60% believe reducing operational risk is the second benefit.



More than half (**54%**) believe more efficient and predictive maintenance is the third benefit.

THE OPPORTUNITY

REFINERS NEED A DIGITAL ENABLEMENT PLAN AND A DIGITAL VISION

AS TECHNOLOGY COSTS DECLINE, AND MOBILE AND INTERNET OF THINGS (IOT) SOLUTIONS BECOME MORE VIABLE, **REFINERS MUST MOVE BEYOND “PILOTS” AND DEPLOY AT SCALE – TO SEE THE BENEFITS OF DIGITAL.**

THE KEY TAKE-AWAY

A DIGITAL ENABLEMENT PLAN REQUIRES A DIGITAL VISION EMBEDDED IN THE BUSINESS

THE BENEFITS OF DIGITAL CAN HELP TO:



Realize a reduction in operating costs.



Increase throughput and margins with existing asset base.



Achieve a fundamental business transformation.

FROM DIGITAL ENABLEMENT PLAN TO BUSINESS STRATEGY

01 More strategic digital planning and investment will support the main contributors to margin optimization: **feedstock management and asset reliability.**

02 Digital enablement plans should focus on moving from proof-of-concepts to scale quickly to achieve **greater deployment benefits.**

03 Refiners should start embedding both **new digital skills and innovation mind-sets** which will help to build digital maturity.

04 The key is for digital to not be a separate strategy, but an enabling one to help achieve **top quartile refining performance.**

“THE CONNECTED REFINERY RESEARCH” conducted on behalf of Accenture by PennEnergy Research in collaboration with Solomon Associates, surveyed refinery professionals worldwide.

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