2020 AFPM SUMMIT
Excellence in Plant Performance

DIGITAL TRANSFORMATION
JULY 22, 2020
2-3 PM EST
WHAT IS THE AFPM SUMMIT WEBINAR SERIES?

• AFPM has been conducting various webinars for years, mostly on safety related topics
• As we embark in developing The Summit, Excellence in Plant Performance, there will be more opportunity for member engagement

• Upcoming Webinars
  • **September** – FCC, Continuing Q&A from Summit Session
  • **October** - Crude Feedstock: Oilfield Implications on the Refining Processes

• Previous Webinars Available on the AFPM Summit Website
  • **February** - Safeguarding the FCCU during Transient Operations
  • **March** - Shutdown Best Practices for Reactor Systems
  • **April** - Reboiler Circuits For Trayed Columns
  • **May** – Learning Teams
  • **June** – Highlights of the Proposed Changes to API RP 751 Rev 5
WEBINARS ARE INTERACTIVE

- Ask questions, they will be answered at the end
- Use the polling software
- Webinar is being recorded and will be available for review online later
- Survey questions at the end of the webinar.
  - First in the Digital Transformation Series – we need your feedback on what we should address next!
Digital Transformation:

STRATEGY FOR ACHIEVING LONG-TERM SUSTAINABLE OPERATIONAL EXCELLENCE

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Background

Perspective:
Summary view of 5+ Decades of Personal IT/OT ‘Transformational’ Experience

DISCLAIMER:
All views expressed during this presentation are my own and do not represent the opinions or activities past or present of any entity with which I have been, am now, or potentially may be affiliated.
Objectives:
- Offer a baseline perspective of ‘Digital Transformation’ to stimulate thought and discussion towards ensuring the most desired implementation outcomes; and
- Set stage for a more detailed exchanges schedules for the virtual AFPM Summit.

Non-Objective:
- Prescribe an answer... Every business and every site is unique with equally unique wants and needs.

Key Assumptions:
- Having a Vision/Mission/Charter and other supporting key project elements is a given.
Approach to Discussion

Digital Transformation:
- History
- Technology Factors
- People Factors
- Process Factors

Summary
Interactive Polling Questions (1-2)

• To access the poll, use your phone to scan the QR code or visit the link and type in the meeting code
• Live results will be displayed in the presentation
• Note: responses are anonymous
History

• How we got here:
  
  • **Digitization** (of Information):
    Digitization is defined as the 'technical process' of "converting analog information into digital form"
  
  • **Digitalization** (of Industries and Organizations):
    Digitalization is the 'organizational process' or 'business process' of the technologically-induced change within industries, organizations, and markets
  
  • **Digital Transformation**:
    Transformation of existing business models, consumption patterns, socio-economic structures, legal and policy measures, organizational patterns, cultural barriers, etc.
History

• How you got to where you are:
  • Based upon ever evolving Information Technologies:
    • Digital Transformation started with Digitization
    • Digitalization leverages capabilities to optimize business and work processes and practices to maximize levels of efficiency and effectiveness towards achieving Operational Excellence:
      • Safety
      • Environmental
      • Financial Performance
    • Shareholder Value
    • Brand Equity
    • Others

• But, while an evolutionary step:
  • ‘Digital’ in Digital Transformation should not connote that this is an IT/OT driven initiative
Technology Factor

• Technology is the Essential Enabler
• Transformation is the next opportunity area for further increases levels of enterprise performance
• But, still with the same challenge
  • Being and Staying Top Quartile (or Desired Quartile) of Performance
  • When living in and working to succeed and sustain success in an ‘Exponential World’...
Technology Factor

Technology Evolution *Not* a Linear process -
- Moore’s Law - Chip density doubles every 18 months
- Metcalf’s Law - Computing power increases by the square of the number of nodes
- The Internet compounds Moore’s Law for a net compute power increase of $2^{3n}$

Leaders Stay on the Face of the Wave

Small Incremental Steps Solving *Today’s* Problems Will No Longer Work

Next Steps Need to be Defined and Started Before the Previous are Completed, Always Reevaluating the End Point
Technology Factor

ARCHITECTURES RULE

• Standards Based Architectures
  • Infrastructure
  • Application
  • Data
• More Critical than Ever Before
• Governing Principles for All that Comes Next
• Defines the Speed and Ease of Transformation as an On-Going Effort
• Defines an ‘Orchestration’ Strategy
Key Tech Factor

• Digital Transformation
  • Whether viewed as really something new or a marketing term, we are in a technology fueled ultra-marathon without a known finish line:
  • Accepting that it is just the next sprint:
    • Where are you on the course?
    • Where are you in the pack?
    • What are your strengths and vulnerabilities?
  • Interoperability is of equal value as functional capabilities

Commitment without understanding is a liability.
- Oliver Wight
Cultural Factor

• Human Asset Performance Management (HAPM)
  • Digital Transformation is Cultural Transformation
  • ‘Transformative Culture’ with an appetite for transformation greater than what can be delivered
Cultural Factor

• Inherent Challenge

Harmonize the three factors and synchronize the journey.

Ultimate is
Reachable

Capabilities
Unbeatable

Ultimate is
Sustainable

Operational Excellence – Everyone enabled and empowered to do the right things consistently well.
Cultural Factor

- Cultural Transformation Opportunity

Rate of Applicable Transformational Enabling Technology

Rate of Cultural Adoption

What if?

Rate of Cultural Adoption

Rate of Applicable Transformational Enabling Technology

ΔT

Performance
Cultural Factor

• Parity?
  • Focus
  • Resourcing
    • Programs
    • $$$
    • Time
    • Manpower
• If No, Why?
• If Yes, How?

Remembering: Transformation of existing business models, consumption patterns, socio-economic structures, legal and policy measures, organizational patterns, cultural barriers, etc.

So, dealing with the cultures of all your communities
Cultural Factor

• Transformation Value Driver:
  • Efficiency and Effectiveness; or
  • Innovation?

• Cultural Objectives of Transformation:
  • Engage?
  • Develop?
  • Evolve?

• Impacts of Transformation:
  • Overload or Load Reduction?
  • Depress or Stimulate?
  • Resistance or Acceptance?
  • Frustration or Delight?
Key Culture Factor

• Digital Transformation
  • Is more about transforming interaction between communities than about technology
  • The cultures of all involved communities need recognition as the key business transformation enabler
  • Accepting that change is constant:
    • What cultural transformation opportunities exist?
    • How can a culture that embraces and truly values transformation (change) be established?
  • Embrace methodology utilized by software/application development

“Company cultures are like country cultures. Never try to change one. Try, instead, to work with what you’ve got.”
- Peter Drucker
Process Factor

• Business Process Innovation
  • The Heart and Soul of Digital Transformation
  • Using What You Have, Adding a Little New, and Building Something Great
  • As an industry O&G lagging
Process Factors

Transformational Enablers/Game Changers:
- www / The Internet
  - Eliminated Business Constraints of Time and Distance
  - Acknowledged Business Differentiator during Pandemic
- AI/Analytics
  - Eliminates Additional Constraints of Scope and Scale

Everyone is Somewhere:
- What are the Untapped Transformational Opportunities?
- “The greatest danger in times of turbulence is not the turbulence; it is to act with yesterday's logic.” Peter Drucker
Process Factors

Fundamentally Changing Existing Norms

- C Level Sponsorship and Engagement Mandatory
- Dedicated Commitments (Organization, Resources, etc.)
- Cross Functional
- Identify Business Needs and Opportunities (In Your Terms)
- Greater Than or Equal Attention to Culture(s)
- Governing Principles
Key Process Factor

• Digital Transformation = Transformational Thinking
  • Beyond ‘Business Process Improvement’ or searching for incremental efficiency and effectiveness opportunities.

• Accepting that wherever you are is good:
  • Leverage What You Have and Where You Are to be Better by Assembling in New Ways
  • Spend for the Future
  • Think Holistically
  • Thinking/Acting Differently About Technology

• Enterprise Imperative
Summary

• Technology
  • Verify and understand existing technical ecosystem/architectures
  • Address foundational needs

• People/Culture
  • Cultural Transformation is inherent outcome of Digital Transformation
  • It is not just about the culture of a functional area, group, or site

• Process
  • Top Level Commitment
  • Look Beyond the Classic Metrics

Only three things happen naturally in organizations: friction, confusion, and under performance. Everything else requires leadership. - Peter Drucker
QUESTIONS?
Please complete the Slido survey questions
This will help us deliver relevant in the Digital Transformation Series
Let us know if you have a story you’d like to share!
Note: responses are anonymous

Join at slido.com #AFPM
DIGITAL TRANSFORMATION SERIES CONTINUES AT THE SUMMIT!

• Refining Case Studies on Leveraging Data Analysis and Reporting Tools for Decision Making
  • Tuesday, 8/25 11:30am EST
  • FACILITATOR: Abbas Dhalla, Chevron Corporation USA
  • SPEAKERS: Miguel F. G. Sison, Chevron Corporation USA, and Dan Oliveira, Flint Hills Resources
  • Learning objective: Leverage domain knowledge to help develop and create “easy-to-use” applications without requiring software coding/programming knowledge from existing data. Demonstration of Power BI tools will be provided.

• Connected Worker
  • Tuesday, 8/25 4:30pm EST
  • FACILITATOR: Rebecca Bourg, PBF Energy
  • PANELISTS: Ben Way, Phillips 66 and Jordan Oligmueller, AdvanSix
  • Learning objective: Panel discussion on different operating companies' approach to implementing a connected worker program. Rounds and LOTO applications will be highlighted.

• Digital Transformation: Case Studies on Developing Programs at Your Companies
  • Thursday, 8/27 12:45pm EST
  • FACILITATOR: Peter Reynolds, ARC Advisory Group
  • SPEAKERS: Douglas White, Emerson Automation Solutions, Todd Dixon, Marathon Petroleum Corporation and Bruce Taylor, Sinclair Oil Corporation
  • Learning objective: Case studies will be provided from an operating company and solution provider perspectives on how to develop and execute a digital transformation program at your company. Presentation and panel discussion.
FREE REGISTRATION FOR AFPM MEMBERS ENDS ON AUGUST 9TH!

2020 AFPM SUMMIT
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August 25-27, 2020
www.afpm.org/2020Summit
SUMMIT TOPICS

August 25 – Day 1

Leverage Emerging Technology for Improved Plant Performance and Efficiency

• Wireless Handheld Devices
• Public Policy Driving Technology
• Leveraging Technology for Knowledge Management
• Return on Investment with Refining and Petrochemical Data

Topics with Industry Wide Implications

• Fostering Profitability - Panel Discussion
• Turnaround Planning and Execution - Roundtable
• Utilizing Refinery Data – Solutions via Case Studies
• Emerging Leaders
• Future of Refining
• New Ideas for Turnaround Safety - Roundtable
• Human Organizational Performance (HOP)
• Contractor Onboarding for Turnarounds
• Workforce Development and Retention

August 26 and 27 – Day 2 and 3

Crude, Coking

• Town Hall featuring HSFO processing, Crude Compatibility, T/A and Reliability
• Monitoring and Improving Equipment Operations
• Coking and Crude Troubleshooting and Lessons Learned
• Unit Optimization
• FAQs – dive into hold-over topics from prior days

Gasoline Processing

• Lessons Learned PES Incident
• HF Alkylation Risk Management
• Town Hall featuring:
  • Corrosion in Alky Units (Poll)
  • Light Naphtha Balance Issues
  • Issues with Higher Utilization of Reformers (with higher octane demand)
  • Current Challenges with Gasoline Blending
  • Chloride Management Issues around Reformer/Isom
  • Unique challenges around Preparation for TA of Gasoline Units with recent regulation updates
• Benzene in Gasoline
• Reformer Reliability Issues
• Molecular Management around Gasoline Units
• Increased Octane Demand – Investment Strategy for the Future
• FAQs – dive into hold-over topics from prior days
SUMMIT TOPICS CONTINUED

Hydroprocessing

• Emptying Your Reactor – A Primer
• Effective Catalyst Selection Strategies
• Regulatory Compliance: Perception vs Reality
• Turnaround Scope Development for Dummies
• The How and Why of Hydroprocessing Safety Systems
• Driving Hydrocracker Profitability without Capital Investment
• FAQs – dive into hold-over topics from prior days

FCC

• Key Equipment Fundamentals and Maintenance
• Spent Catalyst Unloading Equipment Reliability
• Optimization at Reduced Rates
• Pressure Balance Fundamentals
• Refinery of the Future – Case study with Gulf Coast Economics
• Refractory Reliability Failure Mechanisms, New Technology and Best Practices

Technical Breakouts

• Integrating Operating Windows and Corrosions Control Documents Roundtable and Case Study on Integrity
• Flange Assemble Breakout
• Drones for Inspection Strategies
• Corrosion Control Case Studies, Inspection and Technology
• Risk Based Inspection
• Reliability Roundtable
• How to get the most Tool Time
• Asset Strategy Optimization
• Turnaround Scope
• Rope Access Repairs Roundtable
• Tank Maintenance and Cleaning
THANK YOU FOR YOUR PARTICIPATION